ADHD screens: look into language

A literature review of language problems in ADHD has confirmed large deficits in multiple areas of language functioning among young people with the disorder.

Hannah Korrel at the University of Melbourne and colleagues conducted a systematic review of the academic literature relating to language problems in ADHD, they then carried out a meta-analysis of the pooled data from these studies.

They combined the results of 21 studies which compared the language abilities of under-18s with ADHD to those without the disorder. This totalled 1,209 ADHD cases and 1,101 controls. Across the studies, 17 different tests of language ability were used.

The authors state that all the language tests used in the studies were validated and standardised. The most popular tests, used by 10 studies, were variants of a questionnaire called the Clinical Evaluation of Language Fundamentals (CELF).

All of the studies were cross-sectional, meaning the data were collected at a single time point, they can therefore only be used to make an association between ADHD and language difficulties, not to show that one caused the other.

As well as looking at the results of individual studies, the authors combined data when the same test was used by multiple studies, they then used this pooled data for further analyses.

These analyses explored different language skills, including the children's expressive, receptive, pragmatic and overall language abilities. The authors found the children with ADHD performed worse than controls in all of these areas.

Overall language

As the name suggests, overall language tests incorporate multiple areas and can include reading, listening, grammar and vocabulary. Taking each test individually, 11 out of 12 found significantly poorer performance in the ADHD group. This was confirmed when data from these tests was combined and analysed.

Although the authors' analysis did find a publication bias in favour of this association, the effect was strong enough (mean effect size: 1.04) that the association between overall language deficit and ADHD is likely to be true.

Expressive language

Expressive language defines a child's capacity to put their thoughts into words and sentences in an intelligible way – it can apply to written or spoken language. The analysis of the combined results found a very strong association (ES: 1.23) between expressive language deficits and ADHD, the strongest of any of the different language abilities tested.

Receptive language

This is a child's ability to understand words, sentences and the overall meaning of what they read or hear. Again, the children with ADHD performed worse on 12 of the 14 tests analysed. Although the strength of this association was mixed across the studies, there was still a strong effect (ES: 0.97) when the results were combined.

Pragmatic language

Fewer test results were available for pragmatic language. This is a measure of how well a child can apply and interpret language in different social situations. In spite of the weaker evidence base, the meta-analysis of available data found a strong association (ES: 0.98) between pragmatic language deficits and ADHD.

The authors therefore conclude that there is strong evidence for language deficits in ADHD, and that these could be added to future diagnostic screens for the disorder.

However, they also acknowledge such problems could arise from psychiatric or societal issues separate to ADHD, and the deficits detected by the tests may also be the result of brain-wide issues, rather than language-specific ones.

Korrel, H., Mueller, K. L., Silk, T., Anderson, V. and Sciberras, E. (2017), Research Review: Language problems in children with Attention-Deficit Hyperactivity Disorder – a systematic meta-analytic review. J Child Psychol Psychiatr, 58: 640–654. doi:10.1111/jcpp.12688