A Comparison of Parent and Teacher Reports on the Connors-3 Rating Scale

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Introduction

The accepted method of ADHD assessment involves the integration of data from various sources. Among the most commonly used sources of data are parent and teacher rating scales. These scales can yield discrepant results, necessitating clinical judgement to determine whether an ADHD diagnosis is warranted. Understanding the frequency and the nature of these discrepancies can enhance the ability of clinicians to determine whether the discrepancies are typical and how they might be interpreted.

The present study examined reporting differences on the Conners 3rd Edition rating scales. The Connors 3rd Edition - Parent and Connors 3rd Edition - Teacher rating scales are norm-referenced measures of child behavior related to ADHD and commonly comorbid diagnoses. They include content scales for inattention, hyperactivity/impulsivity, learning problems, executive functioning, aggression, and peer relations.

This analysis examined reporting differences between parents and teachers across these content scales. We further examined reporting differences among math and reading teachers and between mothers and fathers.

Methodology

This study was a retrospective analysis of de-identified data from a clinical neuropsychological outpatient center. Reasons for referral included but were not limited to evaluation for ADHD or a learning disorder, to assist in the development of a Section 504 Accommodations Plan or Individualized Education Program, or to provide formal academic accommodations. Each neuropsychological evaluation was conducted across 1-4 sessions, lasting approximately 90-110 minutes, over the course of approximately two weeks. Connors-3 were administered to parents and teachers of the children as determined by a licensed clinical neuropsychologist. Parents completed the Conners-3 during the initial intake session. Conners-3 were either mailed or directly taken to the school for teachers to complete.

Conners-3 Score Interpretation

Score range (T-score, M=50, SD=10)	Interpretation
40-59	Average
60-64	High Average
65-69	Elevated
70+	Very Elevated

Methodology Continued

Participants: Children were selected from a deidentified outpatient clinical database. Those with comorbid diagnoses were included. For complete list of demographic characteristics see table below.

Child Demographics	N=282	%
Gender		
Male	177/282	62.8
Female	105/282	37.2
Age		
Elementary (5-10)	141/282	50
Middle-School (11-13)	81/282	28.7
High-School (14-17)	60/282	23.3
Race		
White	116/281	41.3
Black	51/281	18.1
Hispanic	92/281	32.8
Other	22/281	7.8

Analyses: Within-subject ANOVAs were conducted to analyze the difference between parent ratings (mother and father) as well as additional within-subject ANOVAs to evaluate the difference between parent and teacher (mother or father and math or reading teacher) ratings. Additional within-subject ANOVAs were conducted to examine the difference between teacher (math and reading) ratings. The population was sampled to identify children with at least two parent ratings, and for the teacher-parent analyses the population was sampled for any parent with a corresponding teacher rating.

Results

- There was no significant differences between parent reports of child behaviors as measured by the Connors-3. This suggests mothers and fathers reported similarly.
- There was no significant differences between teacher reports of child behaviors as measured by the Connors-3. This suggests reading teachers and math teachers reported similarly.
- There was a significant difference between parents and teacher reports of child behaviors for Inattention $F(1, 268)= 7.957$, $p=.005$; Learning Problems $F(1,268)= 4.603$, $p=.003$; and Executive Functioning $F(1,268)=3.987$, $p=.047$ as measured by the Connors-3. This suggests for these indicators parents and teacher reported differently.
- Teachers on average (m=65.67, SD=13.75) reported lower scores than parents (m=71.82, SD=13.29) for Inattention.
- Teachers on average (m=64.04, SD=11.81) reported lower scores than parents (m=68.53, SD=13.73) for Learning Problems.
- Teachers on average (m=62.29, SD=11.56) reported lower scores than parents (m=66.12, SD=12.46) for Executive Functioning.

Comparison Groups	Outcome
Parents	
Mother (N=287) vs. Father (N=194)	Inattention F(1,448)=1.683, p=.195 Learning Problems F(1,448)= 1.380, p=.241 Executive Functioning F(1,448)=1.055, p=.305
Teachers	
Math Teacher (N=58) vs. Reading Teacher (N=26)	Inattention F(1,72)=.188, p=.666 Learning Problems F(1,72)= 1.710, p=.195 Executive Functioning F(1,72)=.350, p=.556
Role	
Parents vs. Teachers	Inattention F(1,268)=7.957, p=.005 Learning Problems F(1,268)= 4.603, p=.033 Executive Functioning F(1,268)=3.987, p=.047

Conclusion

This analysis demonstrated that the reported ratings between mothers and fathers as well as the reporting ratings between math and reading teachers showed no significant difference.

Furthermore, the analysis demonstrated that teachers and parents report differently from each other on measures of executive function, inattention, and learning problems. Collectively, teachers reported lower scores than parents across all three indicators, suggesting that these areas are less problematic.

Being that these measures are directly relevant to school performance, the explanation for these differences is unclear. This discrepancy may result from differences in the rating style of parents and teachers, or from differences in the children's behaviors exhibited at home versus at school.

The present study has several limitations. Our sample size of teachers was relatively small, which impacts both external validity and statistical power. Another limitation of the study was the lack of reporter demographic information.

Results of the current study demonstrate the importance of utilizing multiple raters with different perspectives when assessing children's behavior using the Connors-3 Rating Scale. It is beneficial for clinicians to be aware that these scales can yield discrepant results, necessitating clinical judgment to determine whether an ADHD diagnosis is warranted. Understanding the frequency and the nature of these discrepancies can enhance the ability of clinicians to determine whether the discrepancies are typical and how they might be interpreted.

Future research should explore the reasons behind the differences in parent and teacher reporting, whether parent or teacher reports are more consistent with diagnostic conclusions, and whether similar discrepancies exist across other measures.

We also recommend further research be conducted on children who are not exhibiting behavioral symptoms, to see if the opposite result occurs. When children are not demonstrating behavioral problems, do they appear to show this behavior equally to both the parents and teachers? That is, do parents or teachers have different expectations from these children? Which group will notice less negative behavior? The answers to these questions could further refine the relationship between parent and teacher ratings on child behavior that we report in the present study.