

## ABSTRACT

We examined the cognitive profiles of a large sample of children and adults with ADHD ( $n = 5,416$ ). Deficits in broad attention were present, but there were even larger deficits in working memory, long-term memory, and processing speed. There were statistically significant differences by gender and age but effect sizes were very small.

## INTRODUCTION

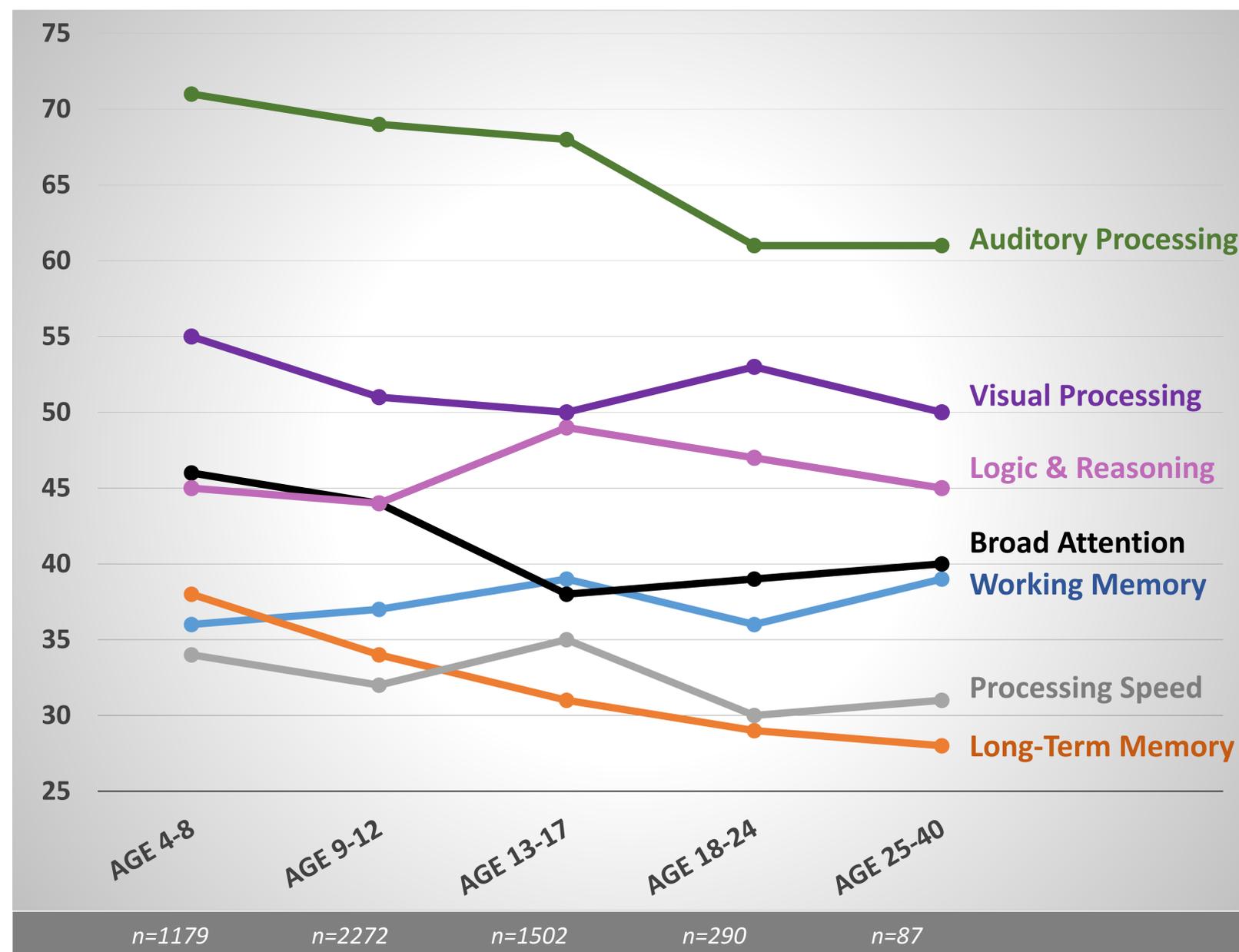
Prior research suggests Attention Deficit Hyperactivity Disorder (ADHD) is associated with deficits on measures of executive functioning, attention, memory, and processing speed but studies have been based on small and medium sample sizes. The current cross-sectional study utilized a large dataset to construct profiles of cognitive skills by age group in children and adults with ADHD.

## METHODS

In a chart review of clients from 79 learning centers between 2010 and 2015, we collected scores on the Woodcock Johnson III - Tests of Cognitive Abilities (WJ III) administered to children and adults previously diagnosed with ADHD ( $n = 5,416$ ).

Using descriptive statistics, linear regression, and MANOVA, we generated overall cognitive profiles and examined differences by *age* and *gender*. Deficits were identified in comparison to the standardization sample as standard scores under the 38<sup>th</sup> percentile.

## Trajectory of Cognitive Skills Percentiles from Age 4 to 40 in ADHD



## RESULTS

- Overall, long-term memory, working memory, and processing speed were the lowest scores, followed by broad attention.
- Age was a significant predictor of 5 of the 7 skills ( $p < .05$ ) but effect sizes were very small: AP ( $R^2 = .002$ ), LR ( $R^2 = .005$ ), Broad Attn ( $R^2 = .005$ ), WM ( $R^2 = .01$ ) and PS ( $R^2 = .009$ ).
- There was a significant difference between males and females on 3 of 7 skills ( $p < .001$ ) but effect sizes were very small: VP ( $\eta^2 = .013$ ), Broad Attn ( $\eta^2 = .003$ ), and PS ( $\eta^2 = .009$ ).
- All scores were marginally higher after age 40 ( $n = 86$ ).
- Attention, memory, and processing speed problems were more severe than other skill deficits on parent and self-reported symptom severity checklists.

## CONCLUSIONS

- Working memory, long-term memory, and processing speed deficits dominate cognitive profiles in ADHD across the lifespan
- Interventions for ADHD should target multiple cognitive skill deficits

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