Comprehensive Update on Autism Spectrum Disorder: What School Psychologists Need to Know

Sam Goldstein, Ph.D.
Assistant Clinical Professor
University of Utah School of Medicine
Clinical Director
Neurology, Learning and Behavior Center

www.samgoldstein.com
info@samgoldstein.com
@drsamgoldstein
@doctorsamgoldstein

ISPA 2021

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Relevant Disclosure

- Co-author of the Autism Spectrum Rating Scales (MHS, 2009).
- Co-author of Assessment of Autism Spectrum Disorders 1st and 2nd Editions (Guilford, 2009, 2018).
- Co-author/presenter Assessment of Autism Spectrum Disorders CEU (APA, 2009).
- Co-author of Raising a Resilient Child With Autism Spectrum Disorders (2011, McGraw Hill).
- Co-author of Treatment of Autism Spectrum Disorders (2012, Springer).
- Co-author of the Autism Spectrum Evaluation Scales (in development, MHS).

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Learning Objectives

- (1) Learn about the history of autism. Learn about the evolution of the diagnostic protocols for autism. Learn about the basic social learning problems characteristic of autism.
- (2) Learn about the process of assessment, including behavioral observation, completion of rater questionnaires and face-to-face assessment.
- (3) Learn to utilize a diagnostic protocol for making the diagnosis of autistic disorders. Learn about current treatment strategies for autism.
- (4) Learn about the variables that predict positive outcome based on recent research for a select group of autistic individuals.
- (5) Learn the research examining similarities and differences between children with autism and those with related conditions, including ADHD, communication disorders, learning disorders, schizophrenia and non-verbal learning disability.
- (6) Learn about current trends and methods in treatment and education.

3

What is ASD?

- Kanner, together with Hans Asperger, initiated the modern study of autism.
- He introduced the label *early infantile autism* in 1943 in his paper : Kanner, L. (1943). Autistic disturbances of affective contact. *Nervous Child, 2,* 217-250.

Leo Kanner

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What is ASD?

- Inability to relate to others
- Disinterest in parents and people
- Language difficulties
- fascination with inanimate objects
- Resistance to change in routine
- Purposeless repetitive movements
  - A wide range of cognitive skills
  - Where they possess an innate inability for emotional contact

Leo Kanner

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Lorna Wing

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6

My Folks and I
(circa 1973)

7

Part I
We are Social Beings

8

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What Benefits Do We Derive From Socialization?

- Support
- Survival
- Affiliation
- Pleasure
- Procreation
- Knowledge
- Friendship

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The social development of autistic children is qualitatively different from other children.

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In normal children perceptual, affective and neuroregulatory mechanisms predispose young infants to engage in social interaction from very early on in their lives. They must in order to maximize chances of survival.

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Socialization Begins Early:
Reina and Her Mother

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When we look at babies our brain responds uniquely.

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Adrian, my seatmate on a recent flight.

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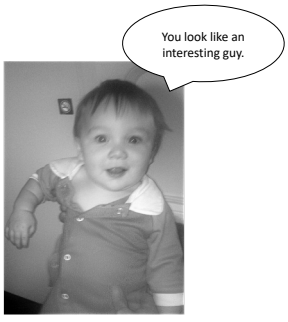
Adrian



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Adrian

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Pointing

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Observing

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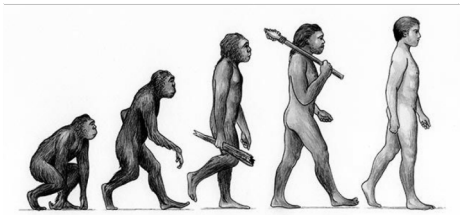
Part II
Where are Autism's Roots?



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Where are Autism's Roots?

- In the bible?
- In ancient cultures?
- In history?
- In religion?
- Portrayed in art?

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Les âges de l'ouvrier

Léon FRÉDÉRIC 1895

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Is this child portrayed as autistic?

23

Which woman is her mother?

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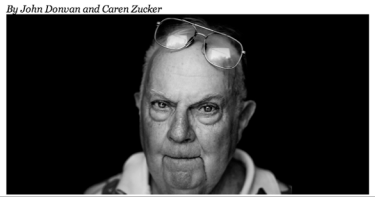
Autism's First Child

AS NEW CASES OF AUTISM HAVE EXPLODED IN RECENT YEARS—SOME FORM OF THE CONDITION AFFECTS ABOUT ONE IN 110 CHILDREN TODAY—EFFORTS HAVE MULTIPLIED TO UNDERSTAND AND ACCOMMODATE THE CONDITION IN CHILDHOOD. BUT CHILDREN WITH AUTISM WILL BECOME ADULTS WITH AUTISM, SOME 500,000 OF THEM IN THIS DECADE ALONE. WHAT THEN? MEET DONALD GRAY TRIPLETT, 77, OF FOREST, MISSISSIPPI. HE WAS THE FIRST PERSON EVER DIAGNOSED WITH AUTISM. AND HIS LONG, HAPPY, SURPRISING LIFE MAY HOLD SOME ANSWERS.

By John Donvan and Caren Zucker



Atlantic Monthly, October 2010

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Part III
A Brief Research Update

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Psychiatric comorbidity in autism spectrum disorder: Correspondence between mental health clinician report and structured parent interview

This study (1) examined correspondence between psychiatric diagnoses reported by mental health clinicians and those derived from a structured diagnostic interview and (2) identified predictors of agreement between clinician-reported and diagnostic interview-derived diagnoses in a sample of 197 children aged 4–14 years with autism spectrum disorder receiving mental health services.

Cohen's kappa was calculated to examine agreement between Mini-International Neuropsychiatric Interview, parent version and clinician-reported diagnoses of comorbid conditions. Children met criteria for an average of 2.83 (standard deviation = 1.92) Mini-International Neuropsychiatric Interview, parent version diagnoses. Agreement was poor across all diagnostic categories
(κ values: 0.06–0.18).

Results underscore the need for training mental health clinicians in targeted assessment of specific psychiatric disorders and prioritizing treatment development and testing for specific diagnoses to improve care for children with autism spectrum disorder served in publicly funded mental health settings.

https://doi.org/10.1177/1362361316654083

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Autism spectrum disorders and their treatment with psychotropic medications in a nationally representative outpatient sample: 1994–2009

Rates of visits with coded-ASD per 100 outpatient medical visits increased from 0.04% to 0.82% from 1994 to 2009. Factors associated with an ASD diagnosis included male gender, lack of private insurance, white race, and later study period. The most frequent comorbid behavioral diagnoses were ADHD, anxiety, disruptive behavior, and mood disorders. Older age was linked to an increased likelihood of having a comorbid behavioral diagnosis and using psychotropic medications. Geographic region was also associated with having a comorbid behavioral diagnosis, and psychotropic use was linked to have a behavioral comorbidity. Comorbidities with the highest rates of psychotropic use were ADHD, mood, and anxiety disorders.

Conclusions

Pediatric outpatient visits with an ASD diagnosis have increased dramatically from 1994 to 2009. Further study is needed to determine the reasons for the observed disparities in ASD diagnosis.

Journal of the American Academy of Child & Adolescent Psychiatry
Volume 27, Issue 7, July 2017, Pages 448-453.e1

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Use of complementary and alternative medicine in children and adolescents with autism spectrum disorder: A systematic review

Despite limited evidence, complementary and alternative medicine treatments are popular in autism spectrum disorder. The aim of this review was to summarize the available evidence on complementary and alternative medicine use frequency in autism spectrum disorder. A systematic search of three electronic databases was performed. All research studies in English or German reporting data on the frequency of complementary and alternative medicine use in individuals with autism spectrum disorder were included. Two independent reviewers searched the literature, extracted information on study design and results, and assessed study quality using an established quality assessment tool. Twenty studies with a total of 9540 participants were included. The prevalence of any complementary and alternative medicine use ranged from 28% to 95% (median: 54%). Special diets or dietary supplements (including vitamins) were the most frequent complementary and alternative medicine treatments, ranking first in 75% of studies. There was some evidence for a higher prevalence of complementary and alternative medicine use in autism spectrum disorder compared to other psychiatric disorders and the general population. Approximately half of children and adolescents with autism spectrum disorder use complementary and alternative medicine. Doctors should be aware of this and should discuss complementary and alternative medicine use with patients and their carers, especially as the evidence is mixed and some complementary and alternative medicine treatments are potentially harmful.

Autism, Published May 25, 2016

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Social Skills Training for Children and Adolescents With Autism Spectrum Disorder: A Randomized Controlled Trial

Social skills group training (SSGT) for children and adolescents with autism spectrum disorder (ASD) is widely applied, but effectiveness in real-world practice has not yet been properly evaluated. This study sought to bridge this gap.

This 12-week pragmatic randomized controlled trial of SSGT compared to standard care alone was conducted at 13 child and adolescent psychiatry outpatient units in Sweden. Twelve sessions of manualized SSGT ("KONTAKT") were delivered by regular clinical staff. Participants (N = 296; 88 females and 208 males) were children (n = 172) and adolescents (n = 124) aged 8 to 17 years with ASD without intellectual disability. The primary outcome was the Social Responsiveness Scale rating by parents and blinded teachers. Secondary outcomes included parent- and teacher-rated adaptive behaviors, trainer-rated global functioning and clinical severity, and self-reported child and caregiver stress. Assessments were made at baseline, posttreatment, and 3-month follow-up. Moderator analyses were conducted for age and gender.

Significant treatment effects on the primary outcome were limited to parent ratings for the adolescent8.9; 95% CI = −16.2 to −1.6; p = .019, ES = 0.40). Secondary outcomes indicated moderate effects on adaptive functioning and clinical severity.

Conclusion

SSGT for children and adolescents with ASD in regular mental health services is feasible and safe. However, the modest and inconsistent effects underscore the importance of continued efforts to improve SSGT beyond current standards.

Journal of the American Academy of Child & Adolescent Psychiatry
Volume 56, Issue 7, July 2017, Pages 585-592

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Can findings from randomized controlled trials of social skills training in autism spectrum disorder be generalized? The neglected dimension of external validity

Systematic reviews have traditionally focused on internal validity, while external validity often has been overlooked. In this study, we systematically reviewed determinants of external validity in the accumulated randomized controlled trials of social skills group interventions for children and adolescents with autism spectrum disorder. We extracted data clustered into six overarching themes: source population, included population, context, treatment provider, treatment intervention, and outcome. A total of 15 eligible randomized controlled trials were identified. The eligible population was typically limited to high-functioning school-aged children with autism spectrum disorder, and the included population was predominantly male and Caucasian. Scant information about the recruitment of participants was provided, and details about treatment providers and settings were sparse. It was not evident from the trials to what extent acquired social skills were enacted in everyday life and maintained over time. We conclude that the generalizability of the accumulated evidence is unclear and that the determinants of external validity are often inadequately reported. At this point, more effectiveness-oriented randomized controlled trials of equally high internal and external validity are needed. More attention to the determinants of external validity is warranted when this new generation of randomized controlled trials are planned and reported.

Autism, First Published May 11, 2015

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Does sex influence the diagnostic evaluation of autism spectrum disorder in adults?

This study reports sex differences in clinical outcomes for 1244 adults (935 males and 309 females) referred for autism spectrum disorder assessment. Significantly, more males (72%) than females (66%) were diagnosed with an autism spectrum disorder of any subtype ($x2 = 4.09$; $p = 0.04$).

Males had significantly more repetitive behaviors/restricted interests than females ($p = 0.001$, $d = 0.3$). A multivariate analysis of variance indicated a significant interaction between autism spectrum disorder subtype (full-autism spectrum disorder/partial-autism spectrum disorder) and sex: in full-autism spectrum disorder, males had more severe socio-communicative symptoms than females; for partial-autism spectrum disorder, the reverse was true.

There were no sex differences in prevalence of co-morbid psychopathologies. The sexes may present with different manifestations of the autism spectrum disorder phenotype and differences vary by diagnostic subtype. Understanding and awareness of adult female repetitive behaviors/restricted interests warrant attention and sex-specific diagnostic assessment tools may need to be considered.

https://doi.org/10.1177/1362361315611381

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Telehealth delivery of cognitive-behavioral intervention to youth with autism spectrum disorder and anxiety: A pilot study

This study details the pilot testing of a telehealth version of an empirically supported intervention targeting anxiety in youth with autism spectrum disorders. The primary focus of this study was on feasibility, with evaluation of outcomes as a starting point for future randomized trials. In all, 33 families of youth with autism spectrum disorders and significant anxiety symptoms participated in this study
(Telehealth Facing Your Fears (FYF) Intervention: n = 17; Wait-list control: n = 16). Youth of all functioning levels were included. Acceptability was strong; however, the usability of the technology was problematic for some families and impeded some sessions significantly. Fidelity of the telehealth version to the critical elements of the original, in vivo version was excellent. More work is needed to improve delivery of exposure practices and parent coaching. Preliminary efficacy analyses are promising, with improvements observed in youth anxiety over time (relative to a comparison group waiting for live intervention) and parent sense of competence (within group). Clearly, stronger designs are necessary to evaluate efficacy sufficiently; however, this study does provide support for further investigation of clinic-to-home videoconferencing as a direct intervention tool for youth with autism spectrum disorders and their parents.

https://doi.org/10.1177/1362361315575164

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Open-trial pilot study of a comprehensive outpatient psychosocial treatment for children with high-functioning autism spectrum disorder

This study examined the feasibility and initial outcomes of a comprehensive outpatient psychosocial treatment (MAXout) for children aged 7–12 years with high-functioning autism spectrum disorder. The 18-week treatment, two 90-minute sessions per week, included instruction and therapeutic activities targeting social/social communication skills, facial emotion recognition, non-literal language skills, and interest expansion.

A behavioral system was implemented to reduce autism spectrum disorder symptoms and problem behaviors and increase skills acquisition and maintenance. Feasibility was supported via high levels of treatment fidelity and parent, child, and staff satisfaction. Significant post-treatment improvements were found for the children's non-literal language skills and facial emotion recognition skills, and parent and staff clinician ratings of targeted social/social communication skills, broad social skills, autism spectrum disorder symptoms, and problem behaviors.

Results suggested that MAXout was feasible and may yield positive outcomes for children with high-functioning autism spectrum disorder.

https://doi.org/10.1177/1362361316630201

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The mental health of individuals referred for assessment of autism spectrum disorder in adulthood: A clinic report

High rates of mental health problems have been reported in young people and adults with autism spectrum disorder. However, sampling and methodological issues mean prevalence estimates and conclusions about specificity in psychiatric co-morbidity in autism spectrum disorder remain unclear.

A retrospective case review of 859 adults referred for assessment of autism spectrum disorder compares International Classification of Diseases, Tenth Revision diagnoses in those that met criteria for autism spectrum disorder (n = 474) with those that did not (n = 385). Rates of psychiatric diagnosis (>57%) were equivalent across both groups and exceeded general population rates for a number of conditions.

The prevalence of anxiety disorders, particularly obsessive compulsive disorder, was significantly higher in adults with autism spectrum disorder than adults without autism spectrum disorder. The implications of this study highlight the need for careful consideration of mental health needs in all adults referred for autism spectrum disorder diagnosis.

https://doi.org/10.1177/1362361315604271

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Effects of an employer-based intervention on employment outcomes for youth with significant support needs due to autism

The purpose of this study was to develop and investigate an employer-based 9-month intervention for high school youth with autism spectrum disorder to learn job skills and acquire employment. The intervention modified a program titled Project SEARCH and incorporated the use of applied behavior analysis to develop Project SEARCH plus Autism Spectrum Disorder Supports.

A randomized clinical trial compared the implementation of Project SEARCH plus Autism Spectrum Disorder Supports with high school special education services as usual. Participants were 49 high-school-aged individuals between the ages of 18 and 21 years diagnosed with an autism spectrum disorder and eligible for supported employment. Students also had to demonstrate independent self-care. At 3 months post-graduation, 90% of the treatment group acquired competitive, part-time employment earning US$9.53–US$10.66 per hour. Furthermore, 87% of those individuals maintained employment at 12 months post-graduation. The control group's employment outcomes were 6% acquiring employment by 3 months post-graduation and 12% acquiring employment by 12 months post-graduation. The positive employment outcomes generated by the treatment group provide evidence that youth with autism spectrum disorder can gain and maintain competitive employment.

ttps://doi.org/10.1177/1362361316635826

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Employment programs and interventions targeting adults with autism spectrum disorder: A systematic review of the literature

In this systematic review, empirical peer-reviewed studies on employment programs, interventions and employment-related outcomes in individuals with autism spectrum disorder over 18 years with and without intellectual disability were identified and evaluated.

From 32,829 records identified in the initial search, 10 review and 50 empirical articles, comprising N = 58,134 individuals with autism spectrum disorder, were included in the review. Selected articles were organized into the following themes: employment experiences, employment as a primary outcome, development of workplace skills, non-employment-related outcomes, assessment instruments, employer-focused and economic impact. Empirical studies were limited by poor participant characterization, small sample size and/or a lack of randomization and use of appropriate controls. Poor conceptualization and measurement of outcomes significantly limited study quality and interpretation.

Future research will require a multidisciplinary and multifaceted approach to explore employment outcomes on the individual, the family system, co-workers and the employer, along with the impact of individual differences on outcome.

https://doi.org/10.1177/1362361316661855.

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Some people with autism have abnormalities at a specific site on the 16th chromosome known as 16p11.2. Deletion or duplication of a small piece of chromosome at this site is one of the most common identified genetic causes of autism spectrum disorder.

MRI reveals striking brain differences in people with genetic autism
August 8, 2017
Radiological Society of North America

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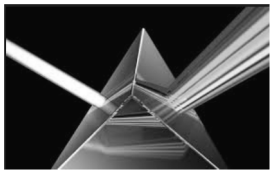
Part IV
Spectrum Versus Continuum



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Autism is increasingly referred to as a spectrum disorder in which individuals can present problems ranging from total impairment to near reasonable functioning.

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In a Spectrum Disorder genetic and phenotypic factors predispose certain individuals to express certain Central Nervous System vulnerabilities leading to poorly adapted variations in development and behavior.

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In a Spectrum Disorder all symptoms are considered relevant to the extent they present in each disorder. Thus a symptom is not exclusive to a disorder.

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The form that a Spectrum Disorder assumes is determined by its composite symptoms. These symptoms often have complex relationships.

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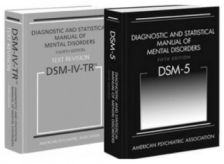
Part V
The DSM 5 Criteria



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DSM 5

- Combine social and communication categories.
- Tighten required criteria reducing the number of symptom combinations leading to a diagnosis.
- Omit Retts and Childhood Disintegrative Disorder.
- Clarify co-morbidity issues
- Eliminate PDD NOS and Aspergers in favor of Autism Spectrum.

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DSM 5

- Five criteria.
- Seven sets of symptoms in the first two criteria – Social/Communication and Restrictive/Repetitive behaviors, interests or activities.
- All three symptoms are required to meet the first criteria (although a typo omits this).
- Two out of four are needed for the second criteria.
- Some symptoms have been combined. Sensory sensitivity has been added.

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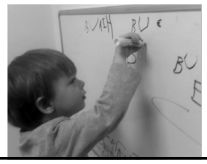
Core DSM and ICD Autistic Symptoms

- Impaired social relations.
- Impaired communication skills.
- Impaired behavior.



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Symptoms Present Before 24 Months: Failure To:

- Orient to name
- Attend to human voice
- Look at face and eyes of others
- Imitate
- Show objects
- Point
- Demonstrate interest in other children

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Symptoms Present Before 36 Months

- Use of other's body to communicate or as a tool
- Stereotyped hand/finger/body mannerisms
- Ritualistic behavior
- Failure to demonstrate pretend play
- Failure to demonstrate joint attention

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Meet Kevin

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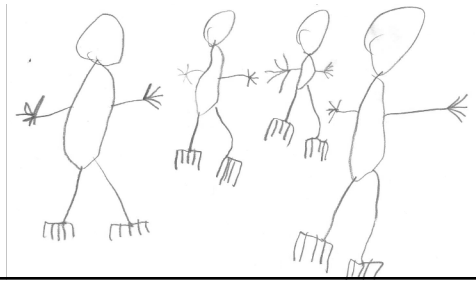
Kevin Draws His Family



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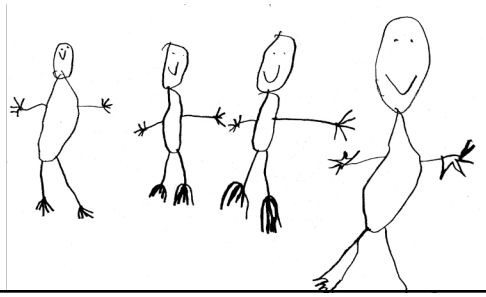
Kevin Adds Faces



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Young Children with Autism

- Have little interest in the human face.
- Lack differential preference for speech sounds.
- Lack imitative capacity.
- Lack interest in physical comfort.
- Don't attach to caretakers well.

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Symptoms Present Before 24 Months

Failure To:

- Orient to name
- Attend to human voice
- Look at face and eyes of others
- Imitate
- Show objects
- Point
- Demonstrate interest in other children

54

Symptoms Present Before 36 Months

- Use of other's body to communicate or as a tool
- Stereotyped hand/finger/body mannerisms
- Ritualistic behavior
- Failure to demonstrate pretend play
- Failure to demonstrate joint attention

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Joint Attention

- Behaviors that focus the attention of the self and others on the same object (e.g. pointing, sharing emotion, etc.)
- Develops between 6 and 9 months
- Precursor of more advanced social and communication skills

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Joint Attention

- This abnormality thought to be one of the earliest signs of autism
- Present in children with developmental delays absent autism
- This ability when present in preschoolers with autism predicts better prognosis for language development

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Pretend Play in Autism

- Limited, often absent
- When present usually characterized by: repetitive themes, rigidity, isolated acts, one-sided play, limited imagination.

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Theory of Mind

A line of research has proposed that the social deficits in autism represent a specific, innate cognitive capacity to attribute mental states to others and oneself and use these to explain and predict another person's behavior.

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Pretend Play in Autism

- Limited, often absent
- When present usually characterized by: repetitive themes, rigidity, isolated acts, one-sided play, limited imagination.

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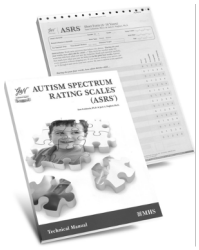
Part VI
A Statistically Derived Model of ASD



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Exploratory Factor Analysis for 2-5 Years

- A two-factor solution was best for parent and teacher raters
  - **Factor I:** included primarily items related to both socialization and communication (e.g., keep a conversation going, understand how someone else felt) - **Social/Communication**
  - **Factor II:** included items related to behavioral rigidity (e.g., insist on doing things the same way each time), stereotypical behaviors (e.g., flap his/her hands when excited), and overreactions to sensory stimulation (e.g., overreact to common smells)- **Unusual Behaviors**

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Exploratory Factor Analysis for 6-18 Years

- A three-factor solution was best for both parent and teachers versions of the ASRS
  - **Factor I:** included primarily items related to both socialization and communication -**Social/Communication**
  - **Factor II:** included items related to behavioral rigidity, stereotypical behaviors and overreactions to sensory stimuli - **Unusual Behaviors**
  - **Factor III**: included items related to attention problems (e.g., become distracted), impulsivity (e.g., have problems waiting his/her turn), and compliance (e.g., get into trouble with adults, argue and fight with other children) - **Self-Regulation**.

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Factor Consistency

- The consistency of the ASRS scale structure across several demographic groups (gender, age group, race, and clinical status) was studied
- The factor loadings for the groups were correlated using the coefficient of congruence
  - results revealed a very high degree of consistency between all groups
  - indicating that the factor structure of the forms generalized across the demographic groups

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Current View of ASD In ASRS

- Based on the factor analysis, we suggest that ASD is best described as having two clusters of behaviors for children ages 2-5 and three for those aged 6 to 18 years of age.
  - Ages 2 – 5 years
    - Social / Communication
    - Unusual Behaviors
  - Ages 6 – 18 years
    - Social / Communication
    - Unusual Behaviors
    - Self-Regulation
- This is the organizational form of the ASRS.

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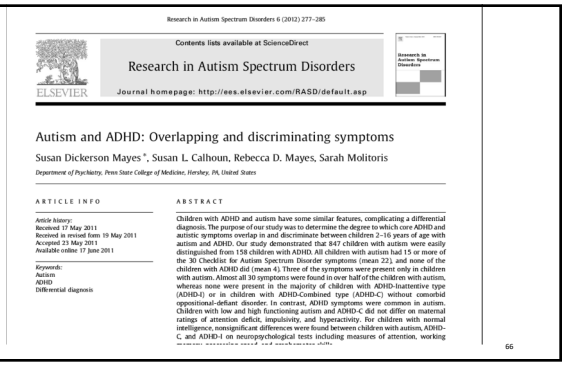

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Research in Autism Spectrum Disorders

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Autism and ADHD: Overlapping and discriminating symptoms

Susan Dickerson Mayes *, Susan L. Calhoun, Rebecca D. Mayes, Sarah Molitoris

Department of Psychiatry, Penn State College of Medicine, Hershey, PA, United States

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ABSTRACT

Children with ADHD and autism have some similar features, complicating a differential diagnosis. The purpose of our study was to determine the degree to which core ADHD and autistic symptoms overlap in and discriminate between children 2–16 years of age with autism and ADHD. Our study demonstrated that 847 children with autism were easily distinguished from 158 children with ADHD. All children with autism had 15 or more of the 30 Checklist for Autism Spectrum Disorder symptoms (mean 22), and none of the children with ADHD did (mean 4). Three of the symptoms were present only in children with autism. Almost all 30 symptoms were found in over half of the children with autism, whereas none were present in the majority of children with ADHD-Inattentive type (ADHD-I) or in children with ADHD-Combined type (ADHD-C) without comorbid oppositional–defiant disorder. In contrast, ADHD symptoms were common in autism. Children with low and high functioning autism and ADHD-C did not differ on maternal ratings of attention deficit, impulsivity, and hyperactivity. For children with normal intelligence, nonsignificant differences were found between children with autism, ADHD-C, and ADHD-I on neuropsychological tests including measures of attention, working

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This View is Well Supported by Current Research

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ASRS Validity

And an updated view of ASD

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Validity of the Factors

- Factor analysis is a valuable tool to understand how items group.
- But we also need to know if the items have validity.
- Discriminating children with ASD from the regular population is important.
- Discriminating children with ASD from those who are not in the regular population but not ASD is very important.

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ASRS Profiles

- A scale like the ASRS should differentiate children with ASD from the normal population.
- Comparison to regular children should show that those with ASDs have high scores.
- Comparisons to other clinical groups should also show differences from those with ASDs.
- Comparisons of the ASD to regular and other clinical samples gives an essential examination of validity .

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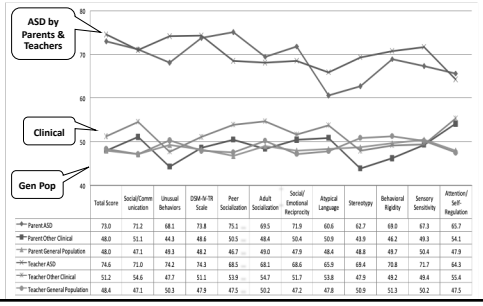
ASRS Validity for ages 2-5

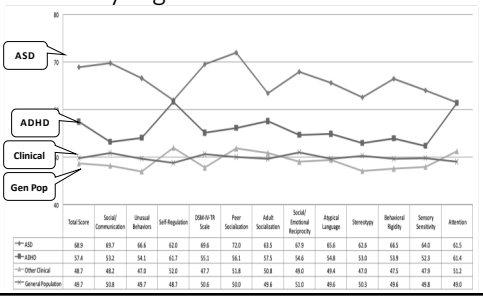


	Total Score	Social/Communication	Unusual Behaviors	DSM-IV-TR Scale	Peer Socialization	Adult Socialization	Social/ Emotional Reciprocity	Atypical Language	Stereotypy	Behavioral Rigidity	Sensory Sensitivity	Attention/ Self-Regulation
Parent ASD	73.0	71.2	68.1	73.8	75.1	69.5	71.9	60.6	62.7	69.0	67.3	65.7
Parent Other Clinical	48.0	51.1	44.3	48.6	50.5	48.4	50.4	50.9	43.9	48.2	49.3	54.1
Parent General Population	48.0	47.1	49.3	48.2	46.7	49.0	47.9	48.4	48.8	49.7	50.4	47.9
Teacher ASD	74.6	71.0	74.2	74.3	68.5	68.1	68.6	65.9	69.4	70.8	71.7	64.3
Teacher Other Clinical	51.2	54.6	47.7	51.1	53.9	54.7	51.7	53.8	47.9	49.2	49.4	55.4
Teacher General Population	48.4	47.1	50.3	47.9	47.5	50.2	47.2	47.8	50.9	51.3	50.2	47.5

71

71

ASRS Validity: Ages 6-18 Parents

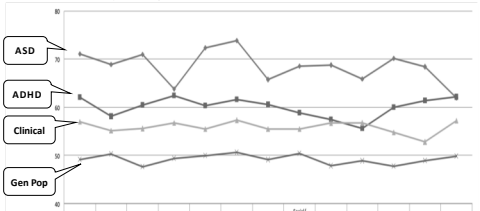


	Total Score	Social/ Communication	Unusual Behaviors	Self-Regulation	DSM-IV-TR Scale	Peer Socialization	Adult Socialization	Social/ Emotional Reciprocity	Atypical Language	Stereotypy	Behavioral Rigidity	Sensory Sensitivity	Attention
ASD	68.9	69.7	66.6	62.0	69.6	72.0	63.5	67.9	65.6	62.6	66.5	64.0	61.5
ADHD	57.4	53.2	54.1	61.7	55.1	56.1	57.5	54.6	54.8	53.0	53.9	52.3	61.4
Other Clinical	48.7	48.2	47.3	52.0	47.7	51.8	50.8	49.0	49.4	47.3	47.5	47.9	51.2
General Population	49.7	50.8	49.7	48.7	50.6	50.0	49.6	51.0	49.6	50.3	49.6	49.8	49.0

72

72

ASRS Validity: Ages 6-18 Teachers



	Total Score	Social/ Communication	Unusual Behaviors	Self-Regulation	DSM-IV-TR Scale	Peer Socialization	Adult Socialization	Social/ Emotional Reciprocity	Atypical Language	Stereotypy	Behavioral Rigidity	Sensory Sensitivity	Attention
ASD	71.1	68.9	71.0	63.8	72.4	73.9	65.8	68.6	68.8	65.9	70.3	68.4	62.0
ADHD	62.1	58.1	60.5	62.5	60.4	61.6	60.6	58.9	57.5	55.7	60.0	61.4	62.2
Other Clinical	57.0	55.1	55.6	56.8	55.5	57.3	55.5	55.5	56.7	56.7	54.8	52.8	57.2
General Population	49.2	50.3	47.7	49.4	50.0	50.6	49.1	50.4	47.8	48.8	47.8	48.9	49.9

73

73

Classification Accuracy ages 2-5 Parents

	Total Score	ASRS Scales: Social/ Communication	ASRS Scales: Unusual Behaviors	DSM-IV-TR Scale
Overall Correct Classification (%)	**90.0**	**93.5**	**94.8**	**92.7**
Sensitivity (%)	**89.8**	**94.6**	**95.0**	**92.3**
Specificity (%)	**90.3**	**92.3**	**94.7**	**93.3**
Positive Predictive Power (%)	**91.3**	**93.2**	**95.0**	**93.7**
Negative Predictive Power (%)	**88.7**	**93.9**	**94.7**	**91.7**
False-Positive Rate (%)	**9.7**	**7.7**	**5.3**	**6.7**
False-Negative Rate (%)	**10.2**	**5.4**	**5.0**	**7.8**
Kappa	**0.80**	**0.87**	**0.90**	**0.95**
Autism Spectrum Disorder *(N)*	**126**	**132**	**129**	**127**
General Population *(N)*	**115**	**115**	**124**	**121**

74

74

Classification Accuracy ages 2-5 Teachers

	Total Score	ASRS Scales: Social/ Communication	ASRS Scales: Unusual Behaviors	DSM-IV-TR Scale
Overall Correct Classification (%)	**89.4**	**88.0**	**85.2**	**89.7**
Sensitivity (%)	**90.2**	**90.7**	**83.6**	**89.7**
Specificity (%)	**88.6**	**85.4**	**86.8**	**89.7**
Positive Predictive Power (%)	**88.6**	**86.3**	**95.8**	**89.7**
Negative Predictive Power (%)	**90.2**	**90.0**	**84.7**	**89.7**
False-Positive Rate (%)	**11.4**	**14.7**	**13.2**	**10.3**
False-Negative Rate (%)	**9.8**	**9.3**	**16.4**	**10.3**
Kappa	**0.79**	**0.76**	**0.70**	**0.79**
ASD *(N)*	**114**	**124**	**113**	**117**
General Sample *(N)*	**112**	**110**	**124**	**116**

75

75

Classification Accuracy ages 6-18 Parents

	Total Score	ASRS Scales			DSM-IV-TR Scale
		Social/ Communication	Unusual Behaviors	Self-Regulation	
Overall Correct Classification (%)	91.3	91.3	88.3	86.5	91.2
Sensitivity (%)	90.3	90.0	87.7	86.1	90.5
Specificity (%)	92.2	92.5	88.9	86.9	91.9
Positive Predictive Power (%)	91.8	92.3	88.6	86.6	91.8
Negative Predictive Power (%)	90.8	90.2	88.0	86.5	90.6
False-Positive Rate (%)	7.8	7.5	11.1	13.1	8.1
False-Negative Rate (%)	9.7	10.0	12.3	13.9	9.6
Kappa	0.83	0.83	0.77	0.74	0.82
ASD *(N)*	183	195	201	201	196
General Sample *(N)*	196	205	209	207	201

76

76

Classification Accuracy ages 6-18 Teachers

	Total Score	ASRS Scales			DSM-IV-TR Scale
		Social/ Communication	Unusual Behaviors	Self-Regulation	
Overall Correct Classification (%)	91.4	88.8	92.6	85.2	94.1
Sensitivity (%)	92.1	87.1	95.4	85.2	92.8
Specificity (%)	90.7	90.5	89.8	85.1	95.5
Positive Predictive Power (%)	90.3	90.0	90.0	84.8	95.4
Negative Predictive Power (%)	92.5	87.8	95.3	85.5	93.0
False-Positive Rate (%)	9.3	12.9	10.2	14.9	4.5
False-Negative Rate (%)	7.9	8.9	4.6	14.8	7.2
Kappa	0.83	0.78	0.85	0.70	0.88
ASD *(N)*	206	210	231	217	215
General Sample *(N)*	212	229	212	221	227

77

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Part VII
DSM IV TR Autism and Asperger Syndrome

78

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DSM IV TR Autism vs Asperger

- ASRS means for ages 2-5 years were typically somewhat higher for children with Autism than those with Asperger's syndrome
  - Exception being Unusual Behaviors where the two groups were similar
- ASRS means for ages 6-18 years were consistently higher for children with Autism than those with Asperger's syndrome

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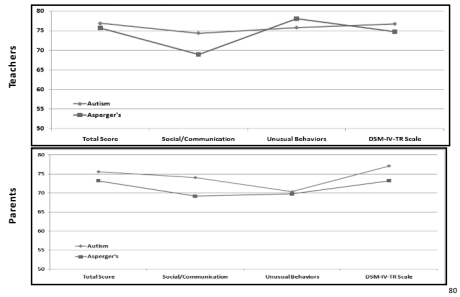
DSM IV TR Autism vs Asperger 2-5 Years



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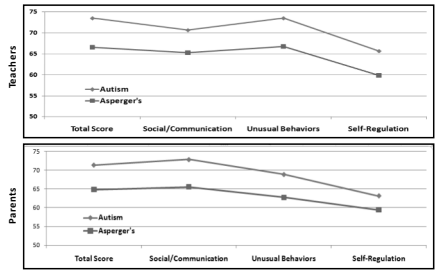
DSM IV TR Autism vs Asperger 6-18 Years



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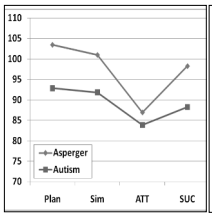
DSM IV TR Autism vs Asperger 6-18 Years



Descriptive Statistics and Comparisons Between Individuals with Autism (*n* = 20) and Asperger Syndrome (*n* = 23).

		Mn	*SD*	*F*	Sig	*d* -ratio
PLAN	Asperger	103.5	31.6	1.71	.20	0.40
	Autism	92.9	19.2			
SIM	Asperger	101.0	15.3	3.33	.08	0.54
	Autism	91.9	17.5			
ATT	Asperger	86.9	17.7	0.30	.59	0.17
	Autism	83.9	18.8			
SUC	Asperger	98.3	15.7	2.46	.12	0.47
	Autism	88.3	25.6			

82

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Important Conclusions

- Behaviors associated with Autism Spectrum Disorders should be measured using well developed nationally standardized scales.
- DSM-5 and ICD 10 provide a good base for understanding ASDs but still require revision.
- ASD is best represented by a 3 factor model: Social/Communication, Unusual Behaviors, & Self-Regulation.
- The prevalence of ASD appears to be increasing…

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Important Conclusions

- BUT, understanding the prevalence of ASD requires
  - Equally valid assessment procedures over time
  - Standardized methods for diagnosis
  - Psychometrically sound measures of behavior
- "The question of whether there are really more children with ASD now than in the past cannot be answered definitely" (p. 44).
  - Wing and Potter's Chapter 2 in *Assessment of Autism Spectrum Disorders* (Goldstein & Ozonoff, 2018)

84

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Important Conclusions

- Clearly what is needed is well developed tools that
  - Are standardized on a typical sample that represents the US population
  - Represent current understanding of ASDs, especially the role of self-regulation
  - Have good reliability and validity
  - Have relevance to intervention
  - Are relatively easy to administer and score

85

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Part VIII
Preliminary Data ASRS vs. ADOS

86

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Autism Diagnostic Observation Schedule (ADOS)

- Age range toddlers to adults.
- No speech to those who are verbally fluent.
- Semi-structured assessment.
- Five modules across age ranges with each requiring 45 minutes to administer.
- A module is chosen depending upon expressive language and age.
- Non-verbal teens and adults can't be reliably evaluated.
- Autism and Autism Spectrum cut off scores are provided for two domains (Social Affective and Restricted Repetitive Behaviors).

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Autism Diagnostic Observation Schedule

CURRENT	NEW
• Social Domain • Communication Domain	• Social Affect Domain • Restrictive Repetitive Behaviors Domain

88

ADOS vs. ASRS

• Social Affect Domain	• Social/ Communication
• Restrictive Repetitive Behaviors Domain	• Unusual Behavior
	• Self-regulation

89

Sample Description

- University of Virginia *Autism Genetic Resource Exchange* (*AGRE*) project data
- Sample selection
  - If the child met criteria for ASD or Autism on the ADOS and met criteria for Autism on the ADI-R, they were considered to be on the autism spectrum - ASD or Autism - (whichever they met according to the ADOS).
  - In the AGRE dataset the ADOS is used in conjunction with the ADI to classify the child

90

Sample Description

- Sample selection (continued)
  - The ADOS and ADI are used for designating the sample as ASD or Autism.
  - If the child did not meet criteria on either instrument there was a case conference to discuss the case in depth - taking into consideration multiple test results (in addition to ADOS and ADI) and reviewing video of the child. At that time the clinical psychologist and the clinician who administered the ADOS and ADI would come to a decision as to what to classify the child.

91

Sample Description

- Ages 6-18 (Mean = 10.3; SD = 3.1)
- N = 90
- 82% (N = 74) Males, 18% (N = 16) Females

92

ADOS (N = 90)

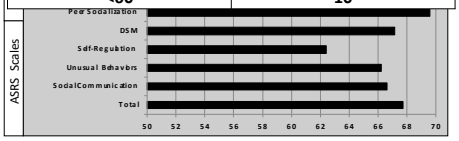
	ADOS Diagnosis Classification
Autism	63
ASD	18
No Diagnosis	9

	Met Criterion	Did Not Meet
Communication Autism	64	26
Communication Autism Spectrum	83	7
Social Autism	80	10
Social Autism Spectrum	86	4
Commmunication + Social Autism	66	24
Communication + Social Autism Spectrum	84	6

93

ASRS Mean T-Scores (*N* = 90)

ASRS TOTAL T-Score	
Value	**N**
70+	**35**
65+	**26**
60+	**19**
<60	**10**



94

ADOS & ASRS Different Scales

	ADOS Diagnosis	ASRS Total (T > 59)
Autism or ASD	**81**	**80**
No Diagnosis	**9**	**10**

95

Part IX: Differential Diagnosis

96

Why Address This Issue?

- Some symptoms overlap.
- Some behaviors associated with many disorders overlap.
- Some impairments overlap.
- Some short term outcomes are similar.
- Some treatments are equally effective for many disorders.

97

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However. . . . .

- Most symptoms of ASD are not associated with ADHD or other disorders.
- Most impairments in ASD are not associated with ADHD or other disorders. .
- The life course, associated risks and outcome are very different between many of these conditions.

98

98

Differential diagnosis

Accurate differential diagnosis is critical because:

- School placements and services will vary.
- Treatment focus will be different.
- Access to services will vary.
- Work with families will be different.

99

99

Is it Really that Difficult to tell the Difference in the DSM 5?

ASD	ADHD
• Unusual behavior	• Inattentive
• Poor communication	• Impulsive
• Limited language	• Hyperactive
• Lack of empathy	• Disorganized
• Poor eye contact	• Procrastination
• Failure to establish friends.	• Forgetful
• Poor perspective taking	• Tasks left unfinished.

100

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Differential diagnosis with the DSM may not be that difficult. . . .if the application of the DSM diagnostic criteria is complete and correct.

101

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Why Address This Issue?

Autism and ADHD: Overlapping and discriminating symptoms

Susan Dickerson Mayes *, Susan L. Calhoun, Rebecca D. Mayes, Sarah Molitoris

Department of Psychiatry, Penn State College of Medicine, Hershey, PA, United States

ARTICLE INFO

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Received 17 May 2011
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Keywords:
Autism
ADHD
Differential diagnosis

ABSTRACT

Children with ADHD and autism have some similar features, complicating a differential diagnosis. The purpose of our study was to determine the degree to which core ADHD and autistic symptoms overlap in and discriminate between children 2–16 years of age with autism and ADHD. Our study demonstrated that 847 children with autism were easily distinguished from 158 children with ADHD. All children with autism had 15 or more of the 30 Checklist for Autism Spectrum Disorder symptoms (mean 22), and none of the children with ADHD did (mean 4). Three of the symptoms were present only in children with autism. Almost all 30 symptoms were found in over half of the children with autism, whereas none were present in the majority of children with ADHD-Inattentive type (ADHD-I) or in children with ADHD-Combined type (ADHD-C) without comorbid oppositional–defiant disorder. In contrast, ADHD symptoms were common in autism. Children with low and high functioning autism and ADHD-C did not differ on maternal ratings of attention deficit, impulsivity, and hyperactivity. For children with normal intelligence, nonsignificant differences were found between children with autism, ADHD-C, and ADHD-I on neuropsychological tests including measures of attention, working memory, processing speed, and graphomotor skills.

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Why Address This Issue?

J Abnorm Child Psychol (2009) 37:443–453
DOI 10.1007/s10802-008-9282-0

PDD Symptoms in ADHD, an Independent Familial Trait?

J. S. Nijmeijer · P. J. Hoekstra · R. B. Minderaa · J. K. Buitelaar · M. E. Altink · C. J. M. Buschgens · E. A. Fliers · N. N. J. Rommelse · J. A. Sergeant · C. A. Hartman

Published online: 3 December 2008

Abstract The aims of this study were to investigate whether subtle PDD symptoms in the context of ADHD are transmitted in families independent of ADHD, and whether PDD symptom familiality is influenced by gender and age. The sample consisted of 256 sibling pairs with at least one child with ADHD and 147 healthy controls, aged 5–19 years. Children who fulfilled criteria for autistic disorder were excluded. The Children's Social Behavior Questionnaire (CSBQ) was used to assess PDD symptoms. Probands, siblings, and controls were compared using analyses of variance. Sibling correlations were calculated for CSBQ scores after controlling for IQ, ADHD, and comorbid anxiety. In addition, we calculated cross-sibling cross-trait correlations. Both children with ADHD and their siblings had higher PDD levels than healthy controls. The sibling correlation was 0.28 for the CSBQ total scale, with the CSBQ stereotyped behavior subscale showing the strongest sibling correlation (r=0.35). Sibling correlations remained similar in strength after controlling for IQ and ADHD, and were not confounded by comorbid anxiety. Sibling correlations were higher in female than in male probands. The social subscale showed stronger sibling correlations in elder than in younger sibling pairs. Cross-sibling cross-trait correlations for PDD and ADHD were weak and not-significant. The results confirm that children

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Why Address This Issue?

J Autism Dev Disord (2009) 39:395–404
DOI 10.1007/s10803-008-0636-9

ORIGINAL PAPER

Positive Effects of Methylphenidate on Social Communication and Self-Regulation in Children with Pervasive Developmental Disorders and Hyperactivity

Laudan B. Jahromi · Connie L. Kasari · James T. McCracken · Lisa S-Y. Lee · Michael G. Aman · Christopher J. McDougle · Lawrence Scahill · Elaine Tierney · L. Eugene Arnold · Benedetto Vitiello · Louise Ritz · Andrea Witwer · Erin Kustan · Jaswinder Ghuman · David J. Posey

Published online: 28 August 2008

Abstract This report examined the effect of methylphenidate on social communication and self-regulation in children with pervasive developmental disorders and hyperactivity in a secondary analysis of RUPP Autism Network data. Participants were 33 children (29 boys) between the ages of 5 and 13 years who participated in a four-week crossover trial of placebo and increasing doses of methylphenidate given in random order each for one week. Observational measures of certain aspects of children's social communication, self-regulation, and affective behavior were obtained each week. A significant positive effect of methylphenidate was seen on

Keywords Methylphenidate · Pervasive developmental disorders · Hyperactivity · Autism spectrum disorder

Introduction

Children with pervasive developmental disorders (PDD) exhibit deficits in social interaction, language, and also show restrictive interests or stereotyped behaviors. Some 40–50% of children with PDD also display high levels of

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What is ADHD?

- ADHD is a biopsychosocial condition characterized by core symptoms of inattention, hyperactivity and impulsivity leading to/interacting with cognitive deficits causing impairment in all walks of life.
- ADHD appears to primarily involve the basal ganglia, cerebellum and variably the frontal lobes, depending on associated learning difficulties.
- ADHD appears to primarily involve the neurotransmitter dopamine.

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What is ADHD?

- ADHD is a condition stemming from inefficient self-regulation also closely involving planning and executive functioning.
- Co-morbidity with ADHD probably confounds findings from different study groups.
- The Symptoms of ADHD lead to a nearly infinite number of consequences.

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Self-regulation

- The ability to inhibit
- The ability to delay
- The ability to separate thought from feeling
- The ability to separate experience from response
- The ability to consider an experience and change perspective
- The ability to consider alternative responses

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Self-regulation

- The ability to choose a response and act successfully towards a goal
- The ability to change the response when confronted with new data
- The ability to negotiate life automatically
- The ability to track cues

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Children with ADHD are typically cueless not clueless. They know what to do but fail to do so consistently, predictably and independently.

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DSM-5 View of ADHD

Essential features:

- Persistent pattern of inattention and/or hyperactivity-impulsivity that is more frequently displayed and is more severe than is typically observed in individuals at comparable level of development (6 or more for kids; 5 or more for older teens and adults).
- Some hyperactive-impulsive or inattentive symptoms must have been present before seven years of age (6 or more for kids; 5 or more for older teens and adults).
- Some impairment (impaired functioning) from the symptoms must be present in at least two settings.

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110

DSM-5 View of ADHD

Essential features:

- There must be clear evidence of interference with developmentally appropriate social, academic or occupational functioning (at least 2 settings).
- The disturbance does not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorders and is not better accounted for by another mental disorder.

111

Part X
Diagnosis Versus Eligibility
When the DSM, ICD and IDEIA Collide

112

Students that have a DSM or ICD diagnosis are not automatically eligible for special education services, according to the Individuals with Disabilities Education Improvement Act (IDEIA).

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Educational eligibility and subsequent services are determined by conducting assessments and testing performed by a school's multidisciplinary team and not that of medical diagnostic tests.

These can include observations, history, developmental information, behavior information and a documented prevalence over a period of time.

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Federal Guidelines For Autism Eligibility

(a) *General.*

(1) *Child with a disability* means a child evaluated in accordance with §§ 300.304 through 300.311 as having mental retardation, a hearing impairment (including deafness), a speech or language impairment, a visual impairment (including blindness), a serious emotional disturbance (referred to in this part as "emotional disturbance"), an orthopedic impairment, autism, traumatic brain injury, an other health impairment, a specific learning disability, deaf-blindness, or multiple disabilities, and who, by reason thereof, needs special education and related services.

(2)

(i) Subject to paragraph (a)(2)(ii) of this section, if it is determined, through an appropriate evaluation under §§ 300.304 through 300.311, that a child has one of the disabilities identified in paragraph (a)(1) of this section, but only needs a related service and not special education, the child is not a child with a disability under this part.

(ii) If, consistent with § 300.39(a)(2), the related service required by the child is considered special education rather than a related service under State standards, the child would be determined to be a child with a disability under paragraph (a)(1) of this section.

(b) *Children aged three through nine experiencing developmental delays. Child with a disability* for children aged three through nine (or any subset of that age range, including ages three through five), may, subject to the conditions described in § 300.111(b), include a child -

(1) Who is experiencing developmental delays, as defined by the State and as measured by appropriate diagnostic instruments and procedures, in one or more of the following areas: Physical development, cognitive development, communication development, social or emotional development, or adaptive development; and

(2) Who, by reason thereof, needs special education and related services.

(Authority: 20 U.S.C. 1401(3); 1401(30))
[71 FR 46753, Aug. 14, 2006, as amended at 72 FR 61306, Oct. 30, 2007]

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115

Federal Guidelines For Autism Eligibility

(i) *Autism* means a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three, that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences.

(ii) Autism does not apply if a child's educational performance is adversely affected primarily because the child has an emotional disturbance, as defined in paragraph (c)(4) of this section.

(iii) A child who manifests the characteristics of autism after age three could be identified as having autism if the criteria in paragraph (c)(1)(i) of this section are satisfied.

(Authority: 20 U.S.C. 1401(3); 1401(30))
[71 FR 46753, Aug. 14, 2006, as amended at 72 FR 61306, Oct. 30, 2007]

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Scales For the Adult ASRS 2 Pilot

- Atypical Language
- Attention
- Behavioral Rigidity
- Sensory Sensitivity
- Socialization
- Social/Emotional Reciprocity
- Stereotypy
- DSM 5 ASD

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Scale Reliability

- **Summary of the Reliability of each scale as measured by Cronbach's alpha (a measure of internal consistency, that is, how closely related a set of items are as a group).**
- **Overall, the alpha values indicate high level of reliability for each scale.**

Scales	Self-Report		Observer-Report	
	General Population	Clinical	General Population	Clinical
Atypical Language	0.88	0.89	0.87	0.94
Attention	0.86	0.86	0.90	0.90
Behavioral Rigidity	0.90	0.94	0.93	0.91
Sensory Sensitivity	0.85	0.90	0.84	0.87
Socialization	0.85	0.92	0.86	0.90
Social/Emotional Reciprocity	0.90	0.93	0.91	0.94
Self-Injurious Behavior	0.86	0.79	0.90	0.82
Stereotypy	0.87	0.91	0.88	0.90
DSM-5 ASD	0.92	0.96	0.93	0.96

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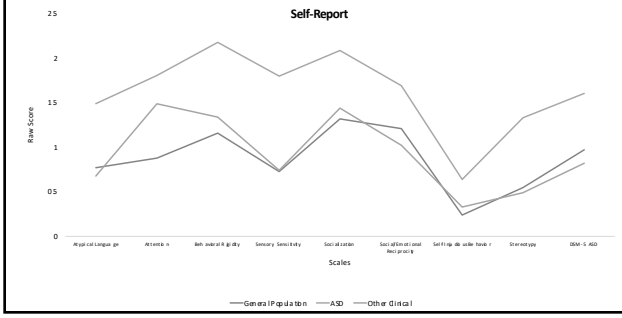
Clinical Group Differences (Raw scores)



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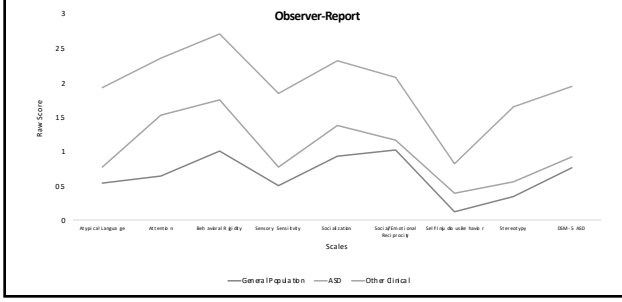
Clinical Group Differences (Raw scores)



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Clinical Group Differences (Cohen's d)

Scales	Self-Report		Observer-Report	
	ASD vs. General Population	ASD vs. Other Clinical	ASD vs. General Population	ASD vs. Other Clinical
Atypical Language	1.21	1.36	2.46	1.38
Attention	1.66	0.49	2.93	1.24
Behavioral Rigidity	1.61	1.19	2.47	1.57
Sensory Sensitivity	1.74	1.60	2.39	1.91
Socialization	1.30	0.94	2.51	1.61
Social/Emotional Reciprocity	0.86	1.23	1.80	1.53
Self-Injurious Behavior	0.88	0.62	1.76	0.70
Stereotypy	1.34	1.31	2.62	1.62
DSM-5 ASD	1.49	1.70	2.67	2.36

d= 0.2-0.4 Small
d= 0.5-0.7 Med
d >=0.8 Large

For the most part, Large d-values are observed across comparisons, indicating the ability of the assessment to identify individuals with ASD

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We are collecting data for additional new scales for the Adult ASRS 2 including camouflage or coping behaviors and anxiety.

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Evaluating Compensatory Behaviors: Social Camouflage in ASD

- Social camouflaging is defined as the use of strategies by autistic people to minimize the challenges of autism during social situations (Lai et al. 2011).
- Social camouflage has recently been a focus of researchers, but has been recognized by clinicians as coping strategies. It is now recommended that clinicians evaluate masking or coping behaviors when assessing autism in the newly released 11th edition of the International Classification of Diseases (Zeldovich 2017).
- This phenomena may be a widespread in ASD, especially in intellectually strong individuals.

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Social Camouflage in ASD

- Social camouflaging reflects an explicit effort to 'mask' or 'compensate' for autistic characteristics; and to use conscious techniques to minimize an autistic behavioral presentation (Hull et al. 2017; Lai et al. 2017; Livingston and Happé 2017).
- Examples of camouflaging behaviors described in the current literature include as example: forcing oneself to make eye contact during a social interaction; pretending that one is doing so by looking at the space between someone's eyes or at the tip of their nose; or using working memory strategies to develop a list of appropriate topics for conversation.

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Social Camouflage in ASD: Unanswered Questions

- Do autistic females camouflage more than males, and does this partly account for gender disparities in the rate and timing of diagnosis (Begeer et al. 2013; Loomes et al. 2017)?
- What is the relationship between camouflaging and mental health outcomes?
- How should camouflaging be accurately measured? Is a discrepancy method sufficient to assess the the gap between how a person with ASD mediates their internal autistic status and their overt behavior (external autistic presentation)?

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Measuring Social Camouflage

Livingston and Happé (2017) suggest that camouflaging is a component of social compensation.

The "processes contributing to improved behavioral presentation of a neurodevelopmental disorder such as ASD, despite persisting core deficit(s) at cognitive and/or neurobiological levels".

As such they should be measured at the behavioral, cognitive, and even neurobiological levels.

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Performance on tests of cognition relevant to autism, or scores on self-reported measures of autism traits can only serve as a proxy measure of internal autistic status.

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Measuring Social Camouflage

- An alternative to the discrepancy approaches is one based on observational recognition of camouflaging; measuring the specific behaviors and experiences which represent camouflaging.
- Observational/reflective methods circumvent the limitation of being unable to measure an individual's internal autistic state. Camouflaging can be measured consistently and compared between individuals, and behaviors can be identified regardless of how successful they may be.
- This approach to camouflaging has the advantage of allowing for variation in camouflaging behaviors and their success. Techniques learned and used in some situations may not be successful in others.
- An individual's overall camouflaging skill may partly depend on their flexibility/generalizable capacity to adapt to different situations.

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Measuring Social Camouflage

- Both the discrepancy and observational/reflective approaches offer ways to define and measure camouflaging in ASD.
- All the methods used or suggested have their own strengths and weaknesses, thus combining multiple methods may allow for greater accuracy in measuring and identifying a complex phenomenon such as camouflaging.

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Camouflaging Autistic Traits Questionnaire (CAT-Q)

- Compensation
- Masking
- Assimilation

Laura Hull , William Mandy, Meng-Chuan Lai, Simon Baron-Cohen, Carrie Allison,Paula Smith & K. V. Petrides. Development and Validation of the Camouflaging Autistic Traits Questionnaire (CAT-Q) *Journal of Autism and Developmental Disorders.* doi.org/10.1007/s10803-018-3792-6

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Social Camouflage: Compensation

- Copy others facial expression or body language.
- Learn social clues from media.
- Watch others to understand social skills.
- Repeat others phrasing and tone.
- Use script in social situations.
- Explicitly research the rules of social engagement.

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Social Camouflage: Masking

- Monitor face and body to appear relaxed.
- Adjust face and body to appear relaxed.
- Monitor face and body to appear interested in others.
- Adjust face and body to appear interested in others.
- Pressured to make eye contact.
- Think about impression made on others.
- Aware of impression made on others.

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Part XI
Educational Care and Treatment

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Intervention

- Despite strong claims no curative treatment has been studied vigorously.
- "In the absence of a definitive cure there are a thousand treatments" (Klin).
- Behavior modification, educational intervention and pharmacology have been studied.

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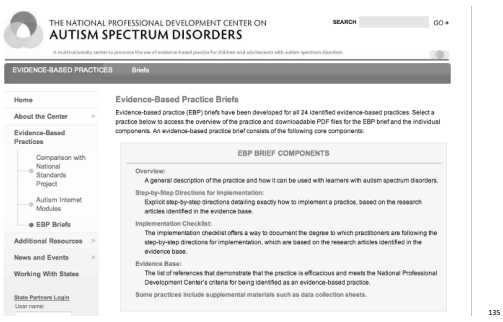
http://autismpdc.fpg.unc.edu/content/briefs



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http://autismpdc.fpg.unc.edu/content/briefs

EVIDENCE-BASED PRACTICES FOR CHILDREN AND YOUTH WITH ASD

Antecedent-Based Interventions (ABI)
Computer-Aided Instruction
Differential Reinforcement
Discrete Trial Training
Extinction
Functional Behavior Assessment
Functional Communication Training
Naturalistic Intervention
Parent-Implemented Interventions
Peer-Mediated Instruction and Intervention
Picture Exchange Communication System (PECS)
Pivotal Response Training
Prompting
Reinforcement
Response Interruption/Redirection
Self-Management
Social Narratives
Social Skills Groups
Speech Generating Devices/VOCA
Structured Work Systems
Task Analysis
Time Delay
Video Modeling
Visual Supports

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Components of an Effective Treatment Program

- Structured behavioral treatment
- Parent involvement
- Treatment at an early age
- Intensive intervention
- Social skill development
- Focus on generalization of skills
- Appropriate school setting
- Medication?

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Challenges to Treatment

- **Concrete thinkers**
- **Difficulty with humor**
- **Problems regulating affect**
- **Difficulty interpreting others' feelings**
- **Rule-bound**
- **Diminished empathy**
- **Decreased desire to please significant others**

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Medications

- Symptom focused medications: stimulants for attention, anti-depressants for mood, anti-psychotics for "oddities".
- Condition focused medications?

139

Drugs that increase serotonin transmission may be useful in reducing interfering repetitive behaviors and aggression as well as improving social relatedness (few controlled studies).

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Promoting Social Behavior With Oxytocin in High-Functioning Autism Spectrum Disorders

- Published (2/10) online in the Proceedings of the National Academy of Sciences.
- Oxytocin is a hormone known to promote mother-infant bonds.
- A French research group investigated the behavioral effects of oxytocin in 13 subjects with autism.
- Under oxytocin, children with ASD responded more strongly to others and exhibited more appropriate social behavior and affect, suggesting a therapeutic potential of oxytocin through its action on a core dimension of autism.

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Oxytocin May Have Many Effects

Personality and Social Psychology Review

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Oxytocin and Human Social Behavior

Anne Campbell

Durham University, Durham, UK, a.c.campbell@durham.ac.uk

Abstract

Despite a general consensus that oxytocin (OT) has prosocial effects, there is no clear agreement on how these effects are achieved. Human research on OT is reviewed under three broad research initiatives: attachment and trust, social memory, and fear reduction. As an organizing perspective for scholars' current knowledge, a tentative model of the causes and effects of alterations in OT level is proposed. The model must remain provisional until conceptual and methodological problems are addressed that arise from a failure to distinguish between traits and states, differing research paradigms used in relation to OT as an independent versus dependent variable, and the possibility that OT effects depend on the initial emotional state of the individual. Social and personality psychologists have important roles to play in developing more rigorous and creative research designs.

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Medication and Parent Training in Children With Pervasive Developmental Disorders and Serious Behavior Problems: Results From a Randomized Clinical Trial

MICHAELG. AMAN, PH.D., CHRISTOPHERJ. MCDOUGLE, M.D. et al.

Conclusions: Medication plus PT resulted in greater reduction of serious maladaptive behavior than Medication alone in children with PDDs, with a lower risperidone dose.

J. AM. ACAD. CHILD ADOLESC. PSYCHIATRY, 48:12, DECEMBER 2009J.

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Comorbid ADHD and Anxiety Affect Social Skills Group Intervention Treatment Efficacy in Children With Autism Spectrum Disorders

Kevin M. Antshel, PhD, Carol Polacek, PhD, NP, Michele McMahon, CSW, Karen Dygert, NP, Laura Spenceley, MA, Lindsay Dygert, BS, Laura Miller, BA, Fatima Faisal

ABSTRACT: *Objective:* To assess the influence of psychiatric comorbidity on social skill treatment outcomes for children with autism spectrum disorders (ASDs). *Methods:* A community sample of 83 children (74 males, 9 females) with an ASD (mean age = 9.5 yr; SD = 1.2) and common comorbid disorders participated in 10-week social skills training groups. The first 5 weeks of the group focused on conversation skills and the second 5 weeks focused on social problem solving skills. A concurrent parent group was also included in the treatment. Social skills were assessed using the Social Skills Rating System. Ratings were completed by parents at pre- and posttreatment time periods. *Results:* Children with ASD and children with an ASD and comorbid anxiety disorder improved in their parent reported social skills. Children with ASD and comorbid attention deficit/hyperactivity disorder failed to improve. *Conclusion:* Psychiatric comorbidity affects social skill treatment gains in the ASD population.

(*J Dev Behav Pediatr* 32:439–446, 2011) **Index terms:** autism spectrum, social skills, ADHD.

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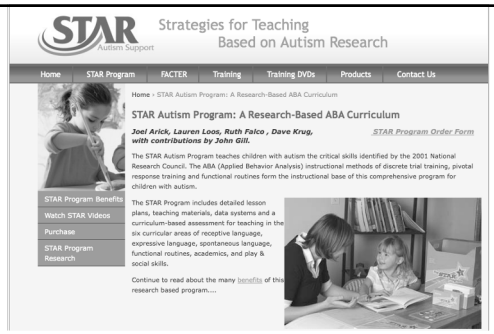

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The first randomized, controlled trial for comprehensive autism treatment for children as young as 18 months old.

While certainly not a cure for the condition, the study did find that intense early treatment yields major improvements in IQ scores, language processing, and in the ability to manage everyday tasks essential for early childhood development and education.

Published in *Pediatrics* the University of Washington study was funded by the National Institute of Mental Health. It involved 48 children ages 18 to 30 months, half of whom were randomly assigned to receive the Early Start Denver Model, an intensive autism therapy protocol. The other half were assigned to a control group and received less intensive therapy.

After two years, those who participated in the Denver Model group had average IQ scores 17.6 points higher than the control group, putting them within the range of normal intelligence, while those in the other group gained just seven points, remaining in the zone of intellectual disability.

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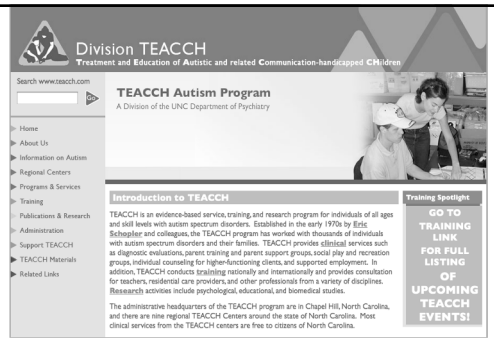

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Self Help Volumes

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Clinical Volumes

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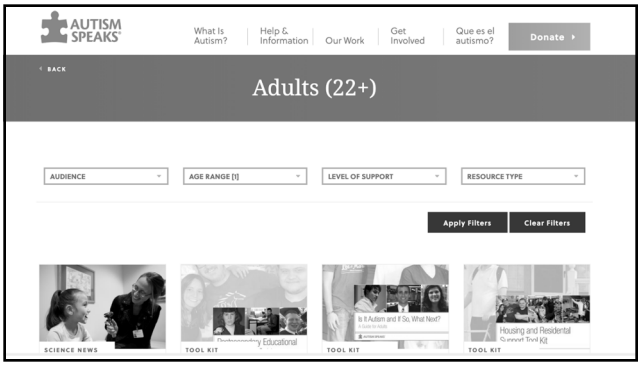

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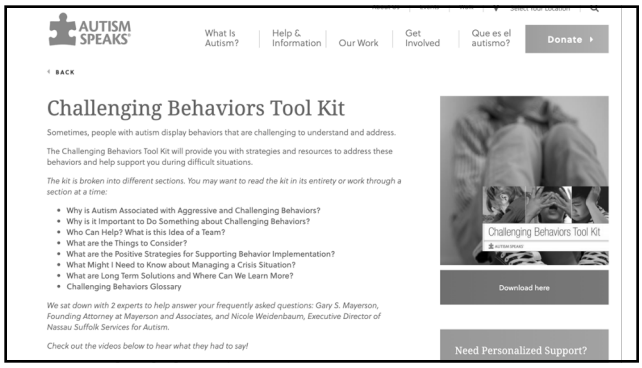
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What Is Autism?
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Challenging Behaviors Tool Kit
Sometimes, people with autism display behaviors that are challenging to understand and address.
The Challenging Behaviors Tool Kit will provide you with strategies and resources to address these behaviors and help support you during difficult situations.
The kit is broken into different sections. You may want to read the kit in its entirety or work through a section at a time:
Why is Autism Associated with Aggressive and Challenging Behaviors?
Why is it Important to Do Something about Challenging Behaviors?
Who Can Help? What is this Idea of a Team?
What are the Things to Consider?
What are the Positive Strategies for Supporting Behavior Implementation?
What Might I Need to Know about Managing a Crisis Situation?
What are Long Term Solutions and Where Can We Learn More?
Challenging Behaviors Glossary
We sat down with 2 experts to help answer your frequently asked questions: Gary S. Mayerson, Founding Attorney at Mayerson and Associates, and Nicole Weidenbaum, Executive Director of Nassau Suffolk Services for Autism.
Check out the videos below to hear what they had to say!
Challenging Behaviors Tool Kit
Download here
Need Personalized Support?

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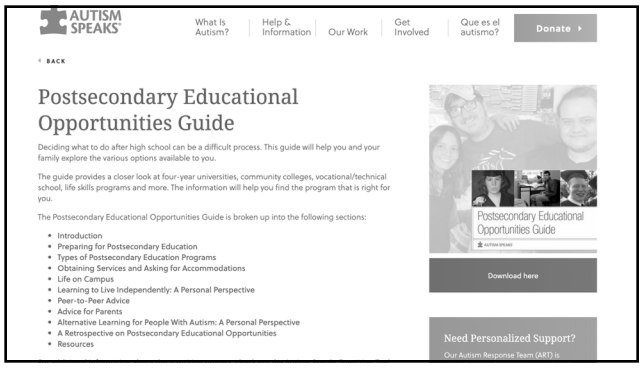
AUTISM SPEAKS
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Help & Information
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Postsecondary Educational Opportunities Guide
Deciding what to do after high school can be a difficult process. This guide will help you and your family explore the various options available to you.
The guide provides a closer look at four-year universities, community colleges, vocational/technical school, life skills programs and more. The information will help you find the program that is right for you.
The Postsecondary Educational Opportunities Guide is broken up into the following sections:
Introduction
Preparing for Postsecondary Education
Types of Postsecondary Education Programs
Obtaining Services and Asking for Accommodations
Life on Campus
Learning to Live Independently: A Personal Perspective
Peer-to-Peer Advice
Advice for Parents
Alternative Learning for People With Autism: A Personal Perspective
A Retrospective on Postsecondary Educational Opportunities
Resources
Postsecondary Educational Opportunities Guide
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Need Personalized Support?
Our Autism Response Team (ART) is

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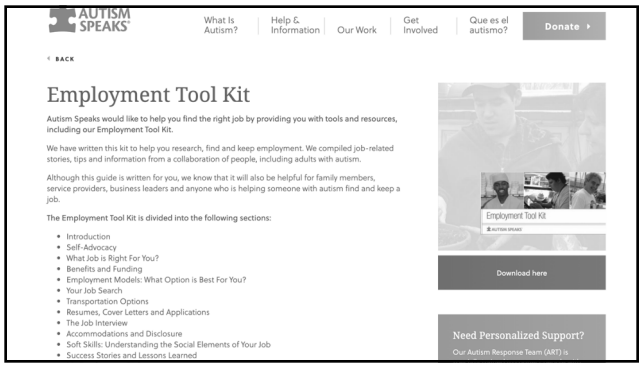
AUTISM SPEAKS
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Employment Tool Kit
Autism Speaks would like to help you find the right job by providing you with tools and resources, including our Employment Tool Kit.
We have written this kit to help you research, find and keep employment. We compiled job-related stories, tips and information from a collaboration of people, including adults with autism.
Although this guide is written for you, we know that it will also be helpful for family members, service providers, business leaders and anyone who is helping someone with autism find and keep a job.
The Employment Tool Kit is divided into the following sections:
Introduction
Self-Advocacy
What Job is Right For You?
Benefits and Funding
Employment Models: What Option is Best For You?
Your Job Search
Transportation Options
Resumes, Cover Letters and Applications
The Job Interview
Accommodations and Disclosure
Soft Skills: Understanding the Social Elements of Your Job
Success Stories and Lessons Learned
Employment Tool Kit
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Our Autism Response Team (ART) is

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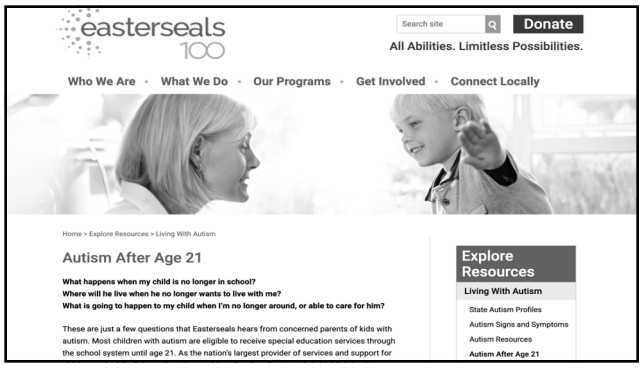
easterseals
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All Abilities. Limitless Possibilities.
Who We Are • What We Do • Our Programs • Get Involved • Connect Locally
Home > Explore Resources > Living With Autism
Autism After Age 21
What happens when my child is no longer in school?
Where will he live when he no longer wants to live with me?
What is going to happen to my child when I'm no longer around, or able to care for him?
These are just a few questions that Easterseals hears from concerned parents of kids with autism. Most children with autism are eligible to receive special education services through the school system until age 21. As the nation's largest provider of services and support for
Explore Resources
Living With Autism
State Autism Profiles
Autism Signs and Symptoms
Autism Resources
Autism After Age 21

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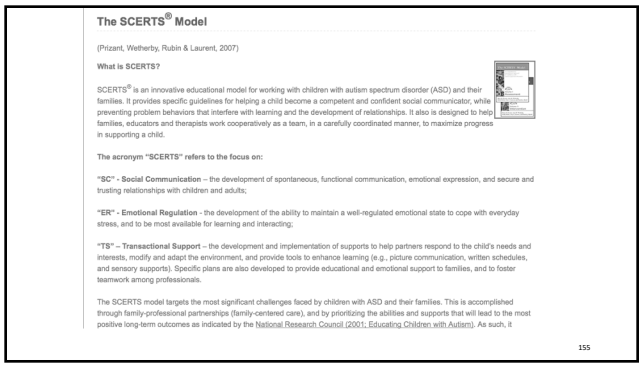
The SCERTS® Model
(Prizant, Wetherby, Rubin & Laurent, 2007)
What is SCERTS?
SCERTS® is an innovative educational model for working with children with autism spectrum disorder (ASD) and their families. It provides specific guidelines for helping a child become a competent and confident social communicator, while preventing problem behaviors that interfere with learning and the development of relationships. It also is designed to help families, educators and therapists work cooperatively as a team, in a carefully coordinated manner, to maximize progress in supporting a child.
The acronym "SCERTS" refers to the focus on:
"SC" - Social Communication – the development of spontaneous, functional communication, emotional expression, and secure and trusting relationships with children and adults;
"ER" - Emotional Regulation - the development of the ability to maintain a well-regulated emotional state to cope with everyday stress, and to be most available for learning and interacting;
"TS" – Transactional Support – the development and implementation of supports to help partners respond to the child's needs and interests, modify and adapt the environment, and provide tools to enhance learning (e.g., picture communication, written schedules, and sensory supports). Specific plans are also developed to provide educational and emotional support to families, and to foster teamwork among professionals.
The SCERTS model targets the most significant challenges faced by children with ASD and their families. This is accomplished through family-professional partnerships (family-centered care), and by prioritizing the abilities and supports that will lead to the most positive long-term outcomes as indicated by the National Research Council (2001; Educating Children with Autism). As such, it
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Registration for the Greenspan Floortime Approach and workshops is now closed. The Assessment will continue to be available for sign up. (See the first column on the home page.) If you would like information regarding future courses, please fill out the contact information at the bottom of our home page under "Free Guide: Discover Your Child's Learning Style."...
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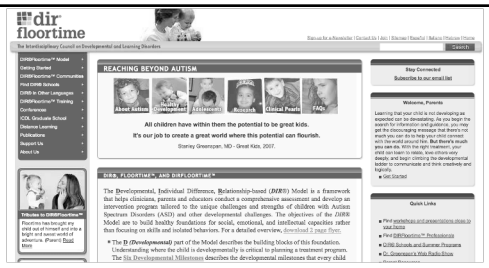

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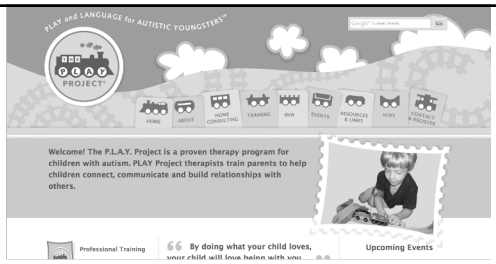

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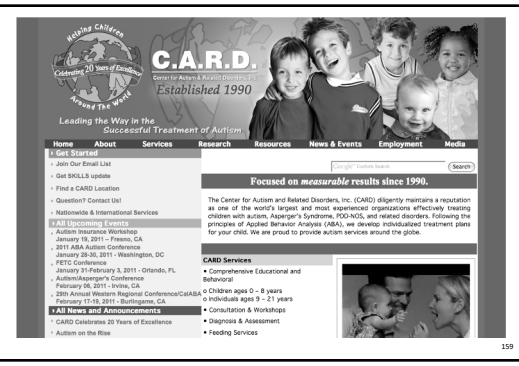

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The "Prime Directive" is Independence

- Reduce reliance on prompts.
- Help individual's predict and control. environment and behavior.
- Increase self-esteem and self-efficacy.
- Develop independence through a "learning to swim" mindset.

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Assessment of Learning Outcomes

- (1) I can describe the history of autism. I know about evaluation of the diagnostic protocols for autism. I know about the social learning problems characteristic of autism.
- (2) I know about the process of assessment, including behavioral observation, completion of rater questionnaires and face-to-face assessment.
- (3) I know about utilizing a diagnostic protocol for making the diagnosis of autistic disorders. I know about current treatment strategies for autism.
- (4) I know about the variables that predict positive outcome based on recent research for a select group of autistic individuals.
- (5) I know the research regarding similarities and differences between children with ASD, ADHD, SLD, and other disabilities.
- (6) I know about best clinical and educational practice for making diagnosis and developing treatment plans
- (7) I know about the main issues, methods and research regarding treatment of autistic related behaviors.

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Devin Teichert

Song of Myself

December 16, 2008

Were They but There at Night

There is a bolder field where every stone
Is a glazed, glittering gem, like stars fallen from the sky
All except one, a plain grey rock alone in the center
Feeling excluded and shunned
People come, tourists, painters, photographers, collectors
To view each shining bolder, a pleasure to the beholder
Oohh! Ahh! Look at this one! Come quick!
Pockets bulge with fragments and paint cans run dry
But the grey rock remains ignored
An ugly blotch on a sweeping mural
The sun sets, everyone leaves
And they miss the centerpiece of the field
For when night falls, the grey rock in the center
It glows in the dark

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Questions?
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TEDx: https://www.youtube.com/watch?v=isfw8JJ-eWM

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