A novel experimental paradigm to evaluate children and adolescents diagnosed with attention-deficit/hyperactivity disorder: Comparison with two standard neuropsychological methods.

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Abstract

INTRODUCTION:
In this study we evaluated a recently developed test, the Ball Search Field Task (BSFT) as a neuropsychological tool for measuring cognitive and behavioral performance of individuals with disorders such as attention-deficit/hyperactivity disorder (ADHD), which are frequently accompanied by cognitive deficits and a lack of behavioral inhibition. The task provides a complementary method of assessment that attempts ecological validity by drawing on challenges faced in real-world situations. In this task, energetic costs and gross sensorimotor feedback are involved, as participants are required to search for targets in a large open area.

METHOD:
We compared performance on the BSFT in a clinical sample of children and adolescents with a diagnosis of ADHD with their scores on two widely used neuropsychological tools, the Tower of London (ToLo) and the Behavior Rating Inventory of Executive Function (BRIEF).

RESULTS:
We found no correlations between scores on the BRIEF and those on either the BSFT or ToLo. However, we found moderate correlations between rule violations on ToLo and several BSFT variables, suggesting the capacity of these tests to detect common aspects of executive dysfunction.

CONCLUSIONS:
These findings, although modest, encourage further study of tasks like the BSFT, which may help assess cognitive dysfunction found in neurodevelopmental disorders such as ADHD in ecologically valid situations.