INTRODUCTION

The purpose of this study was to examine the dimensions of Disruptive Behavior Disorders (DBD) as they relate to risky driving. DBD is a term used to describe childhood and adolescent disorders characterized by poorly controlled, impulsive behaviors. One form of DBD is Attention Deficit/Hyperactivity Disorder-Combined Type (ADHD-C), which has been linked to motor vehicle crashes (MVCs1, increased number of citations 1, and risky driving behavior.2

Another form of DBD is Oppositional Defiant Disorder (ODD), which has also been implicated in risky driving behavior, particularly with respect to aggression.3 Previous studies have not considered whether DBD symptom dimensions differentially affect driving behaviors and driving outcomes.

The present study sought to fill this gap in the literature by examining the relationship between dimensions of DBD (inattention, hyperactivity/impulsivity, and oppositionality) and driving behaviors and outcomes in novice drivers with a DBD.

HYPOTHESES

Greater levels of inattention and hyperactivity/impulsivity will be related to more self-reported driving errors and violations.

Greater levels of inattention and hyperactivity/impulsivity will be related to more DMV reported citations and collisions.

Greater levels of ODD symptoms will be related to more self-reported driving errors and violations as well as DMV reported citations and collisions.

METHOD

Participants:

Twenty-six 16-19 year old novice drivers with a childhood diagnosis of ADHD-C (M age= 17.07 years, SD= 0.92)

The sample was primarily male (72.7%) and Caucasian (86.4%).

Measures:

ADHD-C and ODD Symptoms: Adult Behavior Rating Scale- Self-Report of Current Behavior (ABRS)4

26 item self-reported measure of behavior during the past 6 months:

- Inattention (9 items)
  - Ex. "easily distracted"
  - Hyperactivity/Impulsivity (9 items)
  - Ex. "difficulty flowing"
  - Oppositionality (8 items)
  - Ex. "activates adults out of rules"

Scores ranged from 0-27 for inattention and hyperactivity/impulsivity and 0-24 for oppositionality.

Risk Driving Behavior: Driving Behavior Questionnaire (DBQ)5

8 items measure self-reported errors in driving and 8 items measure violations in driving

DBQ Errors and Violations scales were used:

- Errors—the risky driving behavior addressed was simply a mistake
  - Ex. "I tried to pass someone I didn't notice was signaling to go right."
- Violations—the risky driving behavior addressed was simply a mistake
  - Ex. "I crossed an intersection after the light turned yellow (or red) even though I had time to stop."

scores for each item ranged from 0-5

Driving Outcomes: Department of Motor Vehicles Records

- Motor vehicle collisions and speeding tickets since receiving license or permit were obtained
- DMV records provided an objective measure of number of crashes

RESULTS

### Demographic and Descriptive Statistics of Study Sample

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>SD</th>
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</thead>
<tbody>
<tr>
<td>Age (in years)</td>
<td>17.07</td>
<td>0.92</td>
</tr>
<tr>
<td>Days since permit (in years)</td>
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<td>0.91</td>
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<tr>
<td>Inattention Severity (scale 0-27)</td>
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<tr>
<td>Hyperactivity Severity (scale 0-27)</td>
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<tr>
<td>Oppositionality Severity (scale 0-24)</td>
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<td>DBQ Errors (scale 0-40)</td>
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<td>4.13</td>
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<tr>
<td>DBQ Violations (scale 0-40)</td>
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<td>Motor Vehicle Collisions*</td>
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<tr>
<td>Speeding Violations*</td>
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<tr>
<td>Minority</td>
<td>3</td>
<td>13.6</td>
</tr>
</tbody>
</table>

* Missing data from 1 participant due to lack of driver's license/permits, resulting in no DMV records.

HYPOTHESES

Greater levels of inattention and hyperactivity/impulsivity will be related to more self-reported driving errors and violations as well as DMV reported citations and collisions.

Greater levels of ODD symptoms will be related to more self-reported driving errors and violations as well as DMV reported citations and collisions.

DISCUSSION

Pearson’s correlations were used to determine the relationship between dimensions of DBD, driving behaviors and outcomes.

Greater levels of inattention on the ABRS were significantly related to more self-reported errors and violations on the DBQ.

Greater levels of hyperactivity on the ABRS were significantly related to more self-reported violations on the DBQ.

Higher levels of inattention and hyperactivity on the ABRS were significantly related to DMV Records reported collisions and moving violations.

However, greater levels of ODD on the ABRS was not related to self-reported errors and violations or DMV reported motor vehicle collisions and moving violations.

REFERENCES


CONCLUSIONS

- ADHD-C symptom severity appears to be related to various driving behaviors in novice drivers.
- This study’s results matched those of previous studies, demonstrating a link between ADHD-C symptomology and risky driving behaviors, MVCs, and moving violations.1
- Unlike previous findings, this study found no link between ODD and risky driving behavior.2
- To our knowledge, the present study is the first to examine the relationship between dimensions of disruptive behavior disorders and driving behaviors/outcomes in a sample of novice drivers with a history of childhood ADHD-C.
- The present study found that while ADHD-C dimensions are related to various driving behaviors and outcomes, symptoms of ODD are not related to these outcomes.
- Inattention is strongly associated with both moving violations and errors, suggesting that individuals with high levels of inattention may exhibit driving problems rooted in a deficit of driving knowledge.
- Symptoms of hyperactivity/impulsivity were only related to moving violations suggesting that individuals with high levels of hyperactivity exhibit driving problems due to difficulties in applying driving rules that is likely they actually know.
- These findings have implications for interventions.
  - For individuals with greater levels of inattention, driving interventions may include improving basic driving skills and helping them become more familiar with driving related rules and laws.
  - For individuals with greater levels of hyperactivity/impulsivity, successful interventions may focus on using rewards to increase appropriate driving behaviors.

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