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Early Childhood Assessment:

The importance of a multi-method and multi-perspective approach

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The challenges associated with assessing the intellectual functioning of autistic children

The assessment of autistic intelligence presents many challenges, particularly with preschool autistic children who speak very little or not at all (minimally verbal). Most intelligence measures require verbal responses or an understanding of verbal instructions and are based on a "typical" developmental model not adapted to autistic development. Thus, based solely on their performance on these types of tests, it may be mistakenly assumed that they are less intelligent, when in fact some tests simply do not seem to be appropriate for them.

Assessing intellectual functioning in research

Considering the difficulties in properly assessing autistic children in terms of intelligence, one might ask how this impacts research. To properly document and characterize their groups of autistic children, researchers rely on their level of intelligence as

measured by an assessment. However, because of the difficulties associated with this assessment, research results are often inconsistent and difficult to compare. In addition, these assessment difficulties in autism seem to lead to an underestimation of their intellectual potential, and ultimately to their exclusion from studies. All these issues influence the proportion of autistic children who are considered to have developmental delays or intellectual disabilities. In autism, estimates of intellectual disability vary between 13% and 84%! We might as well say that there is no consensus! Guidelines to better assess the intelligence of autistic children are therefore needed.

Researchers from the Montreal Cognitive Neuroscience Autism Research Group have taken an interest in this issue and have conducted a study to examine the extent to which the use of various tools widely used in clinical and research settings affects the proportion of autistic children identified as having developmental delays.



Methodology

The researchers documented the intellectual and adaptive functioning of a cohort of 64 autistic children and 73 neurotypical children aged 28 to 69 months. Most autistic children were considered minimally verbal. Intellectual functioning was measured using the Mullen Early Learning Scale (MSEL), a battery of tests to be completed with the child, and adaptive functioning was assessed with a telephone interview with the parent using the Vineland Adaptive Behavior Scales-Second Edition (VABS). The VABS assesses different aspects and behaviors related to the child's adaptive functioning, such as daily living (e.g.: personal autonomy, hygiene), communication (e.g.: verbal, written), and socialisation (e.g.: interpersonal relationships, playing).

This multi-method (two tools) and multi-informant (child's performance on a clinician-administered cognitive test **and** the child's adaptive functioning reported by the parent) approach was intended to adequately characterize children's intellectual potential in different contexts (in an assessment room versus in daily life at home).

What were the results?

As expected, the neurotypical children had relatively homogeneous cognitive and adaptive profiles, whereas the autistic children had heterogeneous profiles characterized by **visual strengths** and **verbal weaknesses**.

Although most of the autistic children in the sample were considered minimally verbal, **33% of them scored in the average range** for both intellectual and adaptive functioning. The development of these children is therefore considered typical.


Second, **41% had a score showing deficits in intellectual functioning** as assessed in a standardized context (assessment room), **but an average score in adaptive functioning** as reported by the parent, based on the child's abilities in a familiar context (home). If only one score is considered, the abilities of these autistic children may be underestimated.

Only **23%** of the autistic children in the sample **had a score showing deficits in intellectual functioning and adaptive functioning**. Their performance profiles showed no skill peak, meaning they had homogeneous and low scores on all aspects of both tests. They could be considered as having a developmental delay.

Moreover, beside the children with homogeneous and low profiles (23%), autistic children had heterogeneous profiles; some **peaks in ability** were evident when looking at the more visual subscales and when considering the parent's perspective - suggesting "**hidden**" abilities that could not have been captured with a single tool or by looking at the overall scores on the two tools alone!

These results show that the performance of some autistic children in a standardized setting (low normative conditions; only a few encounters with an unfamiliar assessor) does not necessarily reflect what they can do in a familiar setting, as reported by their parents who are well aware of their skills and functioning. It is possible, therefore, that these autistic children have certain skills that cannot always be captured in the intellectual assessment.

What does this mean?

As the researchers in this study have shown, if we use only the global score of a single cognitive tool, in addition to measuring a single facet of intelligence, we risk underestimating some autistic children and mistakenly considering them as developmentally delayed. In both clinical and research settings, in addition to considering the child's functioning in different contexts (standardized and familiar), it is essential to adopt a **multi-method** and **multi-informant** approach to adequately assess his intellectual potential. 

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Original article:

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