

Examining Measures Used for the Diagnosis of Autism Spectrum Disorder

To date, there is no known biological marker for Autism Spectrum Disorder (ASD) (Huerta & Lord, 2012). Thus, in order to formulate a diagnosis, clinicians often use various standardized measures to gather information from parents and the child (Charman & Gotham, 2013). However, across the literature, there are inconsistent results with regards to agreement between measures and classification systems used for the diagnosis of ASD. For example, some have found that the Childhood Autism Rating Scales (CARS) is more conservative in comparison to the Autism Diagnostic Schedule (ADOS) (Reszka et al., 2014), while others have found that there is good agreement between these two measures (Ventola et al., 2006). Furthermore, there are mixed findings in the literature on the agreement of these measures in relation to the 4th and 5th editions of the DSM (Perry et al., 2005; Taheri et al., 2012). Additionally, in a systematic review, it was found that only 50 to 75% of individuals maintained ASD diagnoses with the shift from the DSM-IV to the DSM-5 (Smith et al., 2015), calling into question the agreement of these diagnostic methods. Therefore, the purpose of this study was to examine the agreement among two commonly used observational measures (ADOS and CARS) and the DSM ASD criteria (4th and 5th edition). In addition, we explored ASD diagnosis for each measure in relation to child characteristics (i.e., cognitive and adaptive level).

The data for this study came from a research project evaluating the long-term outcomes of Intensive Behavioural Intervention (IBI). Twenty-one youth (aged 13-20 years) diagnosed with ASD were reassessed after receiving IBI as young children (ending approximately 10 years ago). The assessment battery consisted of four ASD diagnostic measures (CARS, ADOS, DSM-IV and DSM-5 criteria), and standardized measures of cognitive and adaptive functioning. In terms of percentage agreement between diagnostic measures, there was low agreement on most measures, with agreement for an ASD diagnosis being best between the DSM-IV and ADOS (86%), and agreement for a non-diagnosis being best between the DSM-5 and the CARS (67%). Chi square tests revealed that ratings on most of the measures (i.e. DSM-5 and ADOS; DSM-IV and CARS; DSM-IV and DSM-5; DSM-IV and ADOS; and ADOS and CARS) were independent of each other. In addition, those diagnosed with ASD on the CARS and DSM-IV had significantly lower IQ and adaptive behaviour.

This study is not without limitations. All participants were diagnosed with ASD, thus sensitivity and specificity analyses could not be conducted. Furthermore, due to the different classification systems of the diagnostic tools, diagnostic categories were dichotomized (i.e., no ASD diagnosis and ASD diagnosis), meaning that these results cannot speak to the agreement of these measures for specific levels of ASD symptom severity.

Learning objectives include the need to critically evaluate the assessment measures selected, as well as the relationship of child characteristics (i.e., IQ and adaptive behaviour) with various assessment and diagnostic methods. The topic of this poster is pertinent to Psychologists practicing in Ontario, given that funding and eligibility for services are highly dependent on diagnosis. Therefore, it is concerning that there is not high agreement among various diagnostic measures, which may impact accessibility to suitable treatments or interventions. With inconsistencies amongst measures, clinical judgment is required more than ever when making the diagnosis of ASD.