Reviewer's report

**Title:** Exploratory Analysis of Obsessive-Compulsive Dimensions in Children and Adolescents: A Prospective Follow-up Study

**Version:** 1  **Date:** 24 September 2005

**Reviewer:** Nicholas Horton

**Reviewer's report:**

General

The authors conduct a factor analysis of obsessive compulsive (OC) dimensions in children and adolescents. Because of the extremely small sample size involved, there are serious limitations to the use of statistical methods for inference about these underlying higher order associations, and serious caveats are needed. Some analyses may need to be rerun, but most changes would require a softening of conclusions and listing of these limitation. With those changes, the manuscript would be a valuable contribution, as this is an important area of research, and exploratory analysis in this area is vital to understanding the course of OCD disorder over time.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

The authors carry out student's paired t-tests for comparisons of the number of categories of obsessions (1.9 +- 2.0) but these are clearly non-normally distributed variables (since the 95% CI is negative). Given the extremely small sample size, non-parametric methods should be used instead (and will likely yield similar conclusions regarding changes over time).

The discussion at the end of the results/symptom categories section regarding was unclear. Apparently the authors used the percent drop of the total YBOCS was used as a covariate. The authors note that they "yielded nonsignificant coefficients" and suggested that this implied the independence of overall education. This conclusion doesn't appear to be justified given the extremely small sample sizes. It is likely that a lack of power is the cause of the lack of significant association in this second order association.

While the authors note that they intended to carry out an exploratory factor analysis, the small sample size limits their ability to answer these questions. While the paragraph in the Discussion "Third, the loadings ..." addresses the uncertainty regarding stability of factor loadings, a more general statement of this limitation should be included (not just stating that "subgroup analysis was not done because of the need for large samples").

A final caveat of the robustness of these results to non-normality of the 13 symptom categories. The authors provide no justification that these scores on the 13 measures are normally distributed, which is a hugely important assumption needed for use of factor analysis (particularly when the sample sizes are so small). This information can and should be reported in Table 1 (see note below).

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

It is unclear why the df=40 for the comparison of Y-BOCS scores from baseline (22.3 +- 5.3) to follow-up (17.1 +- 5.7). Were not 42 subjects observed at both time points?
Table 1 might be more comprehensible if the results at baseline for the 42 subjects who were observed at followup was also reported. It's not clear that there is a need to report both n and % here; more useful would be include the mean score (perhaps for those reporting the symptom?)

Figure 1 reports mean and SEM for four domains over time. This presentation would be much improved by use of parallel boxplots (since that would describe the center, spread and skew of the distribution).

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests.