

RECOMMENDED ACADEMIC READING (RAR)

Autism

RAR focuses on autism this issue. We thank our autism experts for bringing to our attention these recent critical articles in the expansive field of autism. We encourage you to read the pitches for each of the suggested papers and follow up those that most capture your interest.

Dr. Danielle Baribeau's recommended reading is an article by Martini et al., published in *JAMA Psychiatry* in October 2022 (1). This population-based cohort study examined administrative health data from all individuals in Sweden (n = 1.3 million). The authors studied the association between autism, biological sex, and mental health outcomes in young adulthood, hypothesizing that autistic female individuals may be at elevated risk for mental health concerns. I appreciated their intuitive figures summarizing rates of different mental health diagnoses across Sweden, for autistic and non-autistic males and female (which could be useful for teaching slides). They also report psychiatric hospitalization rates by age 25, which were strikingly high for autistic females (32 of 100). I found this article interesting for several reasons. First, the authors and journal used identity first language in autism (e.g., “autistic female individual”) as opposed to person-first language (e.g., “female with autism”), in line with the expressed preferences of many members of the autistic community (2). Second, data highlight the pressing need for profound mental health supports for autistic youth, extending into early adulthood, which can help guide the redesign and crosstalk of developmental and mental healthcare pathways. Third, the authors include some discussion on multiple minority theory (impact of being autistic and non-male) as well as social camouflaging as they relate to distress. Fourth, data prompt consideration as to whether “co-occurring psychiatric disorder” is the most appropriate formulation for distress and mental health symptoms in autism, given the markedly high prevalence (e.g., 77 out of 100 females).

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2. Bury, S. M., Jellett, R., Spoor, J. R., & Hedley, D. (2020). “It defines who I am” or “It’s something I have”: What language do [autistic] Australian adults [on the autism spectrum] prefer?. *Journal of Autism and Developmental Disorders*, 1-11. <https://pubmed.ncbi.nlm.nih.gov/32112234/>

Dr. Isabel Smith recommends a Viewpoint in *JAMA Pediatrics* by Dawson and colleagues (1). Those of us with many years in the field of autism, whether in clinical and/or research roles, have grappled with the evolving conceptualization of autism. A major shift has led to the current understanding of autism as a neurodevelopmental condition independent of levels of intellectual and language abilities. From this perspective, autism’s cognitive and behavioural manifestations represent a continuum and reflect ‘neurodiversity’, a term coined in 1999. From this perspective, varying degrees of impairment for autistic people are attributed to person - environment fit. In parallel with the growing neurodiversity movement, autistic self-advocates increasingly participate in public discourse concerning autism services and research. Topics such as intervention in early childhood have become contentious, with objections to the aim of “curing” autism versus accepting being autistic as a neurodivergent identity. Some criticisms of early interventions include treatment targets such as increasing eye contact, and methods such as discrete trial training

that may promote rote learning, both associated with Ivar Lovaas' original intensive behavioural treatment. Dawson and her co-authors succinctly outline concerns raised by the neurodiversity movement and clarify how the aims and approaches of contemporary early behavioural interventions may align with this perspective. Readers might also be interested in two letters to the editor commenting on the article (2,3) and Dawson et al.'s response (4). Awareness of the issues raised by these articles may help us to guide parents who are considering what services to seek for their young autistic children.

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2. Eigsti I-M, Girolamo T, Fein D. Comment & Response: Neurodiversity and early autism. *JAMA Pediatr.* Published Online: October 31, 2022. doi:10.1001/jamapediatrics.2022.4141 <https://pubmed.ncbi.nlm.nih.gov/36315139/>
3. Bernard S, Grosjean B, Caravallah L. Comment & Response: Neurodiversity and early autism. *JAMA Pediatr.* Published Online: October 31, 2022. doi:10.1001/jamapediatrics.2022.414 <https://pubmed.ncbi.nlm.nih.gov/36315119/>
4. Dawson G, Franz L, Brandsen S. Comment & Response: In reply. Published Online: October 31, 2022. doi:10.1001/jamapediatrics.2022.4147 <https://pubmed.ncbi.nlm.nih.gov/36315161/>

Dr. Conner Kerns' recommended reading is by Vivanti and Messinger (2021) (1). This article considers how the purely behavioral definition of autism, first introduced in DSM III, set the stage for evolving theories regarding how to conceptualize autism and approach treatment from the 1980s to the present moment. In telling this history, the authors offer many compelling illustrations of how explanatory theories of autism and its origins have shaped not only intervention targets and approaches, but also whether interventions could or should be an aspiration. The authors highlight the way these theories (regardless of their veracity) have advanced autism intervention research by generating novel approaches and testable hypotheses. They also illustrate how these theories have contributed to ongoing debates and impasses in the field (e.g., what autism treatments

are evidence-based) by inspiring disparate methods, principles, and criteria for evaluating evidence (not only different intervention strategies). In sum, Vivanti and Messinger (2021) remind us that how we conceptualize autism and, particularly, theorize about its origins and underlying mechanisms, directly relates to how and what we choose to treat in autistic individuals. At a time when the legitimacy of intervening to change autistic behaviours is itself under scrutiny, understanding this history may be useful.

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Dr. Teresa Bennett recommends a paper by Wood and colleagues describing a randomized controlled trial (RCT) evaluating two cognitive behavioural therapy (CBT) models for treating anxiety, comparing them to treatment as usual (TAU), in a sample of 214 children with autism spectrum disorder (ASD, or autism) aged 7-13 years with an IQ of 70 or more (1). The first intervention arm comprised evidence-based standard-of-care CBT, the "Coping Cat" program. The second intervention, Behavioral Interventions for Anxiety in Children with Autism (BIACA), included the same core CBT elements plus autism-specific adaptations in a somewhat longer, more intensive, and tailored program which is outlined by the authors.

Autistic children and teens who participated in the standard CBT treatment demonstrated significantly improved anxiety symptoms and related functioning compared to treatment as usual. Adapted CBT (BIACA intervention) conferred additional advantages over standard CBT, and larger-sized improvements over treatment as usual, including significant gains in secondary outcomes such as social communication.

This study is the first to compare a scalable, adapted CBT-anxiety intervention to a more widely accessible standard-of-care CBT and treatment as usual, in an elegant and adequately powered RCT. Autism spectrum disorder

is common (~1 in 59) (2), and over 20% of autistic children and youth experience comorbid anxiety disorders (3). Psychiatrists should therefore advocate for the inclusion of tailored, evidence-based CBT for autistic children and youth and, where there are gaps in specialized developmental mental healthcare, ensure that these children can also access mainstream CBT. The authors include a link to free CBT training and resources: <https://meya.ucla.edu/>.

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3. Lai MC, Kasseh C, Besney R, Bonato S, Hull L, Mandy W, Szatmari P, Ameis SH. Prevalence of co-occurring mental health diagnoses in the autism population: a systematic review and meta-analysis. *The Lancet Psychiatry*. 2019 Oct 1;6(10):819-29. <https://pubmed.ncbi.nlm.nih.gov/31447415/>

Dr. Lonnie Zwaigenbaum recommends a paper by Parelleda and colleagues (1). The authors of this systematic review examined published evidence from Autism Spectrum Disorder (ASD) studies that included biomarkers that were correlated with relevant behavioral indices (e.g., ASD symptom scores). ‘Biomarkers’ were defined as objective and quantifiable metrics of clinically relevant processes, including molecular, physiological and anatomical. A total of 280 articles met criteria for inclusion, reporting on a total of

940 biomarkers. These biomarkers were divided into three broad categories: molecular (e.g., glutathione, serotonin), neuroimaging and neurophysiological (e.g., functional MRI, EEG, eye tracking), and a small number of other modalities (e.g., heart rate). Although the goal of the review was to identify biomarkers that could potentially be used as response variables in intervention trials, only 53 of the 280 included papers reported on such trials, including 20 with randomized designs.

Almost all of the reviewed studies were only powered to identify large effect sizes, and heterogeneous analytic methods and incomplete statistical reporting precluded mega- and meta-analyses, even for those 12 biomarkers assessed in multiple studies. The number of reported positive associations despite minimal replication was suggestive of publication bias but could not be formally assessed based on limited available data. There was also inadequate correction for multiple comparisons in many studies.

The authors concluded that while there have been advances in understanding the neurobiology of ASD, this has not yet led to generation of evidence that any specific biomarker would be informative as an outcome measure in an interventional trial. They made several recommendations for future research including greater collaboration to promote consistent methodologies and larger cohorts, and wider data sharing to accelerate progress.

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