Author's response to reviews

Title: Tourette Syndrome and Learning Disabilities

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Author's response to reviews: see over
Dear Bio Med Editorial Team
Re: MS1463089105664398 "Tourette Syndrome and Learning Disabilities"

We have carefully read the reviewers comments and have responded to them. I have described the changes we have made.

Reviewer: Jennifer Saltzman-Benaiah

1. We have made a change in text to reflect that rarely LD may be diagnosed in subjects who also have mental retardation. These subjects were not included in the LD population of this paper. (see bottom of page and top of page six).

2. We have added a comment to this effect on the top of page six.

3. This sentence was deleted. We have modified the sentences for clarity.

4. Age at diagnosis was on page 9 was restated as directional (younger age at time of diagnosis).

5. We have changed the text to reflect that the discrepancy model is one of several used in the US.

Reviewer: Mark Mahone
In the results and in the discussion section of the manuscript we have devoted one page of the 11 total pages of text to a discussion of the potential role of ADHD on LD. These comments are included here for ease of review:

From Abstract: ADHD may be an important comorbid condition in the diagnosis of LD or may also be a potential confounder.

From Results: ADHD was the most prevalent comorbid disorder for subjects with TS + LD. In this population 58% (3151) of the TS children had ADHD and 31% (990) of these had LD. The potential impact of ADHD on LD either as a causal factor or as a confounder for the diagnosis of LD is demonstrated by the finding that only 11 % (245) of the 2299 TS children without ADHD had LD.

From Discussion: The etiology of learning disabilities and the appropriate conceptual view of these diverse disorders as comorbid disorders or as variably prevalent components of the broader TS phenotype has yet to be resolved.[2,3,8,9,11,12] In this study ADHD was the most prevalent comorbid disorder for the 5,450 subjects with TS occurring in 57.8% of subjects (n=3151). In subjects with TS + LD 80.2% also had a diagnosis of ADHD and in the TS - LD group 51.3% had a diagnosis of ADHD. We found that 31% of subjects with ADHD also had a diagnosis of LD compared to only 11% in subjects with TS who did not have ADHD. Thus, the comorbidity rates in this study may not differ from those reported for ADHD and reading disorders alone [26,27]
where the prevalence of comorbidity between reading disorders and ADHD is 25 to 40%. The increased rates of ADHD in the TS + LD group may have multiple explanations including the possibility that ADHD is a confounder and that most cases of LD in subjects with TS represent the additional impairments in learning from the ADHD. In which case LD is misdiagnosed or that ADHD is an important component in the causal chain for LD and that LD is very often under diagnosed in subjects with ADHD. Additional research is required to determine which, if either, of these possibilities is correct. Other data sets will likely be required to examine the role of ADHD on LD in subjects with TS and other combinations of LD, ADHD and TS.

In paragraph four the reviewer had minor calculation errors, by our calculations, but we have tried to make the reviewers point in the paper.

We are unable to do much more on the topic of ADHD since we do not have the data to study the role of ADHD on LD in subjects with TS.

Thank you for consideration of our work.

Sincerely,

Larry Burd