Research Review: Language problems in children with Attention-Deficit Hyperactivity Disorder – a systematic meta-analytic review

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Abstract

Background
Children with Attention-Deficit Hyperactivity Disorder (ADHD) appear to have a higher risk of language problems compared with typically developing children, although the types of language problems experienced are less clear. This review aims to establish the types of language problems experienced by children with ADHD according to systematically reviewed the literature and determine the empirical evidence for language problems in children with ADHD compared with non-ADHD controls.

Methods
A standardised search protocol was used on databases: CINAHL, Medline, and PsychINFO. We identified studies with the following inclusion criteria: (a) confirmed ADHD status at the time of the study, (b) inclusion of a non-ADHD control group, (c) use of a validated language measure, and (d) age ≤ 18. t-Tests, Pearson's r, and Hedges g effect sizes (ES) were calculated using summary statistics. Random effects meta-analyses were conducted for the language domain suitable for analysis. Publication bias was investigated using both the trim and fill and p-curve techniques.

Results
Twenty-one studies were included in the systematic review (ADHD = 1,209; Control = 1,101), within which 60 of 68 separate analyses found significant differences between the ADHD and control group on the language measures (p < .05). Follow-up meta-analyses found evidence for large deficits in the ADHD groups overall (10/11 studies met p < .05; weighted mean ES [WMES]: 1.04); expressive (10/10 met p < .05; WMES: 1.23); receptive (12/14 met p < .05; WMES: 0.97), and pragmatic language (4/4 studies met p < .05; WMES: 0.98) compared with controls.

Conclusions
This study demonstrates that children with ADHD have poorer performance on measures of overall, expressive, receptive, and pragmatic language compared with controls. A screening of language functioning may be a valuable addition to the assessment of ADHD.