Reviewer's report

Title: Tourette Syndrome and Learning Disabilities

Version: 2 Date: 8 March 2005

Reviewer: Mark Mahone

Reviewer's report:

General

March 8, 2005
Title: Tourette Syndrome and Learning Disabilities

This is an interesting study examining the incidence and features associated with Learning Disabilities among children with Tourette Syndrome (TS). Using a large, international consortium database of 5500 subjects (5450 children with TS used for the present manuscript), the authors compared groups of children with Learning Disabilities (TS+LD) and those without Learning Disabilities (TS-LD) on associated family history, medical, and psychosocial variables. The authors concluded that there were phenotype differences between children with TS with and without LD.

The manuscript has a number of significant strengths:
1) Use of an international database with a fixed diagnostic criteria for assessing TS.
2) Large sample (n = 5450)
3) Availability of relevant historical variables.

---------------------------------------------------------------------------------------------------

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

First, the makeup of the groups doesn't seem to add up. Of 5450 subjects with TS, 1235 (22.7%) had LD and made up the TS + LD group, while 3374 (69.2%) reportedly did not have LD and made up the TS-LD group. That only adds up to 91.9%. The authors then report that an additional 441 patients had no comorbid conditions (8.1%). Shouldn't they be in the TS-LD group, thus making that group add up to 3815 (72.3%)? Given that the makeup of the groups is unclear, the rest of the analyses are unclear.

Second, the authors report that 22.7% of their sample had LD. They also report in Table 2 that 3151 children in their sample had ADHD (58%), which is in line with previous reports of the comorbidity between TS and ADHD. The comorbidity between ADHD and LD is also well documented in the literature, and occurs more frequently than expected by chance for reading disorders alone (25% to 40%; Dykman & Ackerman, 1991; Semrud-Clikeman et al., 1992). So, if 1235 children in the sample had LD and 3151 children in the sample had ADHD, then it is entirely possible that the seemingly inflated rate of LD in this sample is due to the co-occurrence of LD with ADHD—given the (expected) high rate of ADHD in this sample, and not because of the comorbidity between TS and LD in the absence of ADHD. The authors need to clarify the rate of LD among children with TS+ADHD and in TS-ADHD.

Third, the diagnostic criteria for LD do not seem clear enough (and standardized enough) to be collapsed across sites. Were basic reading, reading comprehension, math concepts, math
computation and written language all assessed? Does this just represent reading disabilities? Do children with borderline IQ fall into the LD group if their academic achievement scores fall in line with their IQ scores? Do children with primarily expressive language disorders, but without reading or math problems get categorized as LD?

---

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

---

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.