Reviewer's report

Title: ADHD in girls and boys - gender differences in co-existing symptoms and executive function measures

Version: 2 Date: 23 January 2013

Reviewer: Julia Rucklidge

Reviewer's report:

This study presents comparisons of males and females without ADHD with males and females with ADHD on measures of behaviour and executive function. This design and type of comparison is not novel in itself, the novelty lies in how the data were analyzed. The authors present the data looking at ranking of variable importance to determine if certain variables stand out as more important for girls than boys. This presented as an interesting approach although I am not sure of the clinical utility of the approach. This paper will be of interest to those directly looking at gender issues.

1. Is the question posed by the authors well defined? YES
2. Are the methods appropriate and well described? YES
3. Are the data sound? APPEARS SO ALTHOUGH I HAVE NOT DONE A RANDOM FOREST CLASSIFICATION AND SO THE JOURNAL MIGHT LIKE TO FIND SOMEONE WHO IS EXPERT ON THIS METHODOLOGY
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? I THINK SO
5. Are the discussion and conclusions well balanced and adequately supported by the data? NEEDS SOME WORK - SEE REPORT
6. Are limitations of the work clearly stated? SEE REPORT
7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? YES
8. Do the title and abstract accurately convey what has been found? SEE REPORT
9. Is the writing acceptable? YES

Discretionary Revisions: none

Minor Essential Revisions

1. As the abstract stands on its own, it is difficult to follow, particularly if one isn’t familiar with Random Forest Classification techniques. I think the conclusions of the abstract are also overstated. I think an additional comment needs to be made that these results will not aid in the diagnostic process and the results of the ANOVAs also need to be mentioned given that one of the aims was to do group comparisons. Ultimately, the ANOVA findings are similar to the findings of other
researchers in that there are very few gender differences in ADHD.

2. In the introduction, the third hypothesis is not obvious as to why that prediction was made based on the literature review.

3. Methods – 4th line – I think the authors meant the ADHD participants. They also need to clarify whether forms were completed by the teachers.

4. On page 7, how many were excluded based on the exclusion criteria? Percentages with the various co-occurring disorders would also be helpful.

5. Table 1 – hyperactivity was spelled wrong.

Major Compulsory Revisions

1. I really struggled with the term “predictor”. I assume this is how the approach is described but readers might get distracted by the term and think that causality might be being inferred when actually, all that is being looked at are associations. This needs to be very clearly mentioned and explained, both in the results and in the discussion section. I also think the abstract needs to be revised in light of this most sensitive issue. Perhaps distinguishing variable is a better term?

2. I think the authors need to flesh out the clinical utility a bit more. How useful is this technique on an individual basis? How might these data be useful I to the practising clinician?

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

no conflicts of interest to declare