Differentiating Nonverbal Learning Disorder and Higher Functioning Autism with the ADOS-2 and CCC-2

Joseph E. Casey & Selena E. Scott
University of Windsor, Department of Psychology

Introduction

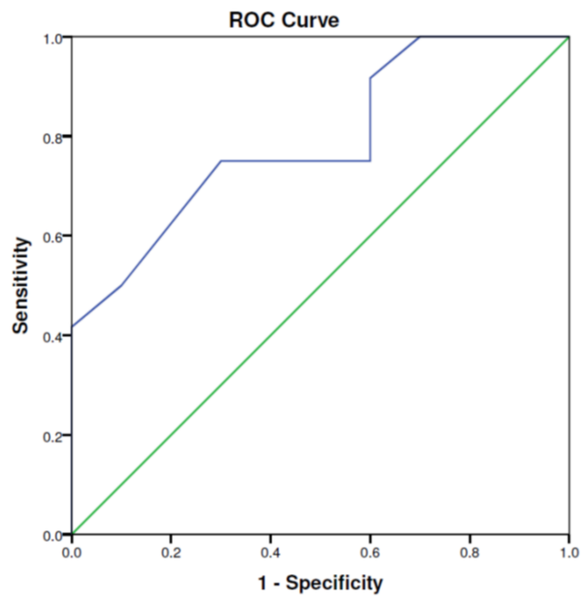
- There is debate over the extent to which Higher Functioning Autism (HFA), or Asperger's Disorder, and Nonverbal Learning Disorder (NLD) overlap in neuropsychological and psychosocial characteristics, and, consequently, whether they can be clinically differentiated.
- The social functioning of children with Autism Spectrum Disorder (ASD) has been studied extensively, leading to the development of tests sensitive to the behavioral features of the disorder.
- To date, no study has examined how children with NLD perform on such tests.
- The present study examined whether NLD and HFA could be differentiated on the Autism Diagnostic Observation Scale-Second Edition (ADOS-2) and the Social Interaction Difference Index (SIDI) of the Children's Communication Checklist-Second Edition (CCC-2).

Participants & Methods

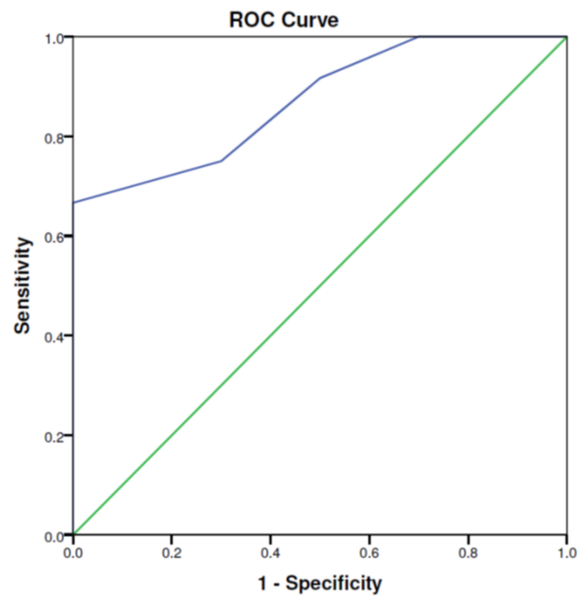
- Of 31 participants, 12 met criteria for HFA (M_{age}=12.8) and 10 for NLD (M_{age}=12.3).
- The HFA participants were previously diagnosed using DSM-IV-TR or DSM-5 criteria by a community psychologist or psychiatrist without consideration of their neuropsychological test results.
- The NLD participants met the primary neuropsychological criteria for NLD (adapted from Casey et al., 1991) without consideration of their psychosocial functioning.
- Receiver operating characteristic (ROC) curve and two-way contingency table analyses were employed to determine the diagnostic utility of the ADOS-2 Module 3 (total score) and the SIDI.

Results

- For the ADOS-2, the area under the curve (AUC) was .79 with an optimal cut-off score of 7 (sensitivity of .75 and specificity of .70).
- For the SIDI, the AUC was .87 with an optimal cut-off score of -8 (sensitivity of .70 and specificity of .75).
- Group membership was found to be significantly related to the ADOS-2 total score (Pearson χ^2 = 4.46, p = .035, Φ = .45) and the SIDI score (Pearson χ^2 = 7.24, p = .007, Φ = .57).
- Obtaining an ADOS-2 total score and a SIDI score within the ASD range was 6.7 and 2.5 times more likely, respectively, when the participant was in the HFA group.



ROC curve analysis investigating the differential diagnosis between HFA and NLD using the total score of the **ADOS-2**



ROC curve analysis investigating the differential diagnosis between HFA and NLD using the **SIDI**

Conclusions

- The ADOS-2 and CCC-2 are useful in the differential diagnosis of NLD and HFA.
- Optimal cut-off scores on these tests were similar to well-established clinical cut-off scores.
- The findings support the validity of NLD and HFA as separate clinical conditions.

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