



Autism Spectrum Disorder: Will a Shift in Understanding Lead to a Shift in Treatment?

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ABSTRACT

DSM-5 defines an ASD diagnosis as having deficits in social communication and interaction and requires an excess of repetitive behaviors. This literature reviews a new way of understanding ASD within the research community and the literature on two treatments. A description of methodology for researching the article is provided. This is followed by a description of a new way of understanding ASD as more than just a disorder but also an advantage and descriptions of 2 treatments: ABA and DIR. The literature review ends with a discussion of future research opportunities.

Keywords: Autism Spectrum Disorder, DIR/Floortime, ABA, Intelligence

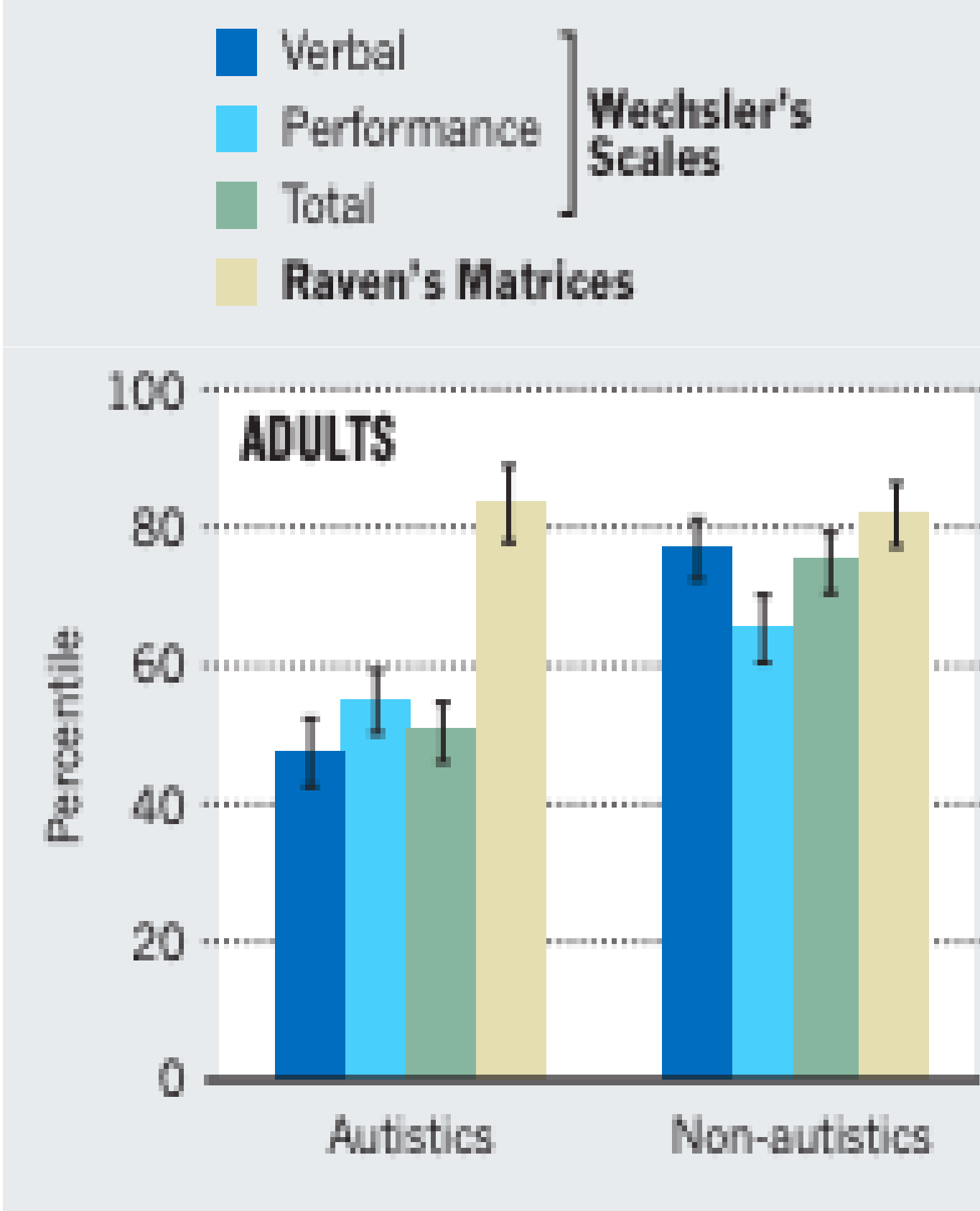
INTRODUCTION

- Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by deficits in social communication and interaction and requires repetitive behaviors. Neurodevelopmental Disorders “typically manifest early in development, often before the child enters grade school, and are characterized by developmental deficits that produce impairments of personal, social, academic, or occupational functioning.” ASD’s etiology is still unresolved, and it is often described as heterogeneous with different etiologies. Study of ASD is particularly important in light of the dramatic 344% increase of prevalence over the last 20 years. ASD has a prevalence of 2.3% in the general population and is 4 times as likely to occur in men as women.

- This article explores a new way of understanding ASD within the research community and describes the literature on two treatments. A description of methodology for researching the article is provided. This is followed by a description of a new way of understanding ASD as more than just a disorder but also an advantage and descriptions of two treatments: ABA and DIR. The literature review ends with a discussion about how the two treatments discussed align with the new way of understanding autism. Future research opportunities are also discussed.

AUTISTIC INTELLIGENCE

Non-autistics typically perform equally well in tests of verbal and non-verbal intelligence. Autistics, however, score much higher in non-verbal tests, such as Raven’s Matrices, than in verbal ones, such as Wechsler’s Scales.



METHODS

•The literature for this article was found with searches in APA Psych Info and PubMed. The following key words were used: (autism OR asd OR “autism spectrum disorder” OR autistic) AND (ABA OR “applied behavior analysis” OR “DIR Floor Time” OR floortime OR DIRFloortime OR “DIR/floortime” OR “D.I.R.” OR “Intelligence”) AND (measurement OR outcomes OR milestones). Articles prior to 2007 were excluded and no exceptions were made to this parameter.

RESULTS

- Autism Spectrum Disorder (ASD) is characterized by persistent deficits in social communication and interaction including: (1) deficits in social-emotional reciprocity, (2) deficits in nonverbal communicative behaviors and (3) deficits in developing, maintaining and understanding relationships. An ASD diagnosis also requires an excess of repetitive behavior, interests or activities. Diagnoses can be categorized by severity on a 1-3 scale based on deficits of social communication and repetitive behaviors. Diagnoses can also be categorized by with or without intellectual impairment. Approximately 1 in 44 children (2.3%) has been diagnosed with ASD and it is 4 times as likely in boys than girls. The prevalence rate has risen dramatically (344%) over the last 20 years.

- During these last 20 years, a shift in perspective on ASD has begun within some parts of the research and treatment communities. Historically, ASD research and treatment has primarily been rooted in the assumption that ASD is a ‘devastating disorder’ only to be associated with shortcomings and disadvantages. But some researchers have found that ASD should be considered an advantage that is also associated with superior capabilities in some areas.

-According to an article published in Nature in November of 2011, we should stop “considering the different brain structure of autistic individuals to be a deficiency, as research reveals that many autistics -- not just “savants” -- have qualities and abilities that may exceed those of people who do not have the condition.” In the same article, Mottron explains a study in which he conducted verbal and non-verbal intelligence tests (Raven’s Matrices) for autistic and non-autistic individuals and determined that autistic adults scored a little higher than non-autistics on the non-verbal test. He uses the compelling comparison that we would not want to test the intelligence of a deaf person with auditory stimuli, nor a blind person with visual stimuli and so too we should not test the intelligence of an autistic person with stimuli that they do not process in the same way.

- Mottron of course acknowledges that autistics do struggle with social pragmatic communication and with repetitive behaviors in the same way deaf people struggle to hear and blind people to see. He says they generally perform poorly in people-oriented fields. But he also believes that many autistics are particularly well suited to the sciences and “from a young age, they may be interested in information and structures...the basis of scientific thinking. Their intense focus can lead them to become self-taught experts in scientific topics. Mottron states that his research group and others believe that autism should be described and investigated as a variant within the human species. These variations in gene sequence or expression may have adaptive or maladaptive consequences, but they cannot be reduced to an error of nature that should be corrected.

Bernard J. Crespi published an article in June of 2016 in Frontiers of Neuroscience that supports this same new way of understanding Autism. In the article, titled *Autism as a Disorder of High Intelligence*, Crespi echoes Mottron when he explains how “Autism has long been characterized by relatively low intelligence as measured by most standard tests (e. g., Hoekstra et al., 2009). However, a suite of recent studies, described in more detail below, has demonstrated that alleles “for” autism,

that is, common alleles that each contributes slightly to its risk, overlap substantially and significantly with alleles “for” high intelligence. Crespi’s article describes how four separate studies have all reported significant, substantial genetically-based positive associations of autism risk with intelligence”

Treatments

- This evolution of perspective on ASD is important as it sheds light on the different treatment options. In addition to supporting autistics with their social communication and repetitive behaviors, we should also be “emphasizing the abilities and strengths...deciphering how autistics learn and succeed in natural settings and avoiding language that frames autism as a deficit to be corrected”

- There is a wide variety of treatment options for ASD. On one side there is the most common treatment - Applied Behavior Analysis (ABA) which is a behavioral approach based on learning theory and operant conditioning championed by Dr. Ole Ivar Lovaas’s 1987 study (Pajareya and Nopmaneejumruslers, 2011, p. 2). On the other side of the continuum “there are social-pragmatic approaches that are based on typical child development (Rogers and Lewis, 1989; Greenspan and Wieder 1997; Gutstein and Sheely, 2002; Mahoney and Perales, 2003)” (Pajareya and Nopmaneejumruslers, 2011, p. 2). An increasingly popular social-pragmatic approach is Developmental, Individual-Difference, Relationship-Based (DIR)/Floortime which was developed by Dr. Stanley Greenspan.

Applied Behavior Analysis (ABA)

- ABA has been one of the dominant treatments for autistic children for over 50 years. It has been empirically researched and is considered an evidence-based treatment (EBT). ABA generally involves 40 hours/week of intervention using repetitive tasks “where an adult determines the focus and goals of the intervention” It initially involved both positive reinforcement and punishments in Lovaas’ 1987 study. Now ABA intervention often uses extinction instead of punishments which essentially means no responses are given to the undesired behavior or “ignoring” the undesired behavior. ABA is the most widely used treatment for ASD and it has been studied extensively. “This is exemplified in the thousands of studies that have demonstrated positive outcomes of ABA-based interventions and procedures for autistics/ individuals diagnosed with ASD.”

Concerns about ABA

- There has been some criticism of the validity of ABA studies including “a number of critiques [focusing] on problems both with the internal and external validity of the Lovaas (1987) study. Similarly, there have been concerns raised over other forms of punishments that have been used in ABA. Extinction has often replaced punishments in modern ABA practice. There have also been significant criticisms of the methods used in ABA. Some have even leveled criticisms that ABA is abusive and causes PTSD in children. “There are two notable examples of peer-reviewed publications that appear to provide support for claims that ABA based interventions are abusive or cause PTSD.

- There have also been many concerns raised about the desired outcomes of ABA and its goal setting. Many feel that the intention of “achieving neurotypical behavior” or “curing autistic behavior” involves setting out to fundamentally change the autistic individual’s personality and they feel that is wrong. This last concern relates directly to the shift in perspective advocated by Mottron. Mottron and like-minded researchers directly disagree with this ABA goal of neurotypical behavior.

individual’s personality and they feel that is wrong. This last concern relates directly to the shift in perspective advocated by Mottron. Mottron and like-minded researchers directly disagree with this ABA goal of neurotypical behavior.

Developmental, Individual-Difference, Relationship-Based

- Developmental, Individual-Difference, Relationship-Based DIR/Floortime is a child led technique that places an emphasis on relationships, social-pragmatic interaction, and spontaneous use of language. “The integrated model of human development includes interaction with caregivers and the environment, biological, motor and sensory differences, and the child’s functional emotional developmental capacities” DIR therapists often teach caregivers to get down on the floor and interact with children at their level.

- “In addition to the study of 200 children with ASD (Greenspan and Wieder, 1997), there have been more recent studies which have used a relationship-based approach incorporating the fundamentals of the DIR/Floortime model. These studies demonstrate positive results for children with ASD. However, the biggest challenge with the studies based on the DIR/Floortime model is the absence of a control group” .

Concerns about DIR

- The primary concern about DIR is that it cannot yet be considered an “evidenced based treatment (EBT). While there have been some randomized trials, these trials have been limited by design flaws, in particular that none of them have compared DIR by itself to a control group with an alternative therapy. Instead DIR has always been an add-on therapy in addition to another therapy and compared with the control group having only that other therapy. So the control group has always had significantly less therapy hours.

DISCUSSION

The literature suggests that a part of the research community does seem to be shifting the understanding of ASD. However, the studies on social pragmatic approaches that align with this shift are not sufficient to justify a paradigm shift in treatment. Further research should be conducted on DIR/Floortime including properly designed randomized trials to investigate whether this treatment can indeed better achieve the goals as defined by the new way of understanding. Also, additional research should be done to support the new way of understanding, particularly on the intelligence levels of autistics when measured by non-verbal tests such as the Raven’s Matrices.

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