Utility of Neuropsychological Screening in a Multidisciplinary Neurocutaneous Clinic

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**BACKGROUND**

Children and adolescents with neurofibromatosis type 1 (NF1) are at increased risk for neurocognitive dysfunction and neurodevelopmental/psychiatric comorbidities (1, 2). These cognitive deficits can be identified utilizing neuropsychological testing and evaluation. The purpose of this project was to examine the utility of neuropsychological screening in a multidisciplinary neurocutaneous clinic and determine whether a brief evaluation can adequately screen children with NF1 for cognitive dysfunction or psychiatric comorbidities.

**METHODS**

Children with neurofibromatosis type 1 underwent neuropsychological screening as part of their multidisciplinary clinic visit. This screening evaluation consisted of clinical interview, neuropsychological testing, and the completion of emotional/behavioral checklists. Our neuropsychological test battery included the Kaufman Brief Intelligence Test—Second Edition (KBIT-2), the NIH Toolbox Fluid Cognition Composite (consisting of 6 subtests), and the NIH Negative Affect Composite (questionnaires). Results were discussed with patients and the medical team during their multidisciplinary clinic visit.

**RESULTS**

A brief neuropsychological screening battery effectively identified neuropsychological diagnoses and deficits in a sample of children with NF1, and many children in this sample required recommendations to address deficits.

**CONCLUSIONS AND ADDITIONAL KEY INFORMATION**

Conclusions:
A brief neuropsychological screening battery completed as part of a multidisciplinary neurocutaneous clinic was efficient and useful in identifying cognitive deficits and neuropsychological diagnoses in children with NF1.

References:

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**PERCENT OF PATIENTS REQUIRING RECOMMENDATIONS**

- Educational Recommendations: 70.5%
- Behavioral Health Recommendations: 64.7%

**MOST COMMON NEW DIAGNOSES**

- Mood Disorder: 21.8%
- ADHD: 17.6%
- Anxiety: 23.5%
- Intellectual Disability: 25.1%
- Mild Neurocognitive Disorder: 29.4%
- Major Neurocognitive Disorder: 29.4%

**AVERAGE KBIT-2 IQ SCORES**

- Verbal IQ: 88.9
- Nonverbal IQ: 81.6
- IQ Composite: 83.8

**NIH TOOLBOX AVERAGE T-SCORES**

- Fluid Cognition Composite: 34.9
- Flanker Task: 39.9
- Working Memory: 41.8
- Processing Speed: 39.6
- Card Sort: 42.5
- Visual Memory: 40.8

**DEMOGRAPHICS**

- N = 17
- Female: 53%
- Male: 47%
- Average age (years): 9.82
- Age Range (years): 5-19

**TESTING**

- Average Testing Time (minutes): 53

**DIAGNOSES**

- Average number of new diagnoses: 1.6

**FOLLOW-UP**

- Percent requiring neuropsychological follow-up: 64.7%
- Median Recommended Follow-up Interval (years): 2-2

**PERCENT OF PATIENTS REQUIRING RECOMMENDATIONS**

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