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BRIEF REPORT

Self-reported attachment styles in children with and without attention-deficit/hyperactivity disorder (ADHD)

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Introduction

Attention-deficit/hyperactivity disorder (ADHD) is considered a neurodevelopmental disorder with a complex etiology: multiple genes and non-genetic factors contribute to its development. The frequently co-occurring externalizing behaviors [i.e., symptoms of oppositional defiant disorder (ODD) and conduct disorder (CD)] are associated with problematic family functioning and conflicted parent–child relationships [3]. In the general population, externalizing behaviors appear to be related to insecure attachment and lack of trust in caregiver support (meta-analysis; [6]). Some studies in ADHD populations have shown that children with ADHD are more likely to be insecurely attached [5]. However, less is known whether attachment links more to comorbid ODD and CD symptoms or to the core symptoms of ADHD.

A recent review suggests an association between ADHD and insecure attachment competencies in children [11]. Nonetheless, the studies in this review only examined broad dimensions of attachment (e.g., secure versus insecure attachment) and/or used observation procedures that can be confounded by overlap of attachment with ADHD pathology [8]. In addition, because of the different methods used to assess attachment, one has to be careful in making comparisons between different constructs (e.g., attachment style and attachment representations).

Research shows that insecurely attached children differ in the extent to which they are more preoccupied with the availability of attachment figures' support (anxious attachment) or more resistant against relying on attachment figures' support (avoidant attachment). These attachment classifications reflect different vulnerabilities and are, therefore, often linked to different types of psychopathology [6].

To our knowledge, this is the first study that assesses explicit expectations about avoidant and anxious attachment and trust to both mother and father with well-validated self-report questionnaires in children (8–12 years) with ADHD, as compared to typically developing (TD) children. In addition, associations between ADHD, ODD, and CD symptoms, and attachment in both groups will be examined.

Methods

Participants were 45 children with a diagnosis of ADHD, as validated with the module Disruptive Behavior Disorders of the Diagnostic Interview Schedule for Children (DISC-IV; [10]), and 57 TD children (scoring in the normal range of the inattention, hyperactivity–impulsivity, ODD and CD scales of the parent-rated Dutch version of the Disruptive Behavior Disorder Rating Scale (DBDRS; [7]). All participants had an IQ above 80 (as assessed with the Wechsler Intelligence Scale for Children-III), and were 8–12 years (see Table 1 for demographic characteristics). At the time of assessment, those participants with ADHD on medication (53%) were on a stable dose and none of them received psychosocial treatment.

The DBDRS [7] was used to assess ADHD, ODD, and CD symptoms. Children completed the short form of the Experiences in Close Relationships Scale-Revised Child version (ECR-RC; [2]), a questionnaire measuring attachment

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Table 1 Mann–Whitney *U* tests and Chi square tests for demographic characteristics, trust, and anxious and avoidant attachment

	ADHD ($n=45$)	TD ($n=57$)			
			X^2	p	
Sex (male)	62%	47%	2.23	0.14*	
ADHD–inattentive type	37.8%				
ADHD–hyperactive–impulsive type	13.3%				
ADHD–combined type	48.9%				
Comorbid ODD–diagnosis	40%				
			U	*p*	
Age in years *M* (*SD*)	10.77 (1.12)	10.05 (1.20)	883.00	0.01*	
Total IQ *M* (SD)	98.11 (11.78)	103.32 (12.01)	913.00	0.02*	
Inattentive symptoms *M* (SD)	18.05 (4.78)	3.33 (3.26)	24.50	0.00**	
Hyperactivity/impulsivity symptoms *M* (SD)	14.40 (5.38)	3.11 (2.99)	79.50	0.00**	
ODD symptoms *M* (SD)	7.23 (4.59)	2.26 (2.85)	409.50	0.00**	
CD symptoms *M* (SD)	1.16 (1.29)	0.50 (1.21)	822.50	0.00**	*q*
Trust in support father *M* (SD)	33.77 (5.58)	34.8 (4.16)	1006.00	0.59	0.96
Trust in support mother *M* (SD)	35.05 (4.05)	34.82 (4.18)	1167.00	0.91	0.96
Anxious attachment father *M* (SD)	10.84 (6.52)	10.86 (7.80)	1057.50	0.75	0.96
Anxious attachment mother *M* (SD)	10.02 (5.35)	11.00 (7.45)	1218.50	0.96	0.96
Avoidant attachment father *M* (SD)	20.74 (8.48)	19.25 (7.36)	957.50	0.29	0.96
Avoidant attachment mother *M* (SD)	16.79 (7.35)	16.71 (6.18)	1170.00	0.81	0.96

*$p<0.05$, **$p<0.01$ there were no significant differences between children with ADHD that currently took medication and those that did not take medication on the dependent variables (data available from first author)

anxiety and avoidance. The alpha coefficient for the ECR-RC [2] in this study was 0.80 for mothers, and 0.82 for fathers. In addition, to examine the child's trust in the availability of the caregiver's support, we administered the Trust scale of the People in My Life Questionnaire (PIML; [9]), designed to assess children's internal representations of relationships with their attachment figures. The alpha coefficient of the Trust scale in the present sample was 0.80 for mothers, and 0.85 for fathers. To compare the ADHD group with the TD group, Mann–Whitney *U* tests and Chi square tests were conducted on demographic variables, trust, and anxious and avoidant attachment. *p* values were corrected with the Benjamini–Hochberg procedure [1]. Spearman correlations assessed the association between attachment and trust, and ADHD, ODD, and CD symptoms.

Results

There were no significant differences between the two groups on demographic variables, except for IQ and age (Table 1). Covariate analysis with IQ and age showed no different results. There were no significant differences between the ADHD group and the TD group on attachment or trust to parents (Table 1). In addition, in the ADHD group no significant correlations between ADHD, ODD, and CD symptoms, avoidant and anxious attachment, and trust were found (Table 2). However, in the TD group, there were significant moderate-to-large correlations between ODD symptoms and anxious and avoidant attachment and also between CD symptoms and anxious and avoidant attachment.

Discussion

Our results indicate that children with ADHD do not differ from TD children in self-reported trust in their parents and insecure attachment styles (i.e., anxious and avoidant attachment), suggesting that a substantial group of children with ADHD can develop the experience of having a secure attachment relationship and trust in their parents. However, as we cannot estimate the extent to which our results were affected by children's positive illusory and social desirability bias [12], replication of our findings with multi-method assessment (both observation and self-report measures) of attachment is needed. Nevertheless, there is some evidence that self-reported attachment links to observable attachment behavior [4]. In addition, the clinical importance of self-reported attachment, especially in this age group, has been abundantly shown [6], supporting the relevance of our findings. Our results contradict with Storebø et al. [11] showing that children with ADHD are more likely to be insecurely attached. The associations reported in these studies were predominantly between ADHD symptoms and disorganized

Table 2 Spearman correlations between inattention, hyperactivity–impulsivity, ODD symptoms, and CD symptoms in children with ADHD and TD children

	Trust in support father	Trust in support mother	Anxious attachment father	Anxious attachment mother	Avoidant attachment father	Avoidant attachment mother
Inattention						
ADHD	0.073	0.066	−0.011	0.044	−0.016	−0.071
TD	0.026	0.078	0.088	0.207	−0.017	−0.031
Hyperactivity–impulsivity						
ADHD	−0.091	0.068	0.274	0.194	−0.034	0.095
TD	−0.052	−0.004	0.163	0.196	−0.020	−0.026
ODD symptoms						
ADHD	−0.101	−0.098	0.170	0.130	0.058	0.047
TD	−0.217	−0.114	0.357*	0.362**	0.399**	0.464**
CD symptoms						
ADHD	−0.083	−0.135	0.064	0.217	0.242	0.155
TD	−0.239	−0.211	0.285*	0.472**	0.351*	0.424**

*$p < 0.05$, **$p < 0.01$

attachment. Moreover, children in some of the studies had been assessed with observation measures and findings could thus possibly be confounded by overlap of characteristics of disorganized attachment and ADHD symptoms.

In the TD group, and not in the ADHD group, the ODD and CD symptoms, and not the ADHD symptoms, were associated with both insecure attachment styles. This effect suggests that attachment might be an important factor especially linked to ODD and CD symptoms. Potentially, we did not find the same pattern of significant correlations in the ADHD group due to restriction of range in ODD and CD symptoms or heterogeneity in ADHD. In addition, most items of the short version of the ECR-RC [2] are designed to measure high levels of insecure attachment, only few items map a lack of anxious or avoidant attachment. Therefore, it is possible that we found less children with a secure attachment style. However, we also used the PIML [8] to account for the possibility of only measuring the low ends of insecure attachment. Nonetheless, it is important to consider the fact that we assessed explicit expectations of children concerning attachment and trust in their parents. Taken together, more research with larger sample sizes is needed to further explore the relationship between attachment and ADHD. It is important to use multi-method approaches to account for the conceptual differences between attachment styles and attachment representations. In addition, a longitudinal design is needed to disentangle the role of attachment in the development of comorbid symptoms in ADHD.

Finally, the same pattern of significant associations in the TD group was found for both anxious and avoidant attachment to fathers and mothers. Thus, ODD and CD symptoms in a typically developing population might link to both attachment styles and both caregivers. Taken together, the current study suggests that children with ADHD report secure attachment relations and trust in their parents, and appear not to differ from typically developing children, at least when using self-report.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no competing interest.

Ethical approval The study was approved by the ethical committee of the KU Leuven and all procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 declaration of Helsinki and its later amendments or comparable ethical standards (Social and Societal Ethics Committee, Faculty Psychology and Educational Sciences, G-2015 01 156).

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