

Background and history of autism in relation to vision care

Joseph N. Trachtman, O.D., Ph.D.

Elite Performance and Learning Center, PS, Seattle, Washington.

KEYWORDS

Autism;
Asperger syndrome;
Opticokinetic
nystagmus;
Electroretinogram;
Evoked potential;
Optometry

Abstract Although autism existed before 1943, it was Leo Kanner who is credited with the first detailed description of autistic behavior. Before Kanner's report, the behavior was generally known as childhood schizophrenia. He noted that the outstanding common feature of all the children was certain parental personalities, like obsessiveness and lack of warm-heartedness. Concurrent with Kanner's report and observations were those of Asperger in 1944. However, Asperger's report, in a German-language journal, was not brought to the forefront until the 1980s. The children described by Asperger had milder forms of behavior disorders than those described by Kanner, with the resulting diagnosis of autism broadened and blurred. The main features of the new autistic spectrum included a triad of developmental deficiencies: recognition, communication, and understanding. Regardless of whose research is read, autistic behavior is considered peculiar and difficult to treat. Early treatments included LSD, tranquilizers, and developmental remediation. A later treatment, which proved to be the most successful, is applied behavior analysis (ABA), an outgrowth of B.F. Skinner's conditioning research. The etiology of autism remains a puzzle to scientists, with the most likely hypothesis being a central nervous system dysfunction. With regard to vision, people with autism tend to have abnormal electroretinograms, deficient evoked visual potentials, and atypical opticokinetic nystagmus. Other than a higher than expected incidence of strabismus and oculomotor deficiencies, refractive and binocular vision status of people with autism have been reported to be within normal ranges. Accordingly, the most useful tests for a patient with the diagnosis of autism are those for oculomotor function, opticokinetic nystagmus, and strabismus. The optometrist, thereby, becomes a member of the team helping to diagnose and treat the visual sequelae of autism.
Optometry 2008;79:391-396

In recent years there has been a dramatic increase in the prevalence of autism, of up to 472%.^{1,2} Accordingly, it is important for the optometrist to be aware of the nature of autism—particularly its history, etiology, treatment, and relation to vision.

Unlike a physical disease like tuberculosis, in which the diagnosis can be made by identifying the bacteria *Mycobacterium tuberculosis*, the diagnosis of autism, as with other disorders of behavior, is open to some controversy. Before Kanner,³ the unusual behaviors (now linked to autism) were

diagnosed as childhood schizophrenia. With the inclusion of Asperger's report,⁴ a milder form of Kanner's autism became known as Asperger syndrome. Later the terms *Autistic Spectrum Disorder* and *Pervasive Developmental Disorder Not Otherwise Specified* came into use.

With the inclusion of the additional diagnostic categories, the lines of diagnosis of autism became blurred. An example is found in Bishop's⁵ comprehensive discussion of the difficulty in making a diagnosis: he described a 4-year-old boy who was evaluated for language and social development by a multidisciplinary group consisting of a pediatric neurologist, a psychologist, a child psychiatrist, and a speech therapist. In the absence of any neurological signs, the pediatric neurologist made the diagnosis of dysphasia. The psychologist made the diagnosis of autism because of

Corresponding author: Joseph N. Trachtman, O.D., Ph.D., Elite Performance and Learning Center, PS, 108 5th Avenue South, Suite C1, Seattle, Washington 98104.

E-mail: tracht@accommotrac.com

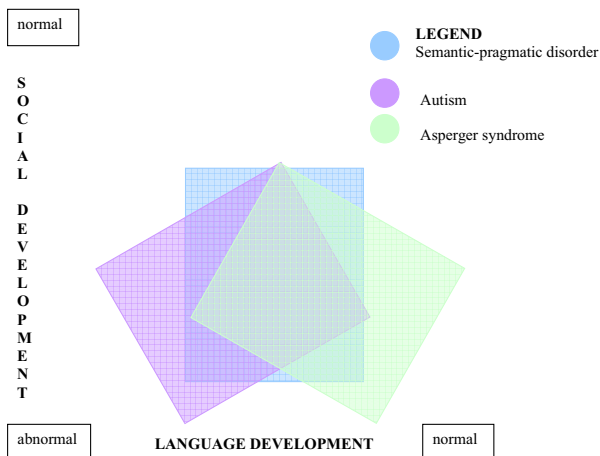


Figure 1 Diagnostic criteria diagram. The diagram graphically displays the difficulty with the overlapping diagnostic criteria among autism, Asperger syndrome, and semantic-pragmatic disorder, which are shown in the *gray*, *darker lavender*, and *darker green areas*, respectively.

poorly developed language and social behavior. A diagnosis of Asperger syndrome was made by the child psychiatrist because the child's language and social skills were not severe enough to make a diagnosis of autism. The speech therapist made a diagnosis of semantic-pragmatic disorder based on the child's poor conversational language skills. Finally, a visiting American pediatrician made a diagnosis of PDDNOS (Pervasive Developmental Disorder Not Otherwise Specified).

As noted in **Figure 1**, there is considerable overlap in the diagnostic criteria for autism, Asperger syndrome, and semantic-pragmatic disorder. This becomes a very important factor to the clinician, because, for example, all autistic patients will not be the same or even similar in some cases. In fact, there is a continuum as to the extent and severity of clinical signs that could be included under the diagnosis of autism. Perhaps one way to reduce some of the confusion in the diagnosis of autism is to trace the diagnostic criteria from that elaborated by Kanner³ until today. Kanner's initial report on autism in 1943 listed 10 characteristics of autistic children and their families:

1. The primary and most noted sign is the child's inability to relate to others.
2. Mothers of these children report that the children did not show an anticipatory posture before being picked up.
3. Eight of the 11 children began speaking either on time or afterward.
4. Typically, the children had excellent memories.
5. The children demonstrated echolalia (repetition of particular sounds).
6. Words were interpreted literally.
7. Personal pronouns were used inaccurately.
8. The children had unusual reactions to sensory stimuli.
9. The children had the desire to keep the world around them constant.
10. All the children were from intelligent families.

Two characteristics require further explanation: characteristics 3 and 10. In 3, although language and communica-

tion skills are below normal for autistic children, Kanner may have been referring to the observation that the children's speech developed normally and was then lost with the onset of the autism. In 10, Kanner defined "intelligent family" as parents who were college-educated.

Broader criteria for the diagnosis of autism were introduced by Rutter⁶ in these areas: (1) social development impairment, (2) faulty language development, (3) desire for sameness, and (4) onset before age 30 months. With the popularization of Asperger's work in 1981 by Wing,⁷ Asperger syndrome became a term for a milder form of autism than that described by Kanner.³

The current diagnosis and definition of autism is given by the DSM classification, DSM-III-R and DSM-IV Autism Criteria. As opposed to a well-defined, finite set of signs and symptoms, the DSM classifications are a menu of possible inappropriate behaviors, thus clouding the lines between autism and other disorders of behavior. In other words, the original criteria for the diagnosis of autism described by Kanner have been broadened substantially with the addition of Asperger syndrome, Rutter's criteria, and the establishment of the diagnosis of autistic spectrum disorder.

Incidence

Because the criteria for diagnosis of autism are often varied, so are the rates of the incidence of autism as reported by Wing.⁷ The range cited is from 1.2 to 16 per 10,000 in the United States, Europe, and Japan, and for the "autistic spectrum" as high as 47 per 10,000. A more current study reports that the recent changing criteria can result in an increase up to 28.8-fold⁸ or an incidence of 1 in 150.

Etiology

As with the variability in the diagnosis and incidence of autism, there is also a wide variety of proposed etiologies. Perhaps the best way to illustrate this point is to take the proposed theories of one noted autism researcher and his coworkers. Edward Ritvo has been a distinguished and well-recognized researcher for more than 2 decades. The fact that he and his coworkers have failed to identify a definitive etiology of autism emphasizes and illustrates the elusive nature of the etiology. Below is a review of a sample of his publications from 1971 to 1992.

One of the conclusions of Kanner³ (item 10), was that the parents of autistic children are intelligent. Following up on this theme, Ritvo et al.⁹ conducted a survey, in 1971, with 148 families of autistic children. Compared with a matched group, no significant relationship was found to exist between autism and social class factors. Later in the 1970s, a theory relating autism to dysfunction of the vestibular mechanism was proposed. Freeman et al.¹⁰ compared reinforcement of vestibular stimulation between autistic and

Download English Version:

<https://daneshyari.com/en/article/2700144>

Download Persian Version:

<https://daneshyari.com/article/2700144>

[Daneshyari.com](https://daneshyari.com)