

1

Classification of Autism in Young Children

Erin E. Barton

University of Colorado Denver

Chapter Objectives:

- Describe the symptomatology of autism spectrum disorders.
 - Describe the variability in autism symptomatology across people with autism.
 - List and describe the autism spectrum disorders with the DSM-IV-TR.
 - Describe two autism classification systems (DSM-IV-TR & ICD-10).
 - Describe the current prevalence of autism and the issues associated with measuring the prevalence.
-

Autism is a neurobiological developmental disorder initially characterized by Leo Kanner (1943) and Hans Asperger (1944). Since their initial descriptions, the identification and classification of autism have undergone many iterative changes. The current approach to autism

classification is outlined in the *Diagnostic and Statistical Manual of Mental Disorders—4th Edition—Text Revision* (DSM-IV-TR; American Psychiatric Association, 2000). This manual provides a classification system for diagnosing and differentiating autism under the heading “pervasive developmental disorders.” However, the identification of autism typically involves a team of professionals. Chapters 2 and 3 provide descriptions of the autism identification processes. Autism is not a single disease. It is characterized by a spectrum of disorders, which varies across and within children over time. In most cases, autism first appears in early childhood and continues throughout adulthood. Advancements in autism treatment often lead to improved outcomes over time.

Autism symptomatology manifests with much variability. Today there are several different conditions related to autism commonly known as Autism Spectrum Disorders (Volkmar, State, & Klin, 2009). The term *autism* is used throughout this book to refer generally to children with Autism Spectrum Disorders. Although there are many commonalities, there is no single behavioral marker for autism. The hallmark autism symptoms are deficits in social behaviors. The criteria used for classification of autistic disorder mirror the triad of impairments first described by Leo Kanner (1943). Characteristics include qualitative impairments in social interactions, communication, and restricted, repetitive, and stereotyped patterns of behavior. Additionally, delays in social interaction, communication, or symbolic play must be present before the child turns 3 years old (American Psychiatric Association, 2000).

About 60% of children with autism experience significant cognitive delays (Fombonne, 2005), and about 30%–50% will not develop functional speech; however, these numbers are decreasing with early diagnosis and treatment (Chakrabarti & Fombonne, 2005). Although, autism is considered a mental health disorder, it severely impacts development and academic achievement in most children. Thus, the vast majority of children with autism will be eligible for specialized early intervention and education services (see Chapter 3 for more on educational eligibility). Autism is considered a severe disability due to the intense, lasting effects the disorder has on the individual and his or her family.

DIAGNOSTIC CLASSIFICATION

Classification systems are important for helping families understand their child’s behaviors, provide access to appropriate treatment, and conduct and replicate research on autism treatments. Two classification systems are widely used to diagnosis autism. The American Psychiatric Association publishes the DSM. The most recent version, the fourth edition with text revisions (IV-TR), was published in 2000. The World Health Organization (WHO) publishes the International Classification of Diseases (ICD).

The ICD-10 is the international standard diagnostic classification system used to record a variety of world health records, including mortality and morbidity statistics. Although these two classification systems define autism along the triad of impairments (atypical social, communication, and patterns of behavior), there are some important distinctions. These are discussed further.

DSM-IV-TR. The DSM-IV-TR includes autism as one of five Pervasive Developmental Disorders (PDDs; American Psychiatric Association, 2000). The five PDDs include the following: Autistic Disorder, Rett's Disorder, Childhood Disintegrative Disorder, Asperger's Disorder, and Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS; American Psychiatric Association, 2000). Each of these disorders manifests with pervasive social and behavioral deficits. The most recognized of the PDDs is Autistic Disorder. The criteria for DSM-IV-TR for Autistic Disorder is listed here.

Diagnostic Criteria for 299.00 Autistic Disorder:

- A. A total of six (or more) items from (1), (2), and (3), with at least two from (1), and one each from (2) and (3):
 1. qualitative impairment in social interaction, as manifested by at least two of the following:
 - a. marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction
 - b. failure to develop peer relationships appropriate to developmental level
 - c. a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by lack of showing, bringing, or pointing out objects of interest)
 - d. lack of social or emotional reciprocity
 2. qualitative impairments in communication as manifested by at least one of the following:
 - a. delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)
 - b. in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
 - c. stereotyped and repetitive use of language or idiosyncratic language
 - d. lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

(Continued)

(Continued)

3. restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following:
 - a. encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal in intensity or focus
 - b. apparently inflexible adherence to specific, nonfunctional routines or rituals
 - c. stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)
 - d. persistent preoccupation with parts of objects
- B. Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years: (1) social interaction, (2) language as used in social communication, or (3) symbolic or imaginative play.
- C. The disturbance is not better accounted for by Rett's Disorder or Childhood Disintegrative Disorder. (American Psychiatric Association, 2000, p. 75)

Source: Reprinted with permission from the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (Copyright © 2000). American Psychiatric Association.

International Classification of Diseases. The ICD-10 (WHO, 1992) classification system is widely used in Europe and around the world. The criteria for **childhood autism** are similar to the DSM-IV-TR criteria for Autistic Disorder. They include the following:

- Abnormal or delayed development prior to age 3 in
 - Receptive or expressive language
 - Social interactions
 - Functional or symbolic play
- Qualitative impairments in social interactions
- Qualitative impairments in communication skills
- Restricted, repetitive patterns of behavior

As is evident, the DSM-IV-TR and ICD-10 include similar criteria to diagnose autism.

PREVALENCE

The prevalence (number of cases at a particular time in a particular area) of autism is increasing at a faster rate than any other developmental disability in young children; autism affects approximately 1 in 110 children (Centers for Disease Control and Prevention [CDC], 2007). Recent numbers from

the CDC suggest the prevalence might be closer to 1 in 88 children (2012). It affects about 1.5 million Americans and is increasing at a rate of about 10%–17% per year. A new case is diagnosed almost every 20 minutes. These numbers are staggering and call for urgent public health action in the areas of early identification and treatment.

These prevalence statistics are based on a research study conducted by the CDC in 11 states (2007). This study found differences across states in the rates of autism. However, the average prevalence across the 11 states was 1 in 110 children. The differences across states were in part due to the availability of educational and medical records. Individual child records for all 8-year-old children in 2006 across the 11 states were reviewed by trained autism clinicians and coded for meeting autism DSM-IV-TR criteria. The most consistent findings across the 11 states were the higher prevalence of autism in boys than girls. The prevalence also varied by race. Across states the prevalence of autism was higher in white children than black or Hispanic children in all 11 states. The majority of children with autism across all 11 states were receiving special education services in schools. This study also compared prevalence rates over time and found an increase between 2002 and 2006. Although the rate of increased prevalence varied across states, rates increased across all 11 states with notable differences found in the increases in white children. This study also found a notable decrease in the median age of earliest documented autism diagnosis, which is not surprising given the increases in research on early screening and surveillance efforts (see Chapter 2 for more information on early screening efforts). The causes for this increase in autism are unknown. However, the increases are likely due, at least in part, to better diagnostic practices and tools, the expansion of the definition of autism (which includes more behaviors), and an increased awareness of the disorder among medical and educational professionals.

ETIOLOGY OF AUTISM

Autism is a neurobiological developmental disorder, which means it is caused by disorders or impairments in the brain or central nervous system. In general, neurodevelopmental disorders are associated with mental, emotional, and physical impairments. Autism likely results from early brain abnormalities that affect multiple neural systems (Coleman, 2005). Research suggests the brains of children with autism grow at abnormal rates (Courchesne et al., 2001). In fact, Kanner's original description of autism noted an increased head circumference in some of the children with autism (Minchew, Sweeney, Bauman, & Webb, 2005). Autopsy studies have revealed abnormalities in the amygdala, cerebellum, brain stem, and temporal lobes of people with autism (Schultz & Robins, 2005). This research clearly points to neural abnormalities in the mechanics of autism; however, many questions remain.

In recent years, many contentious debates about the nature of autism have emerged. Clinicians debate whether autism is a disorder characterized across a spectrum or a group of related, similar disorders. Likewise, many contentious debates have emerged related to the causes or etiology of autism. To date, the etiology of autism is unknown. Nonetheless, empirically supported research advances in the causes and genetic influences of autism are currently being made. Scientific research is imperative to understand the causes and identify effective treatments for autism.

Since autism was first documented, there have been several ideas about the causes of autism; however, none are substantiated. Several of these ideas have received widespread media attention, and unfortunately, some have had an adverse impact on young children and families. For example, vaccines were inaccurately linked to increases in autism, which led many parents to refuse to vaccinate their children. These claims were based on falsified data that had been published but was recently fully retracted by the medical journal *The Lancet* (Wakefield et al., 1998). This article was retracted because the editors determined that many of the claims made in the original paper were inaccurate. They found that the primary author manipulated patient data and misreported results. Since this study was published, several methodologically sound (i.e., rigorous and accurate) clinical studies have reported no link between vaccines and autism. Unfortunately, many parents continue to refuse to vaccinate their children, which puts the general population at risk for developing previously eradicated diseases (i.e., whooping cough and measles). Both of these diseases are entirely preventable through childhood vaccines, and both can be fatal when contracted by infants who are too young to be vaccinated or people with compromised immune systems. Furthermore, the American Academy of Pediatrics (AAP), the American Medical Association (AMA), the CDC, and the Institute of Medicine (IOM) recently concurred in a joint statement that science does not support a link with autism and vaccines (see Stratton, Gable, & McCormick, 2001). More information is available on the AAP website: <http://www.aap.org/healthtopics/Autism.cfm> and <http://www.cispimmunize.org/>. For a list of facts about autism and vaccine safety see the following: <http://www.aap.org/advocacy/releases/autismparentfacts.htm>.

General consensus among autism researchers is that genetic factors are the most predominant known causes of autism, although the exact genetic links are complex and not well understood. Recent genetic research has demonstrated a greater than 60% concordance rate among identical twins and an increased risk for siblings of children with autism (Baron-Cohen, 2004; Popper, Gammon, West, & Bailey, 2005). Also, research suggests relatives of people with autism have an increased rate of aberrant social, communication, or patterns of behavior (Rutter, 2005). However, no single "autism gene" has been identified. The genetics of the disorder are as complex as the manifestation of the disorder.

CONCLUSIONS AND FUTURE DIRECTIONS

In recent years, more and more children with autism are receiving services in inclusive preschool classrooms alongside typically developing peers. Federal law mandates that children with disabilities receive services within the least restrictive environment, which means inclusive, community settings must be considered and rejected before placement into a segregated classroom can occur. Further, current research supports the inclusion of children with autism into community or public school preschools with typically developing peers based upon four sets of research findings. First, inclusive preschools provide a supportive and responsive context for implementing evidence-based practices. Second, inclusive settings occasion social interactions and communication among children with autism and their typically developing peers, which represent core skill deficits for children with autism. Third, the benefits of inclusive classrooms include generalization of social skills across people, which is an essential component of effective curricula for children with autism. Finally, research has documented more positive attitudes toward children with disabilities by typically developing peers when students with disabilities are included in the preschool environment. Not surprisingly, this shift in the location of services for children with autism has significantly influenced research and professional development for them. Most notably, recent research has shown children with autism benefit from inclusive classrooms when instruction is focused on teaching skills to help them function independently and is delivered in meaningful contexts by contingent, supportive, and responsive adults.

Professional development and implementation of evidence-based practices have emerged as major issues in early childhood autism. The escalating numbers of young children with autism entering schools each year have had a tremendous impact on professional development programs across a range of disciplines (e.g., education, school psychology, speech pathology). The need to train professionals to work with this population of students has required many professional development programs to evaluate their curricula and include educational assessment, programming, and collaboration for young children with autism. To ensure positive outcomes for young children with autism, these programs need high quality materials, which translate the current research base into information that professionals can use (Dunst & Trivette, 2009; Odom, 2009).

Implications for practitioners are threefold. First, currently there is a substantial shortage of practitioners with the assessment skills critical for early identification and intervention. Second, practitioners are often not aware of effective, newer practices. Third, practitioners from multiple disciplines need to collaborate and coordinate their efforts in order to maximize outcomes for children with autism. This text will describe current research on the etiology of autism, a range of effective assessment

procedures, approaches for meaningfully integrating family participation and supports in developing goals and interventions, procedures for intervention planning and implementation in natural settings, methods for promoting generalization and maintenance of skills, and strategies to promote collaboration and teaming across multiple disciplines. Thus, the primary focus of this book is to support practitioners working with young children with autism in the use of effective, evidence-based practices. This text will guide practitioners in identifying and implementing effective strategies that address the unique characteristics of children with autism and their families.