In autism, age at diagnosis depends on specific symptoms

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The age at which a child with autism is diagnosed is related to the particular suite of behavioral symptoms he or she exhibits, new research from the University of Wisconsin–Madison shows.

Certain diagnostic features, including poor nonverbal communication and repetitive behaviors, were associated with earlier identification of an autism spectrum disorder, according to a study in the April issue of the *Journal of the American Academy of Child and Adolescent Psychiatry*. Displaying more behavioral features was also associated with earlier diagnosis.

"Early diagnosis is one of the major public health goals related to autism," says lead study author Matthew Maenner, a researcher at the UW–Madison Waisman Center. "The earlier you can identify that a child might be having problems, the sooner they can receive support to help them succeed and reach their potential."

But there is a large gap between current research and what is actually happening in schools and communities, Maenner adds. Although research suggests autism can be reliably diagnosed by age 2, the new analysis shows that fewer than half of children with autism are identified in their communities by age 5.

One challenge is that autism spectrum disorders (ASD) are extremely diverse. According to the criteria outlined in the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition – Text Revision

(DSM-IV-TR), the standard handbook used for classification of psychiatric disorders, there are more than 600 different symptom combinations that meet the minimum criteria for diagnosing autistic disorder, one subtype of ASD.

Previous research on age at diagnosis has focused on external factors such as gender, socioeconomic status, and intellectual disability. Maenner and his colleagues instead looked at patterns of the 12 behavioral features used to diagnose autism according to the DSM-IV-TR.

He and Maureen Durkin, a UW–Madison professor of population health and pediatrics and Waisman Center investigator, studied records of 2,757 8-year- olds from 11 surveillance sites in the nationwide Autism and Developmental Disabilities Monitoring Network, run by the Centers for Disease Control and Prevention (CDC). They found significant associations between the presence of certain behavioral features and age at diagnosis.

"When it comes to the timing of autism identification, the symptoms actually matter quite a bit," Maenner says.

In the study population, the median age at diagnosis (the age by which half the children were diagnosed) was 8.2 years for children with only seven of the listed behavioral features but dropped to just 3.8 years for children with all 12 of the symptoms.

The specific symptoms present also emerged as an important factor. Children with impairments in nonverbal communication, imaginary play, repetitive motor behaviors, and inflexibility in routines were more likely to be diagnosed at a younger age, while those with deficits in conversational ability, idiosyncratic speech and relating to peers were more likely to be diagnosed at a later age.

These patterns make a lot of sense, Maenner says, since they involve behaviors that may arise at different developmental times. The findings suggest that children who show fewer behavioral features or whose autism is characterized by symptoms typically identified at later ages may face more barriers to early diagnosis.

But they also indicate that more screening may not always lead to early diagnoses for everyone.

"Increasing the intensity of screening for autism might lead to identifying more children earlier, but it could also catch a lot of people at later ages who might not have otherwise been identified as having autism," Maenner says.

Provided by University of Wisconsin-Madison