Reviewer's report

Title: "ADHD children and adolescent - Neurofeedback treatment: A randomized controlled clinical trial - Effect of core symptoms"

Version: 1 Date: 3 April 2012

Reviewer: Carroll W. Hughes

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Manuscript needs reviewed and edited by someone more fluent in use of English language; there are a number of awkward sentences and use of words throughout (e.g., “auditive” feedback [rare usage], alfa for alpha). Also, there is mixed use of NF and NFT. Choose one and be consistent.

ABSTRACT: Last sentence needs editing to indicate that the values are compared to what?

INTRODUCTION: Spacing of lines and paragraph construction needs editing. Reference the Lubar and Othmers protocols.

METHOD: Subjects – should refer to and discuss the consort flow chart at this point in method. Likewise could move the IRB process to here (children assent? Not consent), not at end of statistics description. Statement regarding “almost half confirmed their participation” doesn’t match the 91 – what does that statement mean? The ADHD diagnostic assessment paragraph really needs editing with more procedural details. Inclusion should state how IQ was assessed and with what instrument with reference. What were the exclusion criteria? What were the diagnostic comorbidities? Should “Dropped out” be part of subject section and consort chart? Neurofeedback – need to include more information about “targeted frequencies” and “specific conditions we tried to address specific to the individual”. That statement makes one think everybody could have been treated differently? How would one replicate your procedure? Need to be a lot more specific about what drove the decisions made and how addressed.

Evaluation of effect of treatment – were the raters (and who were they? Clinician, parent, teacher, self, etc.) blinded to treatment? Footnote 3 in Table 1 suggests only based on parent score. That needs to be stated in the methods and unfortunately is not as good as using blinded trained clinician raters combined with blinded school reports.

STATISTICAL ANALYSIS: “Basic methods…” needs to be more specific. Not sure one tests for “change scores vanishing”; can’t prove a null hypothesis. Instead of paired t-test and change scores, one could use a repeated measure ANOVA (allows for covarying age, gender and IQ) or mixed model random regression. It appears that a “completer” analysis was conducted? Are the scores in Table 2 the change score? Or the raw score? The use of scores without labeling is very confusing. It is not clear where the p-values in Table 2 for Treatment group comparisons come from. Are they based on a post-hoc after the ANOVA? Your Bonferroni doesn’t appear to be correct as described in statistical
section. In table 2, you did at least 12 one sample (paired/dependent) t-tests. It would be better if the pre test values of Table 1 were in Table 2 so one can see a direct comparison with the post values (and based on raw scores rather than change scores). The statistical tests need to be explicitly clear that there are between group comparisons (with a post hoc for ANOVA model), and within group comparisons. A simple bar graph of pre-post scores for each group might be more helpful than current Figure 2, but Figure 2 is good.

RESULTS, DISCUSSION, and CONCLUSION: Both sections are very brief and lacking in details. No consideration of what the results really mean or what may explain the findings for attention. And a more thorough integration and comparison to prior studies would be better. What are the clinical ramifications?

Figure 1. What does “Not accepted” mean and need to include somewhere the various reasons for not accepted. Similarly, what are the reasons for “dropouts”? Figure 2. “Rate” scale, word is rating.

Table 1. Needs work regarding footnote 3 (see above). Are these the baseline (T1) scores? If so, needs to be part of title. Superscript 2 on gender is incorrect based on footnote. How does one do an ANOVA on dichotomous gender? Need to use Chi-square.

Level of interest: An article of importance in its field

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.