



## **EXAMINING PARENTAL RISK FACTORS FOR ENHANCEMENT OF AUTISTIC TRAITS IN CHILDREN DIAGNOSED WITH ADHD DISORDER**

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### **Abstract**

**Background:** Among the most common neurodevelopmental diseases are Media exposure Impulsive behavior Condition (ADHD) and Autism Spectrum Disorder (ASD) (ADHD). Autism signs are typically seen in individuals with ADHD. The prevalence of autism diagnoses in ADHD-affected children and familial factors associated that encourage the development of autistic traits in offspring were both examined in this study.

**Methods:** Two groups were formed since there were 33 children without the diagnosis of ADHD and 66 children with the condition, as well as their parents. The Autism Spectral Questionnaire (ASQ) and the Autism Behavioral Criterion (ABC) (AQ) were used, respectively, to screen for autism symptoms in children and parents.

**Results:** There were no important differences in the ABC sensorial, allied, body and object use, or verbal subdimensions between media exposure dominant, associated, and combined forms of ADHD ( $p > 0.05$ ). Only slightly better than hyperactivity disorder with attention deficit and restlessness was the ABC social and emotional sdq score in dominant types in the paired with ADHD category ( $p = 0.02$ ).

**Conclusion:** In conclusion, the ABC scale was used to screen kids for autistic traits. The ABC subscale and overall scores more inside this bunch of people with ADHD. Mens as in ADHD group have higher overall ABC values than females ( $p = 0.027$ ), it was discovered. Adversarial deficiencies disorders (ODD) was determined to be correlated with worse ABC scores ( $p = 0.001$ ), it was found that autistic features are more extreme in adolescents experiencing ADHD.

**Keywords:** *ADHD, Autism, Autistic traits, Children*



## Introduction

ASD and ADHD are the two neurodevelopmental conditions that affect kids most commonly. While ADHD affects 7% of people, ASD affects 1% of people. At school, at home, and elsewhere, both disorders cause issues with behavior, cognition, emotion, and adaptation. These include problems paying attention, interacting with peers, acting impulsively, and being overly active. Both illnesses afflict more boys than girls (Musser ED et al., 2014). ODD has a connection with ASD of 30-65% and ADHD of 22-83%. According to DJ Van Steijn (2012) and colleagues ODD is a typical ADHD symptom. ODD can start in puberty but typically appears before the age of eight. Children who have ODD are more prone to act inappropriately among caregivers or family members.

ASD and ADHD were first evaluated separately since the DSM-IV-TR diagnostic criteria did not permit the diagnosis of ASD and ADHD in the same patient. Recent research has shown that autism and ADHD share clinical, genetic, and cognitive characteristics, and that autistic and ADHD symptoms frequently co-occur (Leither Y, 2014).

Significant hereditary changes are present in both ASD and ADHD. The underlying factors that link ADHD and ASD are frequently unknown. The findings of this topic's genetic research suggest that autism and ADHD co-occurrence may have an impact on the same genetic regions. Another twin study found that siblings of ADHD patients had significantly higher autistic symptoms and stereotyped movements than non-ADHD controls (Cooper M et al., 2014). The current study aims to look at the socio-demographic status and autism characteristics of kids with ADHD.

## Material &Methods

In the present study, autistic characteristics and symptoms of ADHD are assessed using the relevant measures in children, adolescents, and parents.

## Participants and Method of Data Collection

In this study, the control group included 33 kids (24 men and 9 girls, 6 to 15 years old) and their caregivers without an ADHD diagnosis. Harvard Pediatric and Adolescents Psychiatric Program of the Chandigarh Psychiatry Department in New Delhi saw 66 patients with ADHD in total—16 girls and 50 boys, ages 6 to 15—and their parents. The researcher conducted in-depth psychological interviews with each subject. A youngster has an increased likelihood of having autism if their overall ABC score is 68 or above. The average Intelligence Quotient (IQ) score of research



participants was 80 or above. Significant medical, neurological, and genetic disorders were determined to be disqualifying factors.

A sociodemographic survey was completed by each participant. This questionnaire includes information on the participants' ages, genders, educational levels, employment, family structure, prenatal, natal, and postnatal development histories, as well as the status of any psychiatric diagnoses and treatments.

#### **ADHD/ASD behavior checklist ( ABC )**

There are 57 items in total across the five subscales of this family report scale (sensorimotor, interpersonal, use of the limbs and objects, linguistic, and social abilities). It is employed to assess how severe the child's autism symptoms are. Utilizing participants aged 3 to 15, the measure's validity and reliability for Indians were assessed. The scale's lowest and highest possible scores, respectively, are 0 and 159. High scores on the scale imply that autistic symptoms are more common.

#### **Statistical analyses**

In the statistical techniques of the sample, the mode, confidence interval, midpoint, average, and ratio variables were used. The study was completed using the computer or server Statistical Package for social Scientists (SPSS) 22.0. The threshold for predictive value was set at p 0.05.

#### **Results &Discussion**

Socio-demographic information for all participants is shown in Table 1. Age, gender, level of education, psychiatric diagnosis, and state of therapy were all examined. A grading scale with five sub - dimensions (esthetic, associated, body or product use, linguistic, and communal) and 57 complete variables abilities) is shown in Table 2. It is employed to gauge the severity of autism symptoms in young people.

**Table 1: Comparison of socio-demographic characteristics, pregnancy and birth history of ADHD group and control group**

	ADHD Group (n=66)		Control Group (n=33)		P-value
	Number	Percentage	Number	Percentage	
<b>Gender</b>					0.744
Girl	16	24.2%	9	27.3%	
Boy	50	75.8%	24	72.7%	
<b>Child Education Level</b>					0.653
Primary School	34	51.5%	16	48.5%	



Secondary School	25	37.9%	15	45.5%	
High School	7	10.6%	2	6.0%	
<b>Mother Education Level</b>					0.021*
Primary School	18	27.3%	5	15.2%	
Secondary School	9	13.6%	2	6.0%	
High School	22	33.3%	7	21.2 %	
University	17	25.8%	19	57.6%	
<b>Father Education Level</b>					0.001*
Primary School	14	21.2%	3	9.1%	
Secondary School	8	12.1%	4	12.1 %	
High School	26	39.4%	4	12.1%	
University	18	27.3%	22	66.7%	
<b>Problem in Pregnancy</b>					0.428
No	57	86.4%	31	93.9%	
Yes	9	13.6%	2	6.1%	
<b>Birth Type</b>					0.196
Normal	25	37.9%	17	51.5%	
C-Section	41	62.1%	16	48.5%	
<b>Low Birth Weight</b>					0.579
No	64	97.0%	31	93.9%	
Yes	2	3.0%	2	6.1%	

\*p < 0.05

**Table 2 Distribution of ABC subscale and total scores of cases**

	ADHD group (n=66)		Control Group (n=33)		P value (<0.05)
	Mean ± SD	Median	Mean ± SD	Median	
Sensory	2.7 ± 3.5	1.5	0.8 ± 1.9	0.0	0.001
Relating	8.5 ± 6.5	7.5	1.3 ± 2.7	0.0	0.001
Body and Object Use	5.2 ± 5.7	3.0	0.9 ± 2.4	0.0	0.001
Language	4.5 ± 4.1	3.5	0.7 ± 2.4	0.0	0.001
Social Skills	6.3 ± 4.4	6.0	1.0 ± 3.1	0.0	0.001
ODD	7.3 ± 4.9	6.5	0.77± 1.1	0.0	0.001
Total Score	34.4 ± 22.7	31.0	5.54 ± 10.9	0.0	0.001



The ABC scores Both the entire and questionnaire results of the ADHD category and the cohort were discovered to be significantly greater than those of the healthy controls. In Panel 2, this appears. the ADHD cluster of boys performed significantly better than girls overall on the ABC scale ( $p = 0.027$ ). ODD, a condition that co-occurs with ADHD, was found to be associated with higher ABC scores ( $p = 0.001$ ). The ABC sensory, related, body and object usage, or language subscale scores did not significantly differ between the attention-deficit/hyperactivity/impulsivity dominant, related, body and object usage, and combination types of ADHD ( $p > 0.05$ ). The ABC social skills subscale only substantially outperformed the attention deficit predominant and hyperactivity/impulsivity dominant types in the combined ADHD category ( $p = 0.02$ ).

In this study, children were evaluated for autism symptoms using the ABC rating scale. The ADHD group had higher scores on the ABC subscale and overall. Boys scored higher overall on the ABC scale than girls did in the ADHD group, it was discovered. Children with ADHD display more autistic signs than children without the illness, according to this study. This outcome is consistent with past research on the signs of autism in children with ADHD (Sokolova E et al.,2017). The ABC overall score and the ADHD subgroups did not correlate in this study. The ABC social skills subscale scored substantially higher than the attention-deficit predominant and hyperactivity/impulsivity dominant categories only in the combined ADHD cohort. When the body of research was examined, it was found that the combined-type ADHD had a higher prevalence of autistic symptoms; however, other investigations carried out by (ED Musser et al. 2014) showed that there were no significant variations in autism symptoms between ADHD subgroups. The prevalence of autism symptoms is higher in children with ODD and ADHD (Leither Y, 2014). The ABC total scores of participants in this study with ADHD and ODD were higher than those with ADHD. ODD exacerbated autistic characteristics. Social difficulties are common in kids with ADHD or ODD. According to Sokolova E et al., (2017) children with ADHD and concomitant ODD, Social Communication Disorder, language, and motor impairments demonstrated higher levels of autistic symptoms. Some contradictory behaviors are linked to ASD and others to ADHD because of aversion to change.

## Conclusion

In comparison to non-ADHD controls, the study indicated that children with ADHD exhibited higher autistic traits. Autism was checked for in kids by ABC. ABC scores for ADHD were higher overall.



In terms of ADHD, boys scored better on ABC than girls. According to this study, youngsters with ADHD exhibit more autism symptoms. ODD was also associated with higher ABC scores. A treatment plan can be created by identifying social and communication problems and the relationship between ADHD and autistic features.

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