Abstract

Attention-Deficit/Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder that is characterized by “a consistent pattern of inattention and/or hyperactivity/impulsivity symptoms that interferes with functioning in at least two domains” (DSM-V, 2013). While most studies link reading impairments to attention symptoms, Kagan’s (1965) seminal work documents a significant positive correlation between cognitive impulsivity and reading abilities in typically developing school-aged children (Kagan, 1965). Moreover, extant research documents a relation between academic achievement impairments and ADHD-related cognitive impairments (i.e., executive functions). The purpose of this review is to examine ADHD-related reading abilities. We aim to outline the foundation for research on the relation between reading abilities and ADHD symptoms. We will examine both reading abilities broadly and examine specific reading-related processes (i.e., reading comprehension and reading decoding). Moreover, we will examine the relation between impulsivity and reading abilities in school-aged children diagnosed with ADHD. Our goal is to understand the etiology (i.e., root cause) of impaired reading abilities in school-aged children diagnosed with ADHD. Clinical and research implications will be discussed.

Introduction

- Approximately 5% of children are diagnosed with ADHD (American Psychiatric Association, 2013).
- Children with ADHD score 1-3 standard deviations lower than their typically-developing peers on standardized achievement tests (Shonk, 1998).
- ADHD is frequently co-morbid with reading problems (i.e., classroom rate for ADHD and reading disability is 15-40%, in reading, Writing, 2005).

- ADHD symptoms were a stronger predictor of reading difficulties than contrariwise.
- Inattentive symptoms were found to be a stronger predictor of reading difficulties than hyperactivity/impulsivity symptoms in both age groups.
- The findings suggest a strong relationship between inattentiveness and reading abilities for children diagnosed with ADHD (American Psychiatric Association, 2013).
- Greven et al. conducted a 2012 longitudinal study evaluating the genetic influence on the association between ADHD symptoms and reading difficulties.
- Data from 7,700 twin pairs within two age groups 7-8 years and 11-12 years.
- ADHD symptoms were a stronger predictor of reading difficulties than hyperactivity/impulsivity symptoms in both age groups.
- The study implies children with ADHD are at risk of reading impairments.

- What is the relation between cognitive impulsivity (or ADHD symptoms) and reading problems?
- Do reading problems (i.e., fluency, decoding) predict cognitive impulsivity in a clinical ADHD sample of school-aged children?

Proposed Research Questions

My honors thesis will examine the following two questions:

1. Do cognitive impairments (i.e., executive functions, working memory) moderate the relation among ADHD symptoms (attention, hyperactivity/impulsivity) and reading problems (i.e., reading comprehension, fluency, decoding)?
2. Does cognitive impulsivity predict reading problems (i.e., reading comprehension, fluency, decoding) in a clinical ADHD sample of school-aged children? (This is a replication of Kagan’s study with an ADHD sample)

Future research should explore the following questions:

- What is the relation between cognitive impulsivity (or ADHD symptoms) and reading problems?
- Do reading problems (i.e., fluency, decoding) predict cognitive impulsivity in a clinical ADHD sample of school-aged children?

Proposed Methods

- The study will include children between ages 8-12 who were referred to a clinical research laboratory for attention and learning problems.
- The children’s reading performance will be correlated with their ADHD symptoms.
- The following measures will be included in the study:
  - Kaufman Test of Educational Achievement – Third Edition (K-TEA-III)
  - Matching Unfamiliar Figures (MUFTy); a measure of cognitive impulsivity
  - Continuous Performance Task (CPT) i.e. commission errors
  - Teacher Report Form (TRF).

Preliminary Results

Table 2: Correlations Among Study Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADHD (rs)</th>
<th>ADHD+RD (rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Comprehension</td>
<td>0.49**</td>
<td>0.47**</td>
</tr>
<tr>
<td>Controlled Word Recognition</td>
<td>0.45**</td>
<td>0.44**</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>0.44**</td>
<td>0.41**</td>
</tr>
<tr>
<td>Block Design</td>
<td>0.54**</td>
<td>0.44**</td>
</tr>
<tr>
<td>WISC-III</td>
<td>0.39**</td>
<td>0.41**</td>
</tr>
<tr>
<td>FSIQ</td>
<td>0.36**</td>
<td>0.35**</td>
</tr>
</tbody>
</table>

Goals for Future Research

1. We aim to firm up the development of impairment specific reading interventions for children diagnosed with ADHD.
2. We seek to provide specific reading interventions to children diagnosed with ADHD whose reading may be impaired on a foundational level (i.e., decoding).

References


References