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ADHD SYMPTOMS AS RISK FACTORS FOR ACADEMIC IMPAIRMENT. A TRANSYLVANIAN TEACHERS' PERSPECTIVE



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Table 1. Results of post hoc analysis showing differences between ADHD categories in academic functioning

ADHD Interval	MD	SE	p	95% Confidence Interval		
				Lower Bound	Upper Bound	
Normal (n=28)	Subthreshold	.631	.379	.102	-.13	1.39
	Clinical	.574*	.245	.022	.08	1.06
Subthreshold (n=7)	Normal	-.631	.379	.102	-1.39	.13
	Clinical	-.057	.382	.882	-.82	.71
Clinical (n=26)	Normal	-.574*	.245	.022	-1.06	-.08
	Subthreshold	.057	.382	.882	-.71	.82

*the mean difference is significant at the 0.05 level

Introduction

Aims

- the examination of Transylvanian teachers' perception of elementary school children
- the prevalence of behavioral, emotional difficulties, especially ADHD symptoms
- their impact on academic functioning

Background

- Attention Deficit Hyperactivity Disorder (ADHD) has become one of the most common psychological disorders among children.
- The APA[1] indicates that 7% of school-aged children have ADHD. Core symptoms of children diagnosed with ADHD are inattention and/or hyperactivity. ADHD symptoms can be considered a risk factor for academic impairments [2].
- Additionally, children with ADHD exhibit high rates of functional impairments [6]: externalizing problems, aggression, antisocial behavior as well as internalizing problems that include anxiety and emotional regulation problems.
- Overall, children with ADHD show high rates of disruptive behavior [4, 9], ranging from 30-50% of comorbidities such as oppositional defiant disorder (ODD) and conduct disorder (CD).

Research

Participants

- children (Grade 1-4) without a formal diagnosis of ADHD, N=70
- ages between 7-12 years (M=9.42, SD=1.25)
- 65,7% male (N=46) and 34,3% female (N=24)

Instruments

• Behavioral and emotional functioning: the Child Behavior Checklist version for teachers: **Teacher's Report Form – TRF** [10] for ages 6-18 (longer version, 113-item Likert-scale)

• **Academic functioning** in 3 subjects: Hungarian and Romanian language and Mathematics was reported by the teachers.

• Cognitive functioning (IQ): The **Raven's Standard Progressive Matrices (SPM)** [11]

Results

One-way ANOVA: show significant differences between ADHD categories (normal, subthreshold, clinical interval): $F(2,58)=3,24$, $p=.046$

Post hoc analysis (LSD): significant differences between children included in the normal and clinical interval based on scores reported by teachers (see Table 1). Children included in the clinical interval, exhibiting severe ADHD symptoms in school settings, had lower academic performance, compared to typically developing children (normal interval).

Linear regression analysis: was used to identify predictor variables of academic functioning. The model including the following variables: emotional problems (affective, anxiety and somatic problems), behavioral problems (inattention, hyperactivity/impulsivity, ODD, CD) and IQ, explained a significant proportion of variance in academic functioning scores, $R^2 = .718$, $F(8, 41) = 13.077$, $p < .001$.

Thus, these variables explain 72% of the variance of academic performance. Inattention and somatic problems significantly predicted academic functioning, $b = -.72$, $t(62) = -5.88$, $p < .001$ for inattention, respectively $b = -.27$, $t(62) = -3.09$, $p < .001$ for somatic problems.

Children showing symptoms of inattention and having somatic problems are prone to lower academic performance.

Conclusion

- Findings are consistent with previous studies [2, 3, 4, 5], participants exhibiting ADHD symptoms (children included in the clinical interval), especially symptoms of inattention, compared to typically developing children (children included in the normal interval), had lower academic functioning.
- Moreover, there is a strong association between academic achievement and secondary problems associated with ADHD symptoms such as behavioral (e.g., externalizing or internalizing difficulties) problems.
- Symptoms of inattention and somatic problems significantly predicted lower academic performance.
- Consequently, children exhibiting ADHD symptoms, especially inattention, can be considered population at risk for academic impairment [6, 9].

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