Journal of Fundamentals of Mental Health

Mashhad University of Medical Sciences

Psychiatry and Behavioral Sciences Research Center

Original Article **Open Access**

The association between parenting styles and self-esteem in children and adolescents with attention-deficit/hyperactivity disorder

Pouya Taji[1]; *Aazam Sadat Heydari Yazdi[2]; Fatemeh Moharreri[3]; Arash Ziaee[1]; Saeed Akhlaghi[4]

[1]*General physician, Student Research Committee, Mashhad University of Medical Sciences, Mashhad, Iran.*

[2]*Associate professor of child and adolescent psychiatry, Psychiatry and Behavioral Sciences Research Center, Mashhad University of Medical Sciences, Mashhad, Iran.*

[3]*Professor of child and adolescent psychiatry, Psychiatry and Behavioral Sciences Research Center, Mashhad University of Medical Sciences, Mashhad, Iran.*

[4]*Assistant professor in biostatistics, Department of Biostatistics, School of Health, Mashhad University of Medical Sciences, Iran.*

Abstract

Introduction: Attention-Deficit/Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder that significantly affects children's behavior, academic performance, and social interactions. These challenges can impact a child's self-esteem, and the role of parents in positive self-perceptions and emotional well-being is crucial. This study aimed to assess the association between parenting styles and self-esteem in children and adolescents with ADHD.

Materials and Methods: This cross-sectional study enrolled 77 participants at Ibn-e-Sina Psychiatric Hospital-Mashhad-Iran during January 2023-December 2024. A child and adolescent psychiatrist established the initial ADHD diagnosis (DSM-5-TR). We evaluated the participants using the Swanson, Nolan, and Pelham-IV Rating Scale (SNAP-IV) and the Coopersmith Self-Esteem Inventory (CSEI). Parents also completed the Baumrind Parenting Styles Questionnaire. Analyses were conducted in SPSS v23.

Results: Very low and low self-esteem were observed in 39% and 16.9% of participants, respectively. The authoritative parenting style had the highest mean score, followed by permissive and authoritarian. Parenting styles showed no association with self-esteem or ADHD symptom scores. Self-esteem was higher in boys than girls (P= 0.023) and higher in elementary versus middle and high school students (P< 0.001). In multiple linear regression, age was independently and negatively associated with self-esteem (β= −0.352, P= 0.003).

Conclusion: In the present study, no significant relationship was observed between self-esteem and parenting style, and age was an independent factor affecting self-esteem level. To obtain more accurate results, longitudinal studies and larger sample sizes are needed.

Keywords: Attention-deficit/hyperactivity disorder, Parenting, Self-esteem

Please cite this paper as:

Taji P, Heydari Yazdi AS, Moharreri F, Ziaee A, Akhlaghi S. The association between parenting styles and self-esteem in children and adolescents with attention-deficit/hyperactivity disorder. Journal of Fundamentals of Mental Health 2026 May-Jun; 28(3): 185-194. DOI: 10.22038/jfmh.2026.85843.3213

***Corresponding Author:**

Psychiatry and Behavioral Sciences Research Center, Mashhad University of Medical Sciences, Mashhad, Iran.

heydarias@mums.ac.ir

Received: Apr. 21, 2025

Accepted: Dec. 23, 2025

Copyright©2026 Mashhad University of Medical Sciences. This work is licensed under a Creative Commons Attribution-Noncommercial 4.0 International License https:// creativecommons. org/licenses/ by-nc/4.0/ deed.en

Introduction

Attention- Deficit/ Hyperactivity Disorder (ADHD) is a prevalent neurodevelopmental disorder defined in DSM-5-TR, occurs in about 7.6% of children (95% confidence interval [CI]: 6.1-9.4%) and 5.6% (95% CI: 4.8-7%) of adolescents and 2.5% of adults worldwide; prevalence is higher in special populations such as foster children or correctional settings (1,2). Characterized by persistent patterns of inattention, hyperactivity, and impulsivity, ADHD extends beyond these core symptoms; individuals with ADHD may exhibit neurocognitive deficits in working memory, set shifting, reaction-time variability, response inhibition, vigilance, and planning/organization (3). DSM-5-TR also notes that emotional dysregulation/emotional impulsivity commonly occurs in children and adults with ADHD (4). While neurobiological findings have been reported in ADHD, DSM-5-TR states that no biological marker is diagnostic; meta-analyses of neuroimaging do not show consistent differences from controls, and EEG theta/beta power differences are not reliable—therefore neuroimaging and EEG cannot be used for diagnosis (5-7). The pervasive nature of ADHD significantly impacts various aspects of a young person's life, including social interactions, academic achievement, and emotional well-being, often leading to diminished self-esteem (8-10). Adolescence is a particularly sensitive period for these psychosocial sequelae: longitudinal data following youth with ADHD across middle and high school show distinct trajectories of lower global self-worth that prospectively relate to depression and academic/social outcomes (11).

Self-esteem, a multifaceted construct encompassing cognitive and emotional self-evaluation (12), is increasingly recognized as a critical factor in the psychosocial adjustment of children and adolescents. While generally considered a stable trait, self-esteem, particularly in specific domains, can fluctuate and is inversely related to various psychiatric disorders. The relationship between ADHD and self-esteem is complex and somewhat controversial. Cross-sectional studies have often demonstrated lower self-esteem in individuals with ADHD, potentially stemming from repeated experiences of failure in academic and social domains (13,14). Among adolescents, large-scale longitudinal modeling (ages 11-17) indicates reciprocal links between ADHD symptoms, peer problems, and self-esteem, highlighting peer difficulties as a key pathway through which ADHD can erode self-worth in the teen years (15). Consistent with this, young adolescents with ADHD experience elevated peer victimization, which in turn predicts lower self-esteem and greater internalizing symptoms (16). Longitudinal research has further supported this, indicating lower self-esteem in adolescents with ADHD compared to their neurotypical peers. However, paradoxical findings also exist, with some studies suggesting that children with ADHD may exhibit a "positive illusory bias," overestimating their competence as a self-protective mechanism (17,18). Despite these conflicting results, a consensus remains on the crucial role of positive self-esteem in facilitating coping mechanisms and adaptive functioning for individuals with ADHD (19).

Furthermore, the development of self-esteem in children with ADHD is likely intertwined with parenting practices. Research has linked ADHD symptomatology to parenting styles characterized by overprotection, control, rejection, and inconsistent discipline (20,21). Baumrind's seminal work (1971) categorizes parenting styles along dimensions of affect (warmth and responsiveness) and control, identifying authoritarian, authoritative, and permissive approaches. Authoritarian parenting, characterized by coercive discipline and rigid rules, contrasts with authoritative parenting, which emphasizes inductive discipline and reasoning. Permissive parenting, conversely, is lenient and grants children considerable autonomy (22,23). The interpersonal acceptance-rejection theory further highlights the critical roles of parental warmth and behavioral control in child development (24). Studies have demonstrated that parental rejection is a predictor of persistent ADHD symptoms and severity (20,25), while parental warmth is associated with positive psychosocial outcomes in children with ADHD (26). The quality of the parent-child relationship, influenced by parental attitudes and behaviors, is thus posited to significantly shape the self-esteem of children with ADHD. While traditional parenting models suggest authoritative parenting as optimal for fostering self-esteem (27), the dynamics in ADHD populations may be more nuanced, with some research even suggesting potential links between maternal

control and positive self-perception in this group, possibly due to the aforementioned positive illusory bias (17,18). Importantly, these relationship processes extend into adolescence: systematic reviews and case-control studies indicate higher rates of insecure attachment representations among youth with ADHD, a pattern that remains evident in adolescent samples and is relevant to emotion regulation and self-worth (28).

Given the complex interplay between ADHD, self-esteem, and parenting, and the potential for culturally specific influences (29,30), a deeper understanding of these relationships is crucial for developing effective intervention strategies. Parent training programs and cognitive-behavioral interventions have shown promise in enhancing parenting skills and improving self-esteem in children with ADHD (31,32). However, a robust evidence base specifically examining the nuanced relationship between parenting styles and self-esteem in children and adolescents with ADHD, while considering demographic factors, remains necessary. Therefore, this study aims to address this gap in the literature by investigating the relationship between self-esteem in children and adolescents diagnosed with ADHD and parenting style. Specifically, this research will also examine the relationship between self-esteem in this population and several demographic factors, including age, gender, educational level (grade level), and parents' education level. The findings of this study will contribute to a more comprehensive understanding of the factors influencing self-esteem in young individuals with ADHD, potentially informing the development of targeted interventions to promote positive self-perception and overall well-being in this vulnerable population.

Materials and Methods

This cross-sectional study was conducted at Ibn-e-Sina Psychiatric Hospital in Mashhad, Iran, from January 2023 to December 2024. The study population comprised children and adolescents diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD) referred to Ibn-e-Sina Psychiatric Hospital. A total of 77 participants were selected using the convenience sampling method.

Participants were eligible if they were aged 8 to 18 years and had a DSM-5-TR ADHD diagnosis confirmed by a child and adolescent psychiatrist. Inclusion also required current treatment with methylphenidate or atomoxetine at a therapeutic dose for at least two months, absence of other major psychiatric disorders or chronic medical conditions, and provision of informed consent from participants and their guardians. Participants were excluded if they did not fully complete all questionnaires.

Research instruments

A) Demographic questionnaire: This questionnaire was designed to gather essential background information on participants and their families. It included items assessing participant age, gender, educational level (current school grade), parental education level, and the duration since the participant's ADHD diagnosis. This information was collected to characterize the sample and to examine potential confounding effects on the study outcomes.

B) Swanson, Nolan, and Pelham-IV Rating Scale (SNAP-IV): We used the parent form of the 18-item SNAP-IV to index ADHD symptom severity. The SNAP-IV is widely used for school-age children and adolescents (approximately 6-18 years). Items 1-9 and 10-18 correspond exactly to DSM-5/DSM-5-TR inattention and hyperactivity/impulsivity symptoms, respectively (the 18 Criterion A symptoms are unchanged from DSM-IV to DSM-5/DSM-5-TR). In this study the SNAP-IV served only as a severity measure; ADHD diagnoses were established clinically by a child and adolescent psychiatrist using DSM-5-TR. We report established parent-report SNAP-IV thresholds (inattention≥ 1.78; hyperactivity/ impulsivity≥ 1.44; combined≥ 1.67). All participants were 8-15 years old, i.e., within the recommended age range; thus, the DSM-5 provision of a lower (≥ 5) symptom count for ages≥ 17 did not apply. The SNAP-IV demonstrates strong psychometric properties, including high internal consistency with a Cronbach's alpha of 0.97 for the total scale, and 0.90 and 0.76 for the inattention and hyperactivity/ impulsivity subscales, respectively (33). Furthermore, reliability in an Iranian sample has been reported as robust, with test-retest reliability (r= 0.82), Cronbach's alpha (α= 0.90), and split-half reliability (r= 0.76) (34). Although developed under DSM-IV, the 18 items of the SNAP-IV map directly onto the DSM-5-TR ADHD symptom set and remain appropriate for school-age and

adolescent assessment. The SNAP-IV parent form is commonly used for ages 6-18; our analytic sample (8-15 years) falls within this range.

C) Coopersmith Self-Esteem Inventory (CSEI): This 58-item self-report questionnaire assesses an individual's feelings, opinions, and reactions related to their self-worth. Participants respond to statements about themselves, and scoring follows standardized procedures to yield a self-esteem score. Interpretation of CSEI scores is based on gender-specific norms, with distinct score ranges categorized into levels of self-esteem (e.g., low, medium, good, very good) for males and females. The CSEI has demonstrated acceptable validity and reliability in diverse populations, with a reported Cronbach's alpha coefficient of 0.88 for the total scale (35). The 58-item school form targets ages 8-15; all participants in this study fell within this range.

D) Baumrind Parenting Styles Questionnaire: Parenting styles were evaluated using the Baumrind Parenting Styles Questionnaire, a 30-item instrument grounded in Baumrind's theory of parental authority. The questionnaire consists of three 10-item subscales assessing permissive, authoritarian, and authoritative parenting styles. Parents rate each item on a 5-point Likert scale (1= "strongly disagree" to 5= "strongly agree"). For each subscale, raw scores are summed and converted to percentages. Parenting style classification is determined using threshold criteria: scores above 60% on one style and below 40% on the contrasting style. Specific classifications are: authoritarian (> 60% authoritarian, < 40% authoritative), authoritative (> 60% authoritative, < 40% permissive), and permissive (> 60% permissive, <40% authoritarian). Scores not meeting these criteria are categorized as "combined." Test-retest reliability over two weeks has been reported as r= 0.81 (permissive), r= 0.86 (authoritarian), and r= 0.78 (authoritative) for mothers (with comparable father estimates of 0.77, 0.85, and 0.92) (36). Primary variables were ADHD Symptom Index (categorical: yes/no, based on SNAP-IV thresholds), self-esteem level (ordinal: low/medium/good/very good, based on CSEI gender norms), and parenting style (categorical: permissive/authoritarian/authoritative/combined, based on Baumrind thresholds). Potential confounders were age (continuous, years), gender (nominal: male/female), participant education level (ordinal: elementary/ middle/ high school), and parental education level (ordinal: higher education/non-higher education). Participants were recruited via referrals to Ibn-e-Sina Psychiatric Hospital. A child and adolescent psychiatrist confirmed DSM-5-TR ADHD diagnoses. Data were analyzed using SPSS version 23. All tests were two-tailed with $\alpha= 0.05$. Descriptive statistics (means/SD, frequencies/ percentages) summarized variables. Group mean comparisons used t-tests (two groups) or ANOVA (more than two). Chi-square tests assessed categorical variable associations. Spearman's rho (ρ) assessed parenting style and self-esteem correlation. Pearson's r assessed age and self-esteem correlation. Linear regression evaluated the relationship between self-esteem (dependent) and parenting style, age, gender, ADHD subtype, and education stage (independent). To minimize information loss from dichotomizing SNAP-IV scores at clinical cutoffs, we also modeled continuous SNAP-IV mean subscale scores in sensitivity analyses. We planned to use a one-way ANOVA to compare three parenting style groups, with a significance level of $\alpha= 0.05$. To determine the appropriate sample size, we calculated the expected effect size using data from previous research on family-related self-esteem in adolescents (37). From the prior study, we found a standard deviation between group means of 0.68 and a common within-group standard deviation of 1.88, yielding a Cohen's f effect size of 0.36 ($0.68 \div 1.88$). This converts to partial $\eta^2= 0.116$, which represents a medium-to-large effect according to conventional benchmarks.Our power analysis showed we needed 26 participants per group (78 total) to achieve 81% power at $\alpha= 0.05$, assuming equal group sizes and similar variances across groups. We recruited 77 participants, which is very close to our target of 78. This minimal difference of one fewer participant reduces our statistical power by only 1 percentage point, from 81% to 80%. This reduction is negligible and our sample size still adequately meets our pre-specified power requirements for detecting meaningful differences between the three parenting style groups.

Results

This study investigated 77 children and adolescents diagnosed with ADHD. Participants ranged in age from 8 to 15 years, with a mean age of 10.73 years (SD= 2.62).

Table 1 presents the demographic characteristics of the participants. The sample comprised predominantly boys (80.5%, n= 62) compared to girls (19.5%, n= 15).The majority of participants were enrolled in primary school (76.6%, n= 59), with years of education ranging from 2 to 10 years. A substantial proportion of parents had attained university education, with 80.5% (n= 62) of fathers and 88.3% (n= 68) of mothers holding a university degree.

Table 1. Demographic characteristics of participants

Characteristic	Category	N	Percentage (%)
Gender	Girl	15	19.5
	Boy	62	80.5
Age (Year)	Mean ± SD	10.73 ± 2.62	-
	Range	8 - 15	-
Years of education	Mean ± SD	-	-
	Range	2 - 10	-
Educational level	Primary school (1-6)	59	76.6
	Middle school (7-9)	16	20.8
	High school (10-12)	2	2.6
Father's education	Non-higher	15	19.5
	Higher education	62	80.5
Mother's education	Non-higher	9	11.7
	Higher education	68	88.3

The duration since ADHD diagnosis ranged from 0 to 7 years, with a mean of 2.28 years (SD= 1.76). SNAP-IV questionnaire scores indicated a mean inattention score of 1.35 (SD= 0.68) and a mean hyperactivity score of 1.56 (SD= 0.81). Clinical significance, defined as exceeding the parental threshold on the SNAP-IV, was observed for hyperactivity in a larger proportion of participants (53.2%, n= 41) compared to inattention (18.2%, n= 14). The mean self-esteem score, as measured by the Coopersmith Self-Esteem Inventory (CSEI), was 34.52 (SD= 8.63). A substantial proportion of participants exhibited low to very low self-esteem (55.9% combined). Parenting styles were assessed, revealing the authoritative style as the most prevalent, followed by combined and permissive styles.

Table 2. Clinical characteristics, self-esteem, and parenting styles of participants

Characteristic	Category/Metric	N	Percentage (%)	Mean ± SD	Min	Max
Years since ADHD diagnosis	Mean ± SD	-	-	2.28 ± 1.76	0	7
SNAP-IV inattention score	Mean ± SD	-	-	1.35 ± 0.68	0	3.00
SNAP-IV hyperactivity score	Mean ± SD	-	-	1.56 ± 0.81	0	3.25
SNAP-IV inattention-hyperactivity score	Mean ± SD	-	-	1.37 ± 0.64	0	2.75
Clinical significance of inattention	Absent	63	81.8	-	-	-
	Present	14	18.2	-	-	-
Clinical significance of hyperactivity	Absent	36	46.8	-	-	-
	Present	41	53.2	-	-	-
Clinical significance of inattention-hyperactivity	Absent	54	70.1	-	-	-
	Present	23	29.9	-	-	-
Self-esteem level (CSEI)	Very Low	30	39	-	-	-
	Low	13	16.9	-	-	-
	Medium	13	16.9	-	-	-
	High	13	16.9	-	-	-
	Very high	8	10.4	-	-	-
Parenting style - permissive (percentage score)	Mean ± SD	-	-	45.06 ± 11.91	12.5	75.00
Parenting style - authoritative (percentage score)	Mean ± SD	-	-	77.46 ± 12.81	25.0	100.0
Parenting style - authoritarian (percentage score)	Mean ± SD	-	-	29.87 ± 11.56	0.5	57.0
Parenting style type	Permissive	4	5.2	-	-	-
	Authoritative	26	33.8	-	-	-
	Authoritarian	0	0.0	-	-	-
	Combined	47	61.0	-	-	-

Pearson correlation analysis revealed significant negative correlations between self-esteem score and both age (r= -0.368, *P*= 0.001) and years of education (r= -0.426, *P*< 0.001). This indicates that older participants and those with more years of education tended to have lower self-esteem. No significant correlations were found between self-esteem and SNAP-IV scores (inattention, hyperactivity, or combined), or parenting style scores (permissive, authoritative, or authoritarian). Independent-samples t-test indicated a significant difference in self-esteem between boys and girls (*P*= 0.023). Boys (Mean= 35.61, SD= 7.64) exhibited higher self-esteem than girls (Mean= 30.00, SD=11.08). One-way ANOVA revealed a significant effect of educational level on self-esteem (*P*< 0.001). Post-hoc analysis indicated that participants in primary school (Mean= 36.73, SD= 7.02) had significantly higher self-esteem compared to those in middle school (Mean= 27.38, SD= 9.11) and high school (Mean= 23.50, SD= 13.43).

No significant differences in self-esteem were observed based on parental education level, clinical significance of ADHD symptoms, or parenting style type. Multiple linear regression analysis, examining independent predictors of self-esteem, demonstrated that age was a significant negative predictor (β= -0.352, *P*= 0.003). Gender and parenting style scores (permissive, authoritative, and authoritarian) were not significant independent predictors of self-esteem in this model.

Discussion

This study investigated the association between parenting styles and self-esteem in children and adolescents diagnosed with ADHD. The principal finding of this research was the absence of a statistically significant relationship between parenting styles (permissive, authoritative, and authoritarian) and self-esteem within this ADHD sample. This contrasts with expectations based on some prior literature. Consistent with previous research, self-esteem levels were generally low in this population. Conversely, age and gender emerged as significant correlates of self-esteem, with self-esteem scores decreasing with age and boys reporting higher self-esteem than girls. These results provide a nuanced understanding of factors influencing self-esteem in young individuals with ADHD, necessitating careful interpretation within the context of existing literature and implications for clinical practice.

The observation that a significant proportion of children and adolescents with ADHD in this study exhibited low to very low self-esteem (55.9% below average) is consistent with a substantial body of prior research documenting compromised self-perception in this population (39-41). Specifically, our findings align with studies employing validated self-esteem measures such as the Multidimensional Self-Esteem Test (TMA) and the Five Scale Self-Esteem Test for Children (FSC), which have also reported significantly reduced self-esteem scores in ADHD groups compared to control groups (42-44). This convergence of findings across multiple studies, including the present research conducted with an Iranian sample, strengthens the understanding of low self-esteem as a salient comorbidity and potential contributing factor to the challenges experienced by individuals with ADHD (12,45). These results underscore the critical need for early identification and interventions that address not only core ADHD symptoms but also proactively foster self-esteem development from a young age.

Contrary to initial hypotheses and some existing literature suggesting a link between parenting styles and child outcomes in ADHD (21,30,32), this study did not find a significant association between authoritative, permissive, or authoritarian parenting styles and self-esteem within the current sample. This finding diverges from a study by McDonald (2022) on Hispanic children with ADHD, which reported a positive correlation between authoritative parenting and self-esteem, and the work of Kurman et al. (2018) who found authoritative parenting associated with lower absolute self-esteem in ADHD, albeit with a slightly different research focus (17,46). Several factors may account for this discrepancy. Firstly, cultural context likely moderated the link between parenting style and self-esteem in our Iranian sample: in many Middle Eastern settings, socialization goals emphasize both autonomy and relatedness—what Kağıtçıbaşı terms the “autonomous-related self”—so firm parental guidance can be construed as care and responsibility rather than rejection, reshaping how control relates to self-views (47). Cross-cultural work with Arab adolescents shows that practices labeled “authoritarian” in Western

typologies are not invariably detrimental in collectivist milieus, with several studies reporting that authoritarian parenting, when normative, is not associated with poorer psychological adjustment (47). Iran-specific caregiving patterns may further shape these associations: qualitative evidence describes the historically prominent role of mothers and strong mother–adolescent bonds, features that can buffer interpretations of strictness and maintain closeness even under high parental control (48). Relatedly, Western style labels can obscure culturally adaptive forms of firm control—Baumrind's distinction between confrontive (directive, reasoned) versus coercive (hostile, arbitrary) control—suggesting that mixed or "combined" styles common in our data may reflect ecologically normative blends not fully captured by the classic tripartite typology (49). Notably, authoritative parenting still tends to predict favorable outcomes in Iran, especially in academic and relational domains via mechanisms such as parent involvement and self-regulated learning, which may not translate directly to global self-esteem metrics (50). Finally, measurement issues merit caution: parenting-style instruments were developed in Western contexts and may lack cross-cultural invariance, and although global self-esteem scales (e.g., Rosenberg) show acceptable psychometrics in Iran, cultural meanings and response styles can attenuate observed associations (51).

Secondly, methodological differences across studies could contribute to the observed inconsistencies. This research utilized self-report questionnaires to assess parenting styles, which may reflect parental perceptions rather than directly measured parenting behaviors. Furthermore, variations in the specific instruments used across different studies may yield disparate results. Thirdly, the complex interplay of factors influencing self-esteem development in individuals with ADHD may diminish the direct impact of parenting style. The severity of ADHD symptoms, co-occurring conditions, social experiences outside the family environment, and even genetic predispositions could exert a more substantial influence on self-esteem in this population, potentially overshadowing the isolated effect of parenting style. It is also plausible that the 'combined' parenting style observed in our sample represents a more ecologically valid depiction of real-world parenting that is not fully captured by the traditional Baumrind typology.

The finding that self-esteem decreased with age in children and adolescents with ADHD warrants attention. This suggests a potential developmental trajectory wherein, as children with ADHD mature, they may become increasingly cognizant of their challenges and the disparities between themselves and their neurotypical peers, contributing to a decline in self-esteem. This observation emphasizes the importance of early interventions aimed at bolstering self-esteem to mitigate the potential for negative self-perceptions as children transition into adolescence and beyond.

The significant observation that boys with ADHD exhibited higher self-esteem than girls also represent a notable contribution. This gender difference is multifaceted and may be influenced by a combination of factors. Societal expectations and gender roles could contribute to differential expressions or perceptions of self-esteem in boys and girls with ADHD. Alternatively, this finding may reflect underlying gender-based differences in the manifestation or lived experience of ADHD. While some research suggests boys with ADHD may overestimate their competencies (52), the current study indicates a genuine difference in reported self-esteem levels within this sample, necessitating further investigation to elucidate the underlying mechanisms.

This study offers valuable insights into self-esteem and its correlates within an under-researched population of Iranian children and adolescents with ADHD. A key strength of this research is its novel contribution as, to the best of our knowledge, the first study to specifically investigate the relationship between parenting styles and self-esteem within this demographic in Iran. Furthermore, the findings contribute to the growing body of literature confirming lower self-esteem as a common characteristic in individuals with ADHD.

However, several limitations should be acknowledged. The use of convenience sampling limits the generalizability of the findings to the broader population of Iranian children and adolescents with ADHD. The reliance on self-report questionnaires introduces the potential for biases, such as social desirability and recall bias. The sample size of 77, while adequate for preliminary investigations, could be expanded to enhance

statistical power and facilitate more detailed subgroup analyses (e.g., by age group or ADHD subtype). Furthermore, the study did not control for potentially confounding variables, including medication status, socio-economic status, co-occurring conditions, and ADHD subtype (inattentive, hyperactive-impulsive, combined). Future research should address these limitations to provide a more comprehensive understanding of the factors influencing self-esteem in this population.

Conclusion

The findings of this study underscore the significant concern of low self-esteem among Iranian children and adolescents with ADHD. This highlights the importance of integrating self-esteem enhancement strategies into comprehensive treatment plans, particularly beginning in early childhood. While parenting styles, as measured in this study, were not found to be directly associated with self-esteem, age and gender emerged as significant factors, indicating a complex interplay of individual, developmental, and potentially cultural factors influencing self-esteem in this population. This necessitates a multi-faceted approach in both research and clinical practice that extends beyond a singular focus on parenting to encompass a broader spectrum of developmental influences. Future research should prioritize longitudinal study designs to track self-esteem development over time, further investigate the role of cultural context in parenting and child outcomes, incorporate observational measures of parenting behaviors, and explore the mediating and moderating effects of variables such as medication, ADHD subtypes, co-morbidities, and socio-economic status. Furthermore, qualitative research methodologies could provide valuable in-depth insights into the lived experiences of individuals with ADHD and their self-esteem development. Moving forward, a comprehensive and nuanced approach is crucial to effectively support healthy self-esteem development in individuals with ADHD, acknowledging the limitations of focusing solely on parenting and considering a wider array of influential factors throughout the lifespan.

Acknowledgements

The authors thank all ADHD children and adolescents and their parents who participated in this study.

Conflict of Interests

The authors declare no conflict of interest.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Ethical Considerations

The study was conducted and written in accordance with the STROBE checklist. The study protocol was approved by the Ethics Committee of the Faculty of Medicine at Mashhad University of Medical Sciences, with approval. Informed written consent was secured from all participants and their parents or guardians, after a clear explanation of the purpose and procedures was provided. Confidentiality of all participant information was maintained throughout the study; data were securely stored and anonymized for analysis. Participants were informed of their right to withdraw from the study at any time without consequences.

Code of Ethics

IR.MUMS. MEDICAL. REC. 1401. 655 and protocol number 4012010

Authors' Contributions

Conceptualization: A.S.H.Y., F.M., P.T.
Investigation: P.T., A.K.
Methodology: A.S.H.Y., F.M.
Project administration: A.S.H.Y., F.M.
Resources: P.T., A.K.
Supervision: A.S.H.Y., F.M.
Writing – original draft: A.S.H.Y., F.M., P.T., A.K., S.A., A.Z.
Writing – review, and editing: A.S.H.Y., F.M., P.T., A.K., S.A., A.Z.

References

1. Song P, Zha M, Yang Q, Zhang Y, Li X, Rudan I. The prevalence of adult attention-deficit hyperactivity disorder: A global systematic review and meta-analysis. J Glob Health 2021; 11: 04009.
2. Salari N, Ghasemi H, Abdoli N, Rahmani A, Shiri MH, Hashemian AH, et al. The global prevalence of ADHD in children and adolescents: A systematic review and meta-analysis. Ital J Pediatr 2023; 49(1) :48.
3. Kilian B, Sidiropoulos K. ADHS-Definition und Diagnose. EEG-neurofeedback bei ADS und ADHS: Innovative Behandlung von Kindern, Jugendlichen und Erwachsenen. New York: Springer; 2023: 3-8.

4. Koutsoklenis A, Honkasilta J. ADHD in the DSM-5-TR: What has changed and what has not. Front Psychiatry 2023; 13: 1064141.
5. Parlatini V, Itahashi T, Lee Y, Liu S, Nguyen TT, Aoki YY, et al. White matter alterations in Attention-Deficit/Hyperactivity Disorder (ADHD): A systematic review of 129 diffusion imaging studies with meta-analysis. Molec Psychiatry 2023; 28(10): 4098-123.
6. Cortese S, Aoki YY, Itahashi T, Castellanos FX, Eickhoff SB. Systematic review and meta-analysis: Resting-state functional magnetic resonance imaging studies of attention-deficit/hyperactivity disorder. J Am Acad Child Adolesc Psychiatry 2021; 60(1): 61-75.
7. Chen C, Sun S, Chen R, Guo Z, Tang X, Chen G, et al. A multimodal neuroimaging meta-analysis of functional and structural brain abnormalities in attention-deficit/hyperactivity disorder. Prog Neuro-psychopharmacol Biol Psychiatry 2025; 136: 111199.
8. Pagespetit È, Pagerols M, Barrés N, Prat R, Martínez L, Andreu M, et al. ADHD and academic performance in college students: A systematic review. J Atten Disord 2025; 29(4): 281-97.
9. Wanni Arachchige Dona S, Badloe N, Sciberras E, Gold L, Coghill D, Le HND. The impact of childhood attention-deficit/hyperactivity disorder (ADHD) on children's health-related quality of life: A systematic review and meta-analysis. J Atten Disord 2023; 27(6): 598-611.
10. Sürig L, Kerbage H, Courtabessis E, Diaz E, Visier A, Fongaro E, et al. Attention deficit hyperactivity disorder, self-esteem and the impact of treatments. Encephale 2024; 50(6): 603-9.
11. Dvorsky MR, Langberg JM, Becker SP, Evans SW. Trajectories of global self-worth in adolescents with ADHD: Associations with academic, emotional, and social outcomes. J Clin Child Adolesc Psychol 2019; 48(5): 765-80.
12. González-Arratia López-Fuentes NI, Torres Muñoz MA, Díaz-Loving R. The role of self-esteem, self-efficacy, social support and resilience in psychological adjustment in schoolchildren. Psychol Russ 2025; 18(1): 3-19.
13. Massoodi A, Moudi S, Malekiamiri M, Gholinia Ahangar H. Comparison of self-esteem and quality of life in 8-12-year-old children with ADHD with and without learning disorders. BMC Psychol 2024; 12(1): 218.
14. Ashraf K, Zahra SS, Hussain H, Noor F, Anwar M, Abbasi ZI, et al. Effect of attention-deficit on self-efficacy and academic performance in secondary school going children: A comparative cross-sectional study. International journal 2024; 11(1): 421-37.
15. Russell A, Hoxha D, Murray A. Developmental relations between ADHD and self-esteem: Evaluating peer problems as a mediating mechanism. Eur Child Adolesc Psychiatry 2025: 34(11): 3463-73.
16. Fogleman ND, McQuade JD, Mehari KR, Becker SP. In-person victimization, cyber victimization, and polyvictimization in relation to internalizing symptoms and self-esteem in adolescents with attention-deficit/hyperactivity disorder. Child Care Health Dev 2021; 47(6): 805-15.
17. McDonald CACL. The role of self-esteem and parenting styles among hispanic children and adolescents with attention deficit hyperactivity disorder. USA, Florida: Keiser University; 2022.
18. Molina MF. Perceived parenting style and self-perception in children with attention deficit/hyperactivity disorder. Int J Psychol Res 2015; 8(1): 61-74.
19. Alfi B, Hapsari II, Akbar Z. (editors). The role of peer support as a social protective factor for adolescent resilience with ADHD: Literature review in a positive psychology perspective. International Conference on Psychology and Education (ICPE); 2025.
20. Brinksma DM, Hoekstra PJ, de Bildt A, Buitelaar JK, van den Hoofdakker BJ, Hartman CA, et al. Parental rejection in early adolescence predicts a persistent ADHD symptom trajectory across adolescence. Eur Child Adolesc Psychiatry 2023; 32(1): 139-53.
21. Su X, Chen Y. (editors). The impact of maternal parenting styles on children's attention deficit hyperactivity: The mediating role of self-concept. Proceedings of the 2nd International Conference on Educational Knowledge and Informatization; 2024.
22. Minsih M. Parenting patterns in the formation of children's behavior (Case study in children with ADHD). Profesi Pendidikan Dasar 2023; 10(3): 219-30.
23. Baumrind D. Current patterns of parental authority. Dev Psychol 1971; 4(1p2): 1.
24. Ankori G, Solan M, Plishty S, Brunstein Klomek A, Apter A, Yagil Y. The role of parental qualities in supporting children with ADHD. Children (Basel) 2025; 12(7): 845.
25. Mushtaq R, Saleem SJPJoPR. Parental rejection and attention deficit and hyperactivity disorder symptoms in university students: Role of trait impulsivity. Pakistan journal of psychological research 2023; 38(2): 295-308.
26. Goodman SH, Simon HF, Shamblaw AL, Kim CY. Parenting as a mediator of associations between depression in mothers and children's functioning: A systematic review and meta-analysis. Clin Child Fam Psychol Rev 2020; 23: 427-60.
27. Pinquart M, Gerke D-C. Associations of parenting styles with self-esteem in children and adolescents: A meta-analysis. J Child Fam Stud 2019; 28: 2017-35.

28. Dekkers TJ, Hornstra R, van den Hoofdakker BJ, de Jong SRC, Schaaf JV, Bosmans G, et al. Attachment Representations in Children with and without Attention-Deficit/Hyperactivity Disorder (ADHD). Brain Sci 2021; 11(11): 1516.
29. Sakashita STJ. Collectivist culture values and self-esteem in Asian Americans with ADHD. Ph.D. Dissertation. University of San Francisco; 2026.
30. Patel P, Behl J, Karim T, Palnati SR, Bhakta S. Parenting styles and attention deficit hyperactivity disorder in the South Asian population: A narrative review. Cureus 2024; 16(12): e74967.
31. Gavin B, Twomey C, Minihan E, O'Reilly G, McNicholas FJIES. Parenting interventions, ADHD and homework: A systematic review. Irish educational studies 2024; 43(4): 843-63.
32. Psyllou C, Luman M, van den Hoofdakker BJ, Van der Oord S, Aghebati A, Boyer B, et al. Research review: Mechanisms of change and between-family differences in parenting interventions for children with ADHD–an individual participant data meta-analysis. J Child Psychol Psychiatry. 2025; 66(9): 1304-19.
33. Costa DS, de Paula JJ, Malloy-Diniz LF, Romano-Silva MA, Miranda DM. Parent SNAP-IV rating of attention-deficit/hyperactivity disorder: Accuracy in a clinical sample of ADHD, validity, and reliability in a Brazilian sample. J Pediatr (Rio J) 2019; 95(6): 736-43.
34. Sadrosadat S J, Houshyari Z, Zamani R, Sadrosadat L. [Determination of psychometrics index of SNAP-IV Rating Scale in parents execution]. Archives of rehabilitation 2008; 8(4): 59-65. (Persian)
35. Herz L, Gullone E. The relationship between self-esteem and parenting style: A cross-cultural comparison of Australian and Vietnamese Australian adolescents. J Cross Cult Psychol 1999; 30(6): 742-61.
36. Buri JR. Parental authority questionnaire. J Pers Assess 1991; 57(1): 110-9.
37. Martinez I, Garcia F, Veiga F, Garcia OF, Rodrigues Y, Serra E. Parenting styles, internalization of values and self-esteem: A cross-cultural study in Spain, Portugal and Brazil. Int J Environ Res Public Health 2020; 17(7): 2370.
38. von Elm E, Altman DG, Egger M, Pocock SJ, Gotzsche PC, Vandenbroucke JP, et al. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: Guidelines for reporting observational studies. BMJ 2007; 335(7624): 806-8.
39. Antoniou E, Rigas N, Orovou E, Papatrechas A, Sarella A. ADHD symptoms in females of childhood, adolescent, reproductive and menopause period. Mater Sociomed 2021; 33(2): 114-8.
40. Krauss A, Schellenberg C. ADHD symptoms and health-related quality of life of adolescents and young adults. European journal of health psychology 2022. Available from: https://www. scienceopen.com/ document?vid=a05dd6c3-904e-44fb-9450-e131479ce813
41. Otsuki M, Ogawa S, Kojima M. Research trends in self-esteem among individuals with ADHD. Asian journal of human services 2025; 28: 378-93.
42. Miniskar DY, Özdemir M. Sleep quality in children and adolescents with attention-deficit and hyperactivity disorder. Archives de Pédiatrie 2021; 28(8): 668-76.
43. Lamberti M, Siracusano R, Guerriero L, Ciuffo M, Boncoddo M, Imbrigiotta N, et al. Multidimensional analysis of self-esteem in a group of children with ADHD. EuroMediterranean biomedical journal 2012; 2012: 88-92.
44. Lerdpaisanskul M, Boonchooduang N, Charnsil C, Louthrenoo O. Self-esteem in children with attention-deficit/hyperactivity disorder. Chiang Mai medical journal 2017; 56: 1-7.
45. Pedersen AB, Edvardsen BV, Messina SM, Volden MR, Weyandt LL, Lundervold AJ. Self-esteem in adults with ADHD using the Rosenberg Self-Esteem Scale: A systematic review. J Atten Disord 2024; 28(7): 1124-38.
46. Kurman J, Rothschild-Yakar L, Angel R, Katz M. How good am I? Implicit and explicit self-esteem as a function of perceived parenting styles among children with ADHD. J Atten Disord 2018; 22(13): 1207-17.
47. Kagitcibasi C. A model of family change in cultural context. Online readings in psychology and culture. 2002; 6(3): 1.
48. Fallahi F, Anoosheh M, Foroughan M, Vanaki Z, Kazemnejad A. Raising adolescent children as a developmental task of Iranian middle-aged mothers: A qualitative study. Int J Community Based Nurs Midwifery 2022; 10(2): 120-33.
49. Baumrind D. Differentiating between confrontive and coercive kinds of parental power-assertive disciplinary practices. Hum Dev 2012; 55(2): 35-51.
50. Amani M, Nazifi M, Sorkhabi N. Parenting styles and academic achievement of early adolescent girls in Iran: mediating roles of parent involvement and self-regulated learning. Eur J Psychol Educ 2019; 35(1): 49-72.
51. Sorkhabi N. Parent socialization effects in different cultures: Significance of directive parenting. Psychol Rep 2012; 110(3): 854-78.
52. Okubo K, Tang Y, Lee J, Endo T, Nozawa SJSR. Development of the Japanese Parenting Style Scale and examination of its validity and reliability. Sci Rep 2022; 12(1): 18099.