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Getting the Point:

Investigating Key Behavioural Markers for Autism

EARLY DIAGNOSIS CAN REDUCE STRESS AND UNCERTAINTY AND GIVES FAMILIES THAT ALL-IMPORTANT EARLY ACCESS TO EFFECTIVE SERVICES AND SUPPORTS.

by Helen Penn

Learning that a child has autism is a difficult process for most families.

EVEN THOUGH AUTISM can be reliably diagnosed by the age of 2, most children are not diagnosed until they are 3 or 4 or older. Children at risk for autism may be seen by many professionals – doctors and preschool teachers – before receiving a diagnosis. It is important for these professionals to learn about key behavioural markers associated with autism so that children can be referred for diagnostic assessments as early as possible. As a doctoral student funded by Autism Ontario, I was part of a research team investigating key behavioural markers for autism in preschool children with cognitive delays.

We assessed children with autism and Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS) using a short screening measure called the Checklist for Autism in Toddlers (CHAT) – 14 yes/no questions taking about 15 minutes to complete. Nine questions are scored by interviewing parents and five are scored by observing the child. Children are placed in either high risk or medium risk categories based on their scores on three key items: pretend play, protodeclarative pointing and gaze monitoring (see box).

Babies usually begin to show signs of pretend play, protodeclarative pointing and gaze monitoring between the ages of 9 and 14 months. However, children with autism have difficulty with these behaviours. In addition, the CHAT measures other behaviours that might be impaired in children with autism, such as taking an interest in other children, making eye contact, showing objects to others, and taking part in social games such as peek-a-boo and hide and seek.

> It is important that professionals do not rule out a possible ASD diagnosis when children do make eye contact or show interest in social games, as these behaviours appear to be present to some degree in many children on the spectrum.

The CHAT was designed for use at 18 months, and researchers have already examined its utility for that age group. However, no previous research has looked at the suitability of the CHAT for older preschoolers. We were interested in learning whether preschool children with autism and cognitive delays would meet high risk and medium risk criteria on the CHAT. In addition, we wanted to find out whether there were specific items on the CHAT that were frequently failed by children with autism or PDD-NOS. This would help us to know more about key behavioural markers for Au-

tism Spectrum Disorder (ASD) that professionals should be aware of when interacting with preschool children.

Forty-one children with autism and 15 children with PDD-NOS participated in this study. Children were between the ages of 2 and 5 and had cognitive delays in the mild to profound range (as is common in up to 75 percent of children with autism and many children with PDD-NOS). Data was collected during routine diagnostic assessments in both Toronto and Ottawa. Ethics committees approved the project and participating families gave consent for the data to be used for research.

During the study, each child was assessed using diagnostic measures to ensure that they met criteria for autism or PDD-NOS. In addition, a number of measures were used to assess children's cognitive and daily living skills. Most importantly, the CHAT was completed for each child. Psychologists interviewed parents to complete the first section of the CHAT and psychometrists interacted with children to complete the second (observational) part of the checklist.

To answer our first research question, we calculated the proportion of children with autism in our sample who met high risk and medium risk criteria on the CHAT. Deficits in pretend play, protodeclarative pointing and gaze monitoring were needed to meet high risk criteria, while deficits in protodeclarative pointing alone were sufficient to meet medium risk criteria. In our sample, 54 percent of children with autism met high risk criteria and 88 percent met medium risk criteria. As a result of our research, we learned that the CHAT may be a useful screening tool for detecting autism in preschoolers who have cognitive delays, even though it was designed for use with younger children.

For a better understanding of key behavioural markers associated with ASD, we calculated the percentage of children in each diagnostic group that failed individual items on the CHAT. Results indicated that over 80 percent of children with autism had difficulty with items related to protodeclarative pointing and pretend play. In addition, over 80 percent of these children failed an item that involved bringing objects to show others. In our smaller sample of children with PDD-NOS, over 80 percent of children had difficulty with protodeclarative pointing, but other items were failed less frequently. Interestingly, less than 20 percent of children in both diagnostic groups failed an item on the CHAT that involved making eye contact, and fewer than 35 percent failed an item that involved showing an interest in social games such as peek-a-boo.

These results tell us that pretend play, protodeclarative pointing and bringing objects to show are key behavioural markers for autism. We also learned that protodeclarative pointing may be a key behavioural marker for PDD-NOS. Professionals working with young children should consider impairments in these areas to be warning signs for a possible ASD diagnosis and ensure that children are referred to appropriate diagnostic services. It is also important that professionals do not rule out a possible ASD diagnosis when children do make eye contact or show interest in social games, as these behaviours appear to be present to some degree in many children on the spectrum.

It will be important for future researchers to develop screening tools to detect autism in children of specific ages and cognitive levels. Increased awareness of the early signs of autism will help more families to receive supports and services as early as possible.

Helen Penn is a recipient of the 2005 Autism Ontario Stimulus Grant for Graduate Study in ASD.

Key Markers for Diagnosing Autism

Pretend play: the observable use of imagination. A child engages in pretend play when he pretends to feed a toy or to talk on the telephone.

Protodeclarative pointing: pointing to show. A child uses protodeclarative pointing when she points to show her dad an airplane or points to show her mom that her brother has fallen down.

Gaze monitoring: following the eye gaze of another. A child engages in gaze monitoring when he follows his teacher's eyes to the door or follows his sister's eyes when she turns away.

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