

# Examining the role of parental ADHD symptomatology on children's ADHD and emotion regulation

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## Introduction

Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder characterized by symptoms of inattention, hyperactivity and impulsivity. Symptoms of ADHD in early childhood are associated with poor long-term outcomes, including academic, social and emotional difficulties.<sup>1,2,3</sup> Some of these negative outcomes can be accounted for by the difficulties with emotion regulation that these children frequently experience.<sup>4,5</sup> Understanding factors associated with both early ADHD symptoms and emotion regulation abilities may be helpful in terms of informing resiliency-building interventions for these children.

Parents of children with ADHD often experience symptoms of ADHD themselves. There is some evidence to suggest that these symptoms may influence their children's functioning. For instance, adults who recall their parents as having had more ADHD symptoms when they were young also report experiencing more severe ADHD symptoms and emotion regulation difficulties themselves. The relationship between parental ADHD symptoms and children's ADHD symptomatology and emotion regulation abilities have yet to be explored in preschool-aged children.

The aim of the present study to examine the influence of parental ADHD symptomatology on children's early ADHD symptomatology and emotion regulation abilities.

## Methods

As part of a larger ongoing study, 51 parents of preschool-aged children participated in the present study. Parents (biological mothers  $n=44$ ; biological fathers  $n=2$ ; adoptive mother  $n=1$ ; grandmother  $n=1$ ) attended a testing session at the University of Ottawa with their child (ages  $M=3$  years, four months;  $SD=4$  months). Parents completed a self-report measure of adult ADHD symptomatology, the as well as parent-report measures of children's ADHD symptomatology and emotion regulation abilities.

## Measures

**The Adult ADHD Self-Report Scale (ASRS).**<sup>6</sup> Based on DSM-IV criteria, the ASRS is a 6-item self-report screening measure of ADHD symptomatology in adults. Endorsement of 4 or more symptoms occurring "very often" is considered clinically significant, and has been shown to be a highly reliable indicator of ADHD diagnosis.<sup>7</sup>

**The ADHD Rating Scale-IV Preschool Version (ADHDRS-IV)**<sup>8</sup> is an 18-item parent-report screener of ADHD symptoms in children ages 3-5 years old. Higher scores on this scale indicate more ADHD symptoms.

**The Emotion Regulation Checklist (ERC)**<sup>9</sup> is a widely used parent-report measure of children's emotion regulation abilities. Only the Emotion Regulation Subscale was used for the present analysis. Possible scores ranging from 8 to 32. Lower scores indicate poorer emotion regulation abilities.

## Analyses

Two sets of linear regression analyses were conducted in order to determine whether or not parental ADHD symptomatology predicts 1) children's ADHD symptomatology; and 2) children's emotion regulation abilities.

## Results

### Participants

The final sample was composed of 43 children (boys  $n = 20$ ; girls  $n = 23$ ). (Note: some participants were removed due to missing data).

	Boys	Girls
	<i>M (SD)</i>	<i>M (SD)</i>
Total ADHD Symptoms	15.93 (8.28)	15.87 (3.78)
Inattention	7.20 (3.66)	7.57 (1.65)
Hyperactivity	9.36 (6.10)	8.30 (2.90)
Emotion Regulation	27.82 (3.61)	26.05 (2.85)

In the parent sample, 8.5% met criteria for highly probable ADHD (>4 symptoms) on the ASRS.

Parent Demographics	<i>n</i>	%
<b>Highest Level Education Completed</b>		
High School GED	1	1.9
College/Trade school	12	22.2
Bachelor's Degree	16	29.6
Professional/Graduate Degree	19	35.2
<b>Household Annual Income</b>		
\$45-\$60 000	4	7.4
\$60-\$75 000	3	5.6
\$75-\$100 000	11	20.4
+\$100 000	31	57.4

### Power Analysis

A power analysis conducted using G\*Power software revealed that in order to obtain a minimum power of 0.8 in a linear regression analysis with 1 predictor variable, a minimum sample size of 55 participants is needed. Given that this exceeds the current sample size, the results of this study should be interpreted with caution.

### Regression Analyses

The first multiple regression analysis examined whether parental ADHD symptoms predict child ADHD symptoms. Results were not statistically significant, suggesting that parental ADHD symptomatology does not predict child ADHD symptoms in the current sample.

The second regression analysis revealed a significant negative linear relationship between parental ADHD symptomatology and child emotion regulation ( $\beta=-.36$ ,  $t=-2.60$ ,  $p < .05$ ). Specifically, 13% of the variance in child emotion regulation can be explained by parental ADHD symptomatology ( $F(1,45)=6.77$ ,  $p < .05$ ) This analysis suggests that high parental ADHD symptoms predicts poorer emotion regulation abilities in children.

## Discussion

The present study examine the role of parental ADHD symptoms and child ADHD symptoms and emotion regulation, respectively. Findings did not reveal a relationship between parent and child ADHD symptoms, but did reveal a predictive relationship between parental ADHD and child emotion regulation difficulties.

A lack of positive association between parent and child ADHD symptoms is inconsistent with previous research. There are several possible explanations for this finding. For instance, it is highly likely that the small sample size, and therefore lack of statistical power, may account for the lack of relationship. Given that this study is ongoing, it is hoped that further data collection (target sample size  $n = 100$  families) will allow us to make more confident assessments of the relationship between parent and child ADHD symptoms.

It is also possible that sample characteristics may, in part, account for the lack of association. For instance, the sample overrepresented families of higher socioeconomic status (~60% of sample earning a household income of >\$100 000). Moving forward, it will be important for this project to seek out a more representative and varied sample of families.

Consistent with our second hypothesis, parental ADHD symptomatology was predictive of poorer child emotion regulation abilities. This is consistent with previous studies, which have shown that parents with ADHD are more likely to use harsh and inconsistent methods of parenting and discipline, which in turn may result in more poor emotion regulation abilities in children.<sup>10</sup> The present study suggests a direct link between parental ADHD symptoms and child emotion regulation difficulties, however further research is needed in order to explore mediational factors in this young population.

### Future Directions

Moving forward, more data is needed in order to better understand the relationship between the variables studied here. Should results support the association between parental ADHD and child ADHD as well as emotion regulation abilities, intervention efforts targeting parental, as opposed to only child, symptoms and functioning may be warranted.



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