Reviewer’s report

Title: Driving behaviour in adults with Attention Deficit/Hyperactivity Disorder

Version: 2  Date: 15 March 2015

Reviewer: Jessica Weafer

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This study compared simulated driving performance in adults with ADHD and controls. The simulated drive consisted of an urban scenario that required constant shifting of attention and monitoring of performance, and a low-stimulation motorway scenario that required sustained attention. Results showed greater speeding in the ADHD group overall, but no interactions between group and driving scenario. No group differences were observed in lateral position of standard deviation or eye-tracking measures. Observational coding showed poorer vehicle control and greater levels of frustration in the ADHD group. Indices of driver impairment in ADHD were correlated with hyperactivity/impulsivity scores. The authors conclude that driving impairment in individuals with ADHD may be due to difficulty in controlling impulsive behavior.

Driving impairment in adults with ADHD are well documented. The current study has the potential to make an important contribution to the existing literature regarding specific aspects of driving impairment in ADHD and the mechanisms underlying this impairment. Strengths of the study include a highly realistic driving simulator, the comparison of urban and motorway driving, and the use of eye-tracking measures. Relatively minor suggestions for improvements are detailed below.

1. Several previous studies have examined simulated driving performance in adults with ADHD (some citations below). The introduction would benefit from a review of the findings from previous studies, as well as specific mention of how the current findings will build upon the existing literature.


2. 17 of the 29 participants with ADHD enrolled in the study were taking stimulant medication, but it is not clear what number of the final 22 participants included in analyses were taking medication. Did the results differ between those participants prescribed medication and those who were not? Were there any differences in symptom severity as a function of medication?

3. The description of the driving simulator (section 2.2) provides information for the observational measures only. The dependent measures derived from the driving simulator (i.e., average speed, the proportion of the distance travelled in excess of the speed limit, coefficient of variation of velocity, and standard deviation of lateral position) should be included here as well.

4. The discussion should include a section that compares the current findings to those from previous driving simulation studies in adults with ADHD (see Comment #1) and offers potential explanations for any discrepancies in findings.

5. Indication of significance of comparisons should be included in Table 2.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.