

RESEARCH ARTICLE

The Comparison of Anxiety, Social Skills and Social Acceptance in Children with ADHD, SLD and TD: Insights into Behavioral and Emotional Challenges

Ali Sharifi^{a1}, Zahra Badrypour^b, Marziyeh Rahimi^c, Saman Kamari Songhorabadi^d

^a Assistant Professor, Department of Psychology and Education of people with Special Needs, Faculty of Education and Psychology, University of Isfahan, Isfahan, Iran

^b PhD candidate, Department of Psychology and Education of people with Special Needs, Faculty of Education and Psychology, University of Isfahan, Isfahan, Iran

^c PhD candidate, Department of Psychology and Education of people with Special Needs, Faculty of Education and Psychology, University of Isfahan, Isfahan, Iran

^d Post-Doctoral Researcher in Cognitive Neuroscience at the Department of Psychology and Cognitive Science, University of Trento, Rovereto, Italy.

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ABSTRACT

This study employed a comparative cross-sectional quantitative design to compare anxiety levels, social skills, and social acceptance in school-aged children with attention deficit/hyperactivity disorder (ADHD), specific learning disorder (SLD), and typically developing (TD) children. A total of 83 participants (30 TD, 26 ADHD, and 27 SLD) were recruited from clinical and educational settings using purposive sampling, which should be considered when interpreting the findings. All three groups were evaluated using Spence's Child Anxiety Scale, Ford and Robin's Social Acceptance Scale, and Gresham and Elliott's Social Skills Grading Scale. Data were analyzed using MANOVA followed by post-hoc tests. Results indicated clear and systematic group differences across several domains. The TD group demonstrated significantly lower overall anxiety scores compared to both the ADHD and SLD groups, while children with SLD exhibited the highest levels of anxiety overall. In the Separation Anxiety subscale, children with ADHD scored significantly higher than both the TD and SLD groups, whereas no significant group differences were observed in the Fear of Physical Harm, Obsessive-Compulsive, or Panic-Agoraphobia subscales. Regarding social skills, both the TD and SLD groups outperformed the ADHD group in cooperation, assertiveness, self-control, and total social skills. Social acceptance scores were highest in the TD group, followed by the SLD group, with the ADHD group showing the lowest levels. In conclusion, children with ADHD and SLD exhibit distinct profiles of anxiety, social skills, and social acceptance compared to typically developing peers. These findings underscore the importance of targeted assessment and intervention strategies tailored to the specific psychosocial needs of each clinical group.

Introduction

Neurodevelopmental disorders are conditions that disrupt the normal development of the brain and central nervous system, leading to challenges in cognitive, emotional, and behavioral functioning across development (Morris-Rosendahl et al., 2020; Sadock, 2015). These disorders typically emerge early in the developmental period, often before school age, and are associated with developmental deficits across multiple domains (Sadock, 2015). Among neurodevelopmental disorders, Attention-Deficit/Hyperactivity Disorder (ADHD) is one of the most prevalent, characterized by inattention, hyperactivity, and impulsivity, alone or in combination (Graziano et al., 2016; Kasahara et al., 2023). ADHD is associated with persistent difficulties in attention regulation, behavioral control, and executive functioning, which can negatively impact academic performance, social adaptation, and personal functioning (Faraone et al., 2023; Song et al., 2021; Thorsteinsdottir et al., 2022). Children with inattention may struggle to maintain focus, fail to complete tasks, overlook details, and frequently misplace belongings (Song et al., 2021). Children with hyperactivity exhibit constant movement and impulsive behaviors, acting without thinking (Thorsteinsdottir et al., 2022). Additionally, impulsivity can lead to difficulties in turn-taking, inability to wait, and distracting others, which may negatively affect peer interactions and social relationships, often resulting in social rejection (Hoza et al., 2005; Lukito et al., 2020). Empirical evidence indicates that these core difficulties in ADHD are associated with adverse outcomes, including academic underachievement, interpersonal problems, and increased risk of maladaptive behaviors such as substance use and risky decision-making (Faraone et al., 2023). Difficulties in self-regulation and attentional control are strongly linked to peer relationship problems and social exclusion, highlighting the importance of examining ADHD-related cognitive and behavioral mechanisms in relation to study variables (Hoza et al., 2005; Lukito et al., 2020). Furthermore, ADHD is often comorbid with anxiety, with at least one diagnostic criterion for anxiety disorders present in over 25% of children with ADHD (Friesen et al., 2023). These overlapping challenges can contribute to higher levels of anxiety and poorer social skills, which in turn negatively affect social acceptance (Koyuncu et al., 2022).

¹ Corresponding author

E-mail address: A.sharifi@edu.ui.ac.ir



Another prevalent neurodevelopmental disorder is Specific Learning Disorder (SLD), characterized by persistent difficulties in core academic skills such as reading, writing, or mathematics, which are essential for learning (American Psychiatric Association, 2013; Maki et al., 2020). Similar to ADHD, SLD can affect not only academic performance but also social interactions and interpersonal relationships (Grigorenko et al., 2020). Children with SLD may face peer rejection, criticism from teachers, and frustration due to repeated academic failures, resulting in higher levels of anxiety and reduced social skills compared to typically developing (TD) peers (Cermak et al., 1998). Deficits in social skills, defined as learned behaviors that enable effective interpersonal relationships and avoidance of inappropriate social responses, represent a significant challenge for children with SLD (Milligan et al., 2016). Similarly, maladaptive behaviors in children with ADHD can increase opportunities for criticism, further hindering social skill development (Zolfaghari et al., 2023).

Previous studies have shown that both children with ADHD and those with SLD experience more social difficulties, lower social skills, and higher anxiety levels compared to TD children (Scholtens et al., 2012). For example, children with ADHD exhibit higher anxiety, which may manifest as impulsive behaviors and reduced academic performance (Narimani et al., 2015). Children with SLD face cognitive challenges—including memory, problem-solving, and reasoning difficulties—which can exacerbate social and emotional difficulties and increase anxiety (Alizadehfard et al., 2016; Sharifi et al., 2019). Difficulties in initiating and maintaining friendships, understanding social cues, and conflict resolution are also reported in children with ADHD, contributing to social isolation and anxiety (Aduen et al., 2018; Hinshaw, 2002). Meta-analytic evidence suggests that approximately 70% of students with SLD experience higher anxiety levels than TD peers, often due to maladaptive thinking and negative peer and teacher feedback (Nelson et al., 2011; Zhao et al., 2019). Furthermore, children with SLD exhibit higher rates of behavioral, emotional, and social problems, including social rejection, loneliness, low social acceptance, and poor interpersonal skills (Sideridis, 2007).

Despite previous research comparing ADHD and SLD with TD children separately, few studies have directly compared children with ADHD and children with SLD. Understanding the similarities and differences between these groups is essential for identifying group-specific challenges, particularly given the high comorbidity between ADHD and SLD, reported as high as 40% in some studies (El Wafa et al., 2020). Comparing both groups with TD children can also help identify strengths and weaknesses and inform tailored interventions. Therefore, the present study aims to examine and compare anxiety, social skills, and social acceptance in children with ADHD and SLD to provide a deeper understanding of their cognitive, emotional, and social challenges.

Method

Participants

This study involved 83 students who were selected through purposeful sampling. Participants were chosen based on specific traits pertinent to the research question, enabling a comparison among different groups. Purposeful sampling allowed for the exploration and comparison of Anxiety, Social Skills, and Social Acceptance in children with ADHD, SLD, and TD. Although purposeful sampling may come with limitations, such as potential bias and restricted generalizability, the study concentrated on analyzing the differences between groups rather than attempting to generalize to the larger population.

The study sample consisted of 83 children, including 26 students with SLD (mean age = 9.77, SD = 1.39), 27 students with ADHD (mean age = 9.69, SD = 1.43), and 30 TD children (mean age = 9.36, SD = 1.21). Groups were carefully matched for sex, age, residential area, and socio-economic status. All participants were native Persian speakers. To ensure the purity of the clinical groups and address comorbidity concerns, strict exclusion criteria were applied. Beyond the initial screening with the WISC-IV (ensuring all participants had a full-scale IQ above 85), a clinical interview based on DSM-5 criteria and a review of medical records were conducted to exclude children with comorbid neurological disorders, sensory impairments (visual or hearing), or other primary psychiatric conditions (e.g., Autism Spectrum Disorder, conduct disorder, or major depressive episodes). For the TD group, any history of developmental or psychiatric disorders served as an exclusion criterion. This rigorous screening was implemented to ensure that the observed differences in anxiety and social skills were primarily attributable to the core characteristics of ADHD and SLD. A summary of the demographic information for all three groups can be found in Table 1.

Measures

1) **Spence Children's Anxiety Scale-parent Version:** The Spence child Anxiety Scale was designed in 1998 to measure the anxiety symptoms of children aged 4 to 16 in Australia (Spence, 1999). This scale has two versions of the child (45 item) and the parent (38 item), which the parent version is used in this study. The parent version was specifically selected over the child self-report to ensure data reliability, as children with ADHD and SLD often exhibit limited self-awareness (metacognition) regarding their internalizing symptoms and may struggle with the sustained attention required for self-assessment. The scoring of this scale is based on the Likert spectrum of 4 degrees, so that the answers are scored from 0 (Never), 1 (sometimes), 2 (often) to 3 (Always), and the minimum score is equal to 0 and the maximum score is equal to 114. On this scale, a score of 44 and below indicates low anxiety levels, a score of 44 to 88 indicates moderate anxiety levels, and a score of 88 and above indicates high anxiety levels (Toscano et al., 2020). On this scale, there are 6 components, namely: separation anxiety (6 items), generalized anxiety disorder (6 items), social phobia (6 items), obsessive-compulsive disorder (6 items), panic-agoraphobia (9 items) and fear of personal and physical damage (5 items), (Ahlen et al., 2018). In general, the reliability of this scale for general anxiety is reported to be equal to 0.92 and the reliability of other components between 0.60 and 0.80 (Spence et al., 2003). The scale's psychometric properties in the Iranian context have been robustly validated; for instance, Mousavi et al. (2007) reported Cronbach's alpha coefficients ranging from 0.62 to 0.89 and confirmed a factor structure consistent with the original version, making it culturally appropriate for Persian-speaking populations.

2) **Social Skills Rating System of Gresham and Elliott-Parent Version:** The social skills rating system was developed by Gresham and Elliott in 1990 and has 3 special forms for parents, teachers and students, in which according to the comprehensiveness of parental information of their child's behavior, the parental version was used. Similar to the anxiety scale, the parent version was prioritized because parents observe the child's social interactions across diverse, non-academic settings, providing a more comprehensive behavioral profile than

teacher or child reports. this version consists of 55 components that also examine two factors, the first being measured is the social skills factor, which includes subscales such as responsibility, assertiveness, and cooperation, and the second is troublesome behaviors, which include subscales of internal and external behaviors, and hyperactivity (Gresham et al., 2011). Therefore, getting a high score in the social skills factor indicates that you have excellent social skills and getting a high score in the troublesome behaviors factor indicates more behavioral problems (Shahim, 2005). The Persian adaptation of this tool has demonstrated high reliability, with Shahim (2005) reporting a test-retest reliability of 0.70 and strong content validity for identifying social deficits in Iranian school-aged children.

3) Ford & Robin Questionnaire of Social Acceptance: The questionnaire was developed by Ford and Robin in 1970 with the aim of measuring the need for social approval in children and has 17 questions, which are set as a 3-choice Likert spectrum yes, partly and no. The scoring of this questionnaire is in the form of 0, 1 and 2, where the scores range from 0 to 34, so that if the scores obtained from the implementation of the questionnaire are between 0 and 11, the social acceptance of the child is considered low, if it is between 12 and 22, the social acceptance is at the moderate level, and if it is between 23 and 34, it indicates high acceptance. While originally developed in the West, this study utilized the Persian version validated by Akhouni et al. (2020). To ensure cultural equivalence, the scale underwent a formal forward-backward translation process and was reviewed by expert panels to ensure that the concept of "social approval" aligns with Iranian relational norms. The reported Cronbach's alpha of 0.77 in Iranian samples confirms its internal consistency for this study's demographic.

4) Conners' Parent Rating Scale (CPRS-R)-short version: The Conners rating scale is one of the most well-known scales of children's behavioral problems, developed by Keith Conners in 1960 to investigate the effect of stimulant drugs on children with ADHD (Conners, 1998). The parental form of this scale used in this study has 48 components that are also completed by parents. The scoring of this scale is based on the quadratic Likert spectrum, with scores ranging from 0 to 3 (Fumeaux et al., 2021). Components of this scale include problems such as behavior, learning difficulties, psychosis, hyperactivity/impulsivity, and anxiety/passivity. Finally, Goyette et al. (1978) cited the inner correlation of this scale between 0.41 and 0.57. In the Iranian context, Mehrzad et al., (2026) demonstrated excellent internal consistency for the Persian version of the Conners' Parent Rating Scale, reporting a Cronbach's alpha coefficient of 0.94 for the total scale and coefficients ranging from 0.70 to 0.94 across the subscales, supporting the reliability of the instrument in Iranian children.

Procedure

Participants in this study were students aged 8 to 15 years. Permissions for recruitment were obtained from the Department of Education of Tehran. Participants were selected using available sampling methods from schools in Districts 1, 3, and 7 of Tehran, and from clinics and government centers for learning disabilities (centers No. 1, 2, and 5).

The study included 30 TD students, 30 students with ADHD, and 30 students with SLD. ADHD diagnoses were made by a licensed psychiatrist and using the CPRS-R questionnaire, and SLD diagnoses were confirmed by an expert psychologist based on the DSM-5 criteria. Children who showed symptoms of both conditions, based on expert evaluations and the Conners parental version questionnaire, were excluded to ensure no participants had comorbid ADHD and SLD. Consequently, 4 participants from the ADHD group and 3 participants from the SLD group were excluded due to diagnoses of both ADHD and SLD. Only children with a normal IQ, assessed by the Wechsler Intelligence Scale for Children (WISC-IV), were included. Informed written consent was obtained from the parents of all participants prior to the study. We explained the study's purpose, procedures, potential risks, and benefits. Participation was voluntary, with the option to withdraw at any time without penalty. Also, the study followed the ethical guidelines of the American Psychological Association (APA), ensuring confidentiality and anonymity through unique identification numbers for each participant. To assess anxiety, social acceptance, and social skills, we administered the Spence Children's Anxiety Scale-parent version, the Ford & Robin questionnaire of social acceptance, and the Social Skills Rating System of Gresham and Elliott-parent version. Data were analyzed using SPSS-20 software and multivariate variance analysis.

Results

Table 1.

Demographic Characteristics of the TD, ADHD, and SLD Groups

	TD (n=30) M(SD)	ADHD (n=26) M(SD)	SLD (n=27) M(SD)	F/ χ^2	p value (group wise)	Pairwise Comparison
Age (year)	9.36(1.21)	9.69(1.43)	9.77(1.39)	0.74	0.68	TD=SLD=ADHD
Sex (girl)	43.33%	46.15%	40.74%	0.15	0.92	TD=SLD=ADHD

Note: M= Mean, SD= standard deviation

As shown in Table 1, there is no significant difference between the three groups in terms of average age ($p > 0.001$). Also, the chi-square test showed that there is no significant difference between the groups in the number of girls and boys ($p > 0.05$).

According to the results presented in Table 2, significant differences were observed among the three groups (TD, ADHD, and SLD) in several anxiety, social skills, and social acceptance subscales. Due to differences in group means, univariate and multivariate analyses of variance were conducted, followed by post-hoc comparisons. Prior to analysis, all assumptions for variance analysis were examined and confirmed.

Regarding anxiety, significant group differences were found in Separation Anxiety, Generalized Anxiety, Social Anxiety, Fear of Physical Damage, and Total Anxiety ($p < 0.05$). In Generalized Anxiety, Social Anxiety, and Total Anxiety, the TD group obtained significantly lower scores than the ADHD group, indicating lower anxiety levels. The SLD group showed significantly higher anxiety scores than both the TD and ADHD groups in these subscales. In Separation Anxiety, the ADHD group demonstrated significantly higher scores than the SLD group,

while the SLD group scored significantly higher than the TD group. In the Fear of Physical Damage subscale, no significant difference was found between the TD and SLD groups; however, the ADHD group showed significantly lower anxiety scores compared to both groups. No significant differences were observed among the three groups in the Obsessive–Compulsive and Panic–Agoraphobia subscales ($p > 0.05$), indicating comparable levels of anxiety across groups in these domains.

Table 2.
Comparisons of Anxiety, Social Skills, and Acceptance Among the TD, ADHD, and SLD Groups

		Groups			F statistics	p value	Pairwise Comparison (post Hoc)
Scale		TD (n=30) M(SD)	ADHD (n=26) M(SD)	SLD (n=27) M(SD)			
Anxiety	Separation anxiety	3.30(1.41)	8.19(2.84)	6.40(1.21)	46.32	0.00	ADHD>SLD>TD
	Generalized anxiety	3.50(1.52)	6.65(2.84)	10.37(2.98)	59.19	0.00	SLD>ADHD>TD
	Social anxiety	3.60(2.15)	8.57(2.13)	11.25(3.71)	56.91	0.00	SLD>ADHD>TD
	Obsessive-compulsive	2.63(1.03)	3.57(2.00)	3.44(2.18)	2.33	0.10*	ADHD=SLD=TD
	Panic-Agoraphobia	2.53(1.16)	3.07(1.74)	2.88(1.55)	0.96	0.38*	ADHD=SLD=TD
	Fear of physical damage	3.70(1.05)	2.26(1.04)	3.92(1.07)	19.24	0.00	ADHD<TD=SLD
	Total anxiety	20.43(4.08)	30.96(5.03)	39.18(22.43)	14.20	0.00	SLD>ADHD>TD
Social skills	Cooperation	15.30(2.94)	10.65(3.28)	13.03(3.92)	13.03	0.00	ADHD<TD=SLD
	Assertiveness	12.76(3.09)	17.34(3.80)	12.66(3.55)	15.81	0.00	ADHD<TD=SLD
	Responsibility	14.33(4.55)	11.53(4.37)	13.55(2.91)	3.94	0.30*	ADHD=SLD=TD
	Self-Control	15.36(3.18)	9.07(3.35)	12.51(3.38)	25.17	0.00	ADHD<TD=SLD
	Total Social skills	58.40(8.14)	48.07(6.80)	52.74(8.41)	12.16	0.00	ADHD<TD=SLD
Acceptance	Social acceptance	26.26(7.64)	11.30(4.53)	15.48(4.30)	50.37	0.00	TD>SLD>ADHD

Note: ADHD: Attention deficit and hyperactivity disorder; TD: Typical development. SD: standard deviation, *: nonsignificant difference between groups.

Concerning social skills, significant group differences were found in the Cooperation, Assertiveness, Self-Control, and Total Social Skills scores ($p < 0.05$). In these subscales, the TD and SLD groups did not differ significantly from each other ($p > 0.05$), but both groups obtained significantly higher scores than the ADHD group, indicating lower social skills in the ADHD group.

In contrast, no significant difference was observed among the three groups in the Responsibility subscale ($p > 0.05$). With respect to social acceptance, a significant difference was found between all three groups ($p < 0.05$). The TD group obtained significantly higher social acceptance scores than both the SLD and ADHD groups, and the SLD group showed significantly higher scores than the ADHD group.

Overall, these findings indicate that while significant group differences were present in several domains, certain anxiety and social skills subscales did not differ significantly across groups. A summary of the main findings is illustrated in Figure 1.

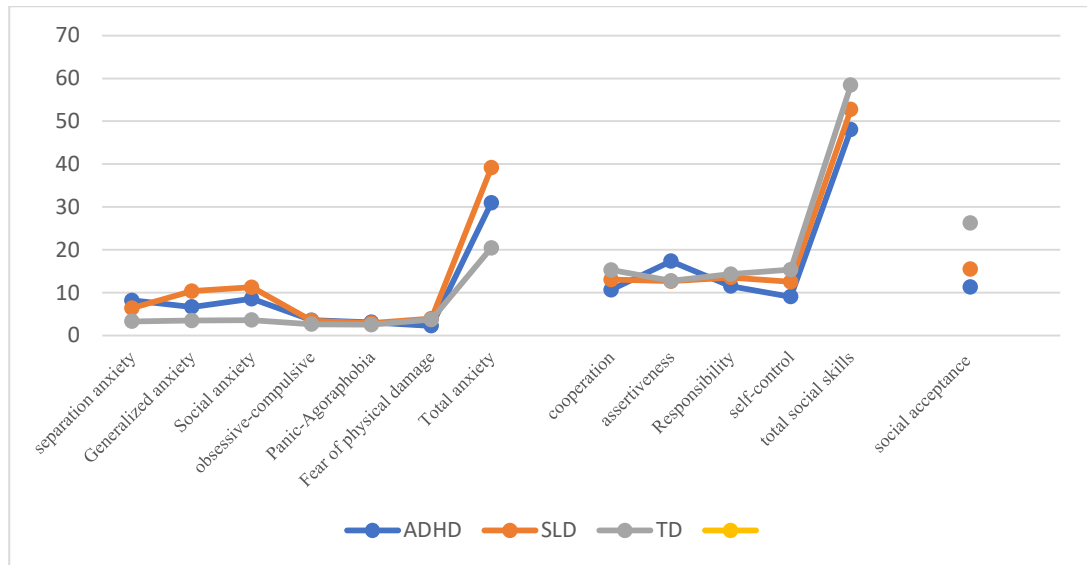


Figure 1.
Comparison of Anxiety, Social Skills, and Social Acceptance Among the TD, ADHD, and SLD Groups

Conclusion

The aim of this study was to compare anxiety levels, social skills, and social acceptance among children with ADHD and SLD and TD children, as well as between the two clinical groups. Overall, the results of the analysis of variance (ANOVA) indicated that anxiety scores differed significantly across groups, with TD children exhibiting lower anxiety levels than children with ADHD and SLD. These results are consistent with the findings of Brunstein-Klomek et al., 2017; D'agati et al., 2019; Figueiredo et al., 2020; Haft et al., 2019; Jarrett et al., 2008; Panicker et al., 2016; Vasiliki et al., 2021 and Visser et al., 2020.

These findings can be explained by the fact that children with these disorders are more likely to experience lower academic performance than TD children, as well as reduced social skills and diminished ability to regulate emotions and adapt to their environment. Consequently, the combination of these factors may increase the likelihood of anxiety in these children (Biederman et al., 1998). In addition, children with these disorders are more likely to be ridiculed by peers, which can further contribute to the development and exacerbation of anxiety. In other words, these children may worry about being perceived as “stupid,” “lazy,” or “careless” due to their lower academic performance (Haft et al., 2019).

The results of the statistical analysis indicated that, on the obsessive-compulsive and panic-agoraphobia subscales, children in all three groups did not differ significantly, regardless of the overall anxiety score. This finding is consistent with the DSM-5, which notes that the typical age of onset for obsessive-compulsive disorder and panic-agoraphobia is in late adolescence or early adulthood. Therefore, the absence of significant differences among the groups is logical and understandable, given that the present study was conducted with a sample of children. Also, children with ADHD often seek increased stimulation through various activities due to reduced arousal in certain brain regions (Bellato et al., 2020; Spaeth, 2022). At the same time, these children tend to have difficulties predicting the consequences of their actions because of impairments in working memory and time perception (Mioni et al. 2017). This combination contributes to impulsive behaviors, which can increase the risk of negative outcomes, including physical injuries (Barkley, 2006). Therefore, the significant difference observed on the fear of physical damage subscale in children with ADHD compared to TD and SLD children may be explained by the factors discussed above. In addition, children with ADHD and SLD differed significantly in overall anxiety, with children with ADHD exhibiting higher anxiety levels than those with SLD. This finding is consistent with previous studies (Brunstein-Klomek et al., 2017; Operto et al., 2021).

Given that children with ADHD show greater difficulties than children with SLD in cognitive inhibition, cognitive flexibility, verbal memory, working memory, and overall mental functioning (Faedda et al., 2019), they are also more likely to experience problems in social relationships (Kouvava et al., 2022) and academic performance (Arnold et al. 2020). These challenges can, in turn, contribute to higher levels of anxiety in this population.

In general, these findings suggest that children with ADHD and SLD are more likely to experience anxiety than TD children, largely due to difficulties in social and academic functioning. Moreover, because children with ADHD exhibit greater cognitive impairments than children with SLD, and their disorder affects broader aspects of daily life, they tend to experience even higher levels of anxiety. The results of the analysis also indicated that TD children differed significantly from children with ADHD and SLD in social skills, with TD children demonstrating higher social competence and social skills. These results are consistent with previous studies (Al-Yagon et al., 2004; Biele et al., 2022; Commodari et al., 2022; De Boer et al., 2016; Ferretti et al., 2019; Jones et al., 2023; Leffa et al., 2022; Ng et al., 2021). One explanation for these findings is that children with these disorders often have difficulties recognizing the emotions and feelings of others from facial expressions, which can significantly impact their social abilities. In addition, children with ADHD exhibit social deficits such as

interrupting others and speaking at inappropriate times, which can lead to difficulties in forming and maintaining relationships and broader social functioning (Albayrak et al., 2022).

In addition, children with SLD often have difficulties understanding and interpreting events in different social contexts, which may negatively affect their social skills (Şahin et al., 2018). Furthermore, the results indicated that children with ADHD scored lower on the responsibility subscale compared to TD children. This finding is consistent with the executive function deficits observed in ADHD (Sharifi & Asanjarani, 2023), which can lead to difficulties in self-regulation, planning, and executing a sequence of related activities to achieve a goal (Barkley et al., 1997). As a result, children with ADHD are less likely to complete assigned responsibilities appropriately. Furthermore, statistical analyses indicated that children with ADHD scored higher on the assertiveness subscale compared to TD children and children with SLD, showing significant differences from the other two groups. This finding aligns with previous observations that children with ADHD seek increased stimulation through various activities due to reduced arousal, which may contribute to higher assertiveness levels. Overall, the analysis also showed that, in general, children with ADHD did not differ significantly from children with SLD in total social skills. These results are consistent with previous studies (Albayrak et al. 2022; Şahin, 2018).

It appears that, because children with ADHD and SLD share common deficits in certain skills (Albayrak et al., 2022), there is no significant difference between their social skills. However, this finding contradicts previous studies by (Kouvava et al., 2022; Operto et al., 2021). One possible explanation for this discrepancy is that the present study had a limited sample size, with participants recruited only from specific areas of Tehran city. In addition, the existing literature presents mixed results, with some findings supporting this hypothesis and others contradicting it. Therefore, to obtain more accurate and generalizable results, future studies should include larger and more diverse samples, particularly in terms of socio-economic background. Statistical analyses also indicated that children with ADHD and SLD were less socially accepted than TD children, which is consistent with previous findings (Haager et al. 1995; Scholtens et al. 2012).

These findings may be explained by the fact that hyperactivity, intrusive behaviors, and norm-incongruent actions, as well as other negative behaviors commonly observed in children with ADHD, can lead to unfavorable perceptions by others and negatively affect their social acceptance (Scholtense et al., 2012). In addition, deficits in social skills among children with SLD may also contribute to lower levels of social acceptance (Bonuomo et al., 2023). Furthermore, the statistical analyses indicated that children with ADHD were less socially accepted than children with SLD. This difference may be explained by the broader scope of impairments associated with ADHD. According to the DSM-5, SLD primarily involves difficulties in academic domains such as reading, writing, and mathematics, whereas a diagnosis of ADHD requires the presence of symptoms in at least two settings. Consequently, the more pervasive nature of ADHD-related difficulties may result in lower overall social acceptance compared to SLD.

Limitation and future study

A significant limitation of this study is the relatively small sample size ($N = 83$). Although sufficient for detecting large effect sizes in a three-group design, a post-hoc power analysis indicates that the study was underpowered to identify subtle or moderate differences between the two clinical groups (ADHD vs. SLD) across all subscales. This restricted power increases the risk of Type II errors, potentially masking significant nuances in the social and emotional profiles of these populations. Furthermore, the reliance on convenience sampling from specific geographic areas in Tehran limits the external validity and generalizability of the results to broader socio-economic or cultural contexts.

Future research should utilize a larger, more representative sample, determined by a-priori power analysis, to ensure robust findings. Additionally, longitudinal studies are recommended to track the developmental trajectories of anxiety and social competence from childhood through late adolescence, providing a clearer understanding of how these challenges evolve over time.

Practical Implications

These findings underscore the need for targeted, evidence-based interventions. Given the link between cognitive deficits and anxiety, clinicians should integrate Cognitive Behavioral Therapy (CBT) adapted for executive dysfunction to help children with ADHD manage social anxiety and emotional volatility. Furthermore, school-based programs should move beyond general support and implement specific social-perceptual training to help children with SLD and ADHD better interpret social cues and facial expressions. Educational policymakers should prioritize integrated support systems that address both the academic and emotional needs of these clinical populations to mitigate the long-term impact of social exclusion.

Conflict of Interest Statement

The authors confirm that there are no conflicts of interest.

Ethics Statement

Written informed consent was obtained from the parents or guardians of all participants. All procedures involving human participants were conducted in accordance with the ethical standards of the institutional and/or national research committee and the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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