

Submitted: 4 Jun. 2020  
 Accepted: 7 Jul. 2020  
 Published Online: 31 Aug. 2020

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**HOW TO CITE THIS ARTICLE:** Tripathi R, Salvi D. Comments on “Development of a battery to assess perceptual-motor, cognition, language, and scholastic skills among bengali children with neuro developmental disorders”. *Indian J Psychol Med.* 2020;42(5):482–483.



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Website: [journals.sagepub.com/home/szj](http://journals.sagepub.com/home/szj)  
 DOI: 10.1177/0253717620945130

## Responses to the Comments on “Development of a Battery to Assess Perceptual-Motor, Cognition, Language, and Scholastic Skills among Bengali Children with Neurodevelopmental Disorders”

We appreciate the thoughts shared and the specific concerns expressed<sup>1</sup> by our learned friends regarding our article.<sup>2</sup> We also appreciate their concern related to the specific difficulties we face in India regarding the assessment of children with neurodevelopmental disorders (NDD). Kindly find our comments related to the specific concerns expressed by them as follows.

- This is a tool for the identification of perceptual, cognitive, motor, and language skills, to tap down the processes behind the scholastic difficulties in children with NDD and has a subtle

difference from an assessment tool. In this work, our goal was not to develop a tool to only assess and generate a score or a quotient and label a child. We aimed and are still in the process of further developing the test to get comprehensive information about a child’s underlying processes causing difficulty in scholastic performance, which could be utilized by mental health professionals, educators, and parents for intervention.

- As our work evolved from the difficulties we faced while planning intervention for children with NDD, in this test, those subtle aspects of perceptual-motor, cognitive, language, and scholastic skills, like quantitative thinking, have been incorporated that we do usually miss to test and think as unimportant. We have witnessed in our clinical work that interventions in these areas help to bring a lot of positive outcomes in cognition, behavior, and academics in the client, within their limits. Moreover, very few standardized tools are available to evaluate scholastic skills. Most of the tools

that assess scholastic skills focus only on reading, writing, and mathematics (computation). Language, being the most important skill in a multilingual schooling environment, like in India, has been given special attention in this tool.

- Across the diagnostic categories of NDD, the basic level of monitoring, including attention monitoring, which interferes with task-involvement, is disturbed. For this reason, the prerequisite skill that interferes with their basic adaptation in daily life and basic academic task (as this is considered as the main task at this developmental age), has been paid attention to in our study. Unless these skills and their underlying processes are modified through intervention, the assessment of executive function—separately—may not be helpful at this juncture. For example, in those with attention deficit hyperactivity disorder or autism, the psychopathology refrains them from their task involvement for a very basic deficit in execution and interferes with task involvement to the extent that it cannot

be ascertained whether the non-performance is due to dysexecution or non-involvement. The latter itself indicates dysexecution, which does not need formal assessment right at this time, overtaxing the child. However, processing speed or vigilance, which is required, is revealed from the subtests of this tool such as auditory attention and visual attention. If required, an available executive function test can be used.

4. Many theories in different domains of knowledge have evolved based on observation. Wechsler Intelligence Test, one of the most robust cognitive assessment tools, is historically atheoretical.<sup>3</sup> Woodcock–Johnson Tests of Cognitive Abilities claims that it is developed following the Cattell–Horn–Carroll (CHC) theory, a well-known theory to understand cognitive-achievement abilities of children<sup>4</sup>; however, researchers have not been able to establish CHC theory fully for this test.<sup>5</sup> Moreover, the claimed validity of this theory has been recently questioned.<sup>6</sup> From our clinical experience, we found that sticking to any one theory would limit the observation of this broad spectrum of NDD, though we referred to CHC theory, information processing model, and Piaget’s theory of cognitive development. We realized that in clinical research, it is important to develop a tool that emerges from behavioral observation, leading to identification of subtle deficits.
5. In the article, we had mentioned how we had reviewed other research to get an understanding of the underlying processes. We had also discussed with many scholars before finalizing the domains of the tool. Some of the domains mentioned by the authors of the comments were also incorporated—but during the process of validation, we had to drop them.
6. Using only closed-ended questions helps in improving the psychometric property but might restrict proper evaluation in domains like pragmatics and written expression, as the expression is better evaluated when open-ended. At the same time, tasks

such as comprehension and vocabulary were kept semi open-ended, keeping in mind the fact that a language like Bengali has many dialects and, therefore, fixed correct responses could yield inconsistent results.

7. Since no one function, at any level of cognition, is independent of another function, when there is an overlap, interpreting both from the single item is required based on one’s clinical acumen. To use this test battery, the clinicians are to be given a thorough training to establish a link between the test behavior, the findings, and the performance of the children in their lives. The purpose of the tool is more to help the clinicians to identify the deficits for intervention than for the purpose of knowledge or for research into the neurophysiological and psychological aspects of the disease spectrum.
8. We appreciate the authors’ concern about the heterogeneity of the study group. As this tool has been developed from the developmental perspective, though norms and scores are important, getting a profile of a child to plan an intervention to stimulate all-round development is more essential. We had also calculated the sensitivity and specificity of the test, but it was dropped from the paper as we gave emphasis on the construct validity of the test following stringent criteria. Moreover, due to the heterogeneous sample of this study, commenting on the sensitivity and specificity may be too simplistic. In addition, at this early stage of the test development, it may not be possible to establish ecological validity. We are thankful to the authors for giving us the necessary inputs that may help to improve our test. We are aware of the limitation and are working on a bigger data set for both normal and NDD groups to create norms for specific ages and conditions of NDD.

#### Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Submitted: 11 Jul. 2020

Accepted: 12 Jul. 2020

Published Online: 19 Aug. 2020

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**HOW TO CITE THIS ARTICLE:** Mukhopadhyay P, Bhattacharya L, Roy PK, Saheli Misra (Chatterjee). Responses to the comments on “Development of a battery to assess perceptual-motor, cognition, language, and scholastic skills among Bengali children with neurodevelopmental disorders”. *Indian J Psychol Med.* 2020;42(5):483–485.



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Website: [journals.sagepub.com/home/szj](http://journals.sagepub.com/home/szj)

DOI: 10.1177/0253717620946456

## Comments on “Serum Lipids among Drug Naïve or Drug-Free Patients with Obsessive Compulsive Disorder and Their Association with Impulsivity”

Vats et al.<sup>1</sup> presented a cross-sectional, comparative study on serum lipids and obsessive compulsive disorder (OCD)-related impulsivity. It is a good attempt to search for a biomarker of impulsivity. However, the study is methodologically flawed in different dimensions that should be discussed before taking any clinical conclusion from it.

Though the sample size was small ( $N = 40$ ), it is acceptable in a case-control design. The sample was not explored for the metabolic profile, lifestyle factors, pregnancy, or post-pregnancy changes (which is relevant given the higher female to male ratio), neither did the study mention specifics on substance abuse. Does comorbid diagnosis according to *International Classification of Diseases, Tenth Revision* mean nicotine dependence too? That also should have been specifically mentioned, as having a metabolic syndrome and substance use can have a significant impact on the lipids fraction.<sup>2</sup> Moreover, persons with psychiatric illness have a higher prevalence of metabolic syndrome.<sup>3</sup>

Even though the study speaks about the OCD types, it did not mention OCD symptomatology. For example, a person with severe OCD-related slowness can have a significant sedentary lifestyle that results in dyslipidemia.<sup>4</sup> Hypothetically,

an OCD patient can have binge-eating habits, leading to an increased level of lipids, especially triglycerides.<sup>5</sup>

The impulsivity construct was divided into high and low with an author-made analogy by using the median, although the scoring manual of the Barratt Impulsiveness Scale does not allow it. The authors could have checked the relationship with the use of Pearson or Mann-Whitney tests, without molding the nature of the scale.

The conclusion achieved was a negative correlation between high density cholesterol and impulsivity. There are a few studies that say low HDL can be present in the normal population as well.<sup>6</sup> As the authors did not consider normal controls in correlating impulsivity, the HDL-related finding might be just a normal phenomenon.<sup>7</sup> In the end, the authors did not explain any clinical significance of the study.

We feel that it is a welcome step, being the first study, but more studies with a stringent study design are needed in this area.

#### Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Submitted: 7 Jul. 2020

Accepted: 8 Jul. 2020

Published Online: 23 Aug. 2020

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