

VIEWPOINT

Comparing autism traits

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2 JULY 2013

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It is becoming increasingly common for researchers to administer tests designed to measure features of autism in people who are not suspected of or diagnosed as having autism. There is usually an implicit assumption that the tests measure the same traits in the same way across individuals with and without a clinical diagnosis of autism. But that may not be the case.

In our new study, published 22 May in the *Journal of Autism and Developmental Disorders*, we tested the assumption in a popular measure of autism traits¹. Our results suggest that the test does indeed capture the same autism traits in both groups of individuals. However, identical scores may represent different degrees of the trait in individuals with and without autism.

These kinds of investigations are important because there are a number of reasons why it may be interesting to measure autism traits in the general population, and we need to be sure of what we are really measuring.

Researchers have, for example, been interested in discovering what it means for someone without autism to possess 'autistic personality traits.' Some have found that these traits are associated with an interest in mathematics² or with being somewhat introverted or neurotic³. Other researchers are more interested in clinical autism, but assess people who don't have the disorder in an effort to capture subclinical expression.

Still, we have given little consideration to what we are measuring in the general population. The

assumption that these tests measure the same thing in the general population as they do in those with autism has never been formally tested.

Indeed, there are reasons to think that this assumption could be wrong.

For example, what would it mean for an individual without autism to say that he often becomes absorbed in something to the point that he loses sight of other things? Would he understand and respond to this question in the same way that a person with autism would? Would a positive response to the question relate to an 'autism trait' in both cases, or could something else be causing the individual without autism to respond in this way?

In our study, we assessed whether the Autism Spectrum Quotient Short Form (AQ-S)⁴, a widely used test, measures the same traits across 148 individuals with autism and 168 individuals without. The AQ-S measures five aspects of autism: recognition of numbers and patterns, imagination, switching (of attention), routine and social skills.

We found that there is no fundamental qualitative difference in the traits that the test captures between the two groups. However, the same score did not indicate the same quantitative degree of autism traits in both groups. Scores on items asking whether new situations are anxiety-provoking, whether individuals find it easy to create a mental picture of something, and whether they have a tendency to notice patterns in things showed this kind of bias.

Together these results suggest that it is indeed meaningful to study traits of autism in the general population using the AQ-S, because it essentially taps the same traits in both groups. However, because the measurement properties of the test (specifically, how it estimates the degree of autism traits) are not exactly the same between the two groups, we should be cautious when interpreting group differences in test scores between groups with and without autism.

We encourage other researchers to examine their assumptions when testing individuals without a clinical diagnosis of autism. Ours is only one study, and it will be important to devote more thought and research to this issue. It will also be important to test these assumptions with regard to how tests of autism work in males versus females. We have begun collecting data to explore this question. We would be keen to hear from other research groups who would like to collaborate and share data.

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References:

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