Children with Asperger's Syndrome

By Kristin Cobos

Asperger's syndrome (AS) is a developmental disorder commonly referred to as a form of "high-functioning" autism and falls under the umbrella of autism spectrum disorders. Autism spectrum disorders are a distinct group of neurological conditions characterized by abnormal, repetitive and restricted cognitive, linguistic, and social skills and behavior. AS was originally described by Hans Asperger in Vienna in 1944 and is characterized by peculiar verbal and non-verbal communication skills; inappropriate social and emotional behavior; stereotyped, repetitive routine and/or ritualistic behavior; uncoordinated motor skills; and restricted interests. However, a concrete clinical and diagnostic standard for AS eludes many scientists, therapists and doctors. Autism spectrum disorders are believed to exist on a continuum. Currently, one in four hundred births are diagnosed as AS; however, due the lack of diagnostic and clinical standards, it is unclear where certain manifestations of the syndrome fit on the AS continuum.

Cognition

AS is differentiated from other disorders in the autism spectrum by examining the child's early development. Current research into the cognitive skills of children with AS shows that cognitive delay is not necessarily manifested in early childhood. In fact, one major distinction between AS and autism is that 70% of those diagnosed with autism have mental retardation. This is not the case for children diagnosed with AS who have shown excellent rote memory skill and often become extremely interested in subjects such as, history or music.

When looking at cognition vis-à-vis AS, it is important to understand the cognitive model, Theory of Mind (ToM), a hypothesis which refers to the cognitive mechanism that a human uses in order to relate to different mental states and beliefs experienced by another. There are two aspects of ToM. The first aspect concerns human relating and empathizing: a person is able to infer the thoughts of another person. This mechanism develops by the age of four. The second aspect deals with reasoning: a person is able to comprehend intended meaning and comprehend what someone, other than the self, thinks about other people. Developing a theory of mind allows a child to understand

others' beliefs and predict others' actions. This meaning can include both sentence meaning as well as non-verbal communicative devices such as gestures and facial expressions. Those children with AS have an impaired functionality with regard to ToM.

Another important aspect of cognition and AS, is the manner in which sensory information is regulated, a process called sensorimotor gating. Sensorimotor gating refers to the brain's ability to regulate the transmission of sensory information to the motor system. Current research suggests that when this gating is impaired it might explain certain abnormalities in social and motor behavior. Mc Alonan et al (2002) found that abnormalities in fronto-striatal pathways in people with AS contribute to the dysfunction of sensorimotor gating, thereby resulting in the characteristic repetitive, routine and obsessive thought patterns, speech and actions.

A study by Wendt et al (2005) also supports this notion. Their study concludes that when sensory processing is impaired, as it is found in children and adults with AS, it will manifest as hypersensitivity to touch, noise, bright lights, and strong smells. Eating patterns have also been shown to be affected. There is an over representation of eating disorders, such as anorexia nervosa, in AS.

Current research also provides evidence that those with AS experience rapid growth of the brain, followed by a period of decelerated development. The Mc Alonan et al. (2002) study also found that the physical structure of the brain was different in those with AS. They were found to have significantly less grey matter, which contains nerve cell bodies, in fronto-striatal and cerebellar regions. The study also found differences in white matter, the part of the brain that contains myelinated nerve fibers. Finally, Mc Alonan's study found that ageing of the brain differs in those with AS. Investigators also believe that for those with AS, the ability to connect distinct zones within the brain, is made more slowly or not at all.

Differences in connectivity in the limbic circuits of the brain have also been identified for those with AS. The limbic system plays a role in the production and regulation of emotions. McAlohan's et al, study (2005) also found that impairments in both the anatomy and connectivity of limbic area of the brain to other systems may result in metabolic and behavioral differences in the subject which in turn, affects the social skills of children with AS.

Social Skills

Children with AS have functional social skills in terms of adaptation to and curiosity about their environment. However, these children lack appropriate social and emotional responses and have difficulty with empathy and reciprocity. They also have difficulty in identifying social cues. This will often times result in social isolation, either self-imposed or isolation by peers due to their seemingly peculiar behavior. Other social behaviors which make it difficult for the child with AS to develop peer relationships are their excessive focus on a single object of interest to the child. This is one of the most distinguishing symptoms of AS, as are inflexible routines and repetitive motor behaviors. Overall, children with AS have the motivation to socialize, but socialization is more often than not, one-sided, as they tend to only talk about the topic of interest to them.

Language

For those with AS, cognitive and communicative development are within the normal or near-normal range in the child's first years. This is one of the distinguishing factors of AS from other disorders on the autism spectrum and contributes to a later diagnosis of AS as compared with autism. Autism is usually diagnosed around the age of three, whereas AS usually is not diagnosed until the child is six or seven years of age. Those diagnosed with autism have overtly impaired verbal communication skills and are not able to compensate by using other forms of non-verbal communication, such as gestures.

For those with AS, verbal skills are usually an area of relative strength. There is no clinical retardation of language skills and development. Conversely, those with AS often times have a highly pedantic style, characterized by sophisticated vocabulary and formal speech patterns of language and they are very literal in their language use. Subtler uses of language and implied meaning, such as sarcasm and irony, elude those with AS. Furthermore, those with AS differ in language development in terms pragmatics, which logically follows from an impaired ToM and the inability to understand a speaker's meaning.

Other areas of difficulty in discourse include discussion and topic initiation, maintaining conversation and strategies for terminating conversation. Conversation tends to revolve around the person with AS. Children with AS want to know everything about their topic of interest, spending much time acquiring facts and information about their topic of choice. As previously mentioned, their conversations with others will be about little else.

Twin studies are often used to determine the heritability of disorders and have provided much evidence regarding both autism and developmental language disorders. Studies done with identical twins showed that twins, both with AS, may differ in terms of both cognitive and motor skills. Currently researchers are investigating language difficulties as they relate to a genetic link between gene 7 and autism spectrum disorders. These studies are exploring loci on 7q31 as a possible cause of both the expressive and receptive language difficulties found in autism and other language disorders such as, Specific Language Impairment(SLI) (Folstein, 2000).

Non-verbal communication is also affected in those with AS. Some common non-verbal abnormalities include little or no eye contact, rigid body posture, and abnormal gestures. Intonation of the voice carries little emotion and is usually monotone. Frequently, those with AS have little control over pitch and modulation and thus it is hard for them to match their voice to the appropriate volume called for by the social context. For example, a child with AS will have a difficult time maintaining a low volume in a library.

Those with AS also show little change in facial expression. When people are attempting to understand facial expressions, they will focus on the speaker's eyes, nose, and mouth. Those with AS will focus on the side of the face. They are unable to read facial expression and look for information indicated by other non-verbal expressions. Many researchers are beginning to find that this is a key difference in the criteria used to differentiate AS from other disorders on the autism spectrum. As previously mentioned, controversies surrounding standard diagnostic criteria usually boil down to diagnostic discrepancies. Researchers are calling for expansion of diagnostic standards, as the current criteria for diagnosing AS exclude sensory difficulties. According to a study by Wendt et al (2005), facial recognition difficulties play a large role in the diagnosis of

those with AS. The study found that difficulties with face recognition occurred in 46.6% of the individuals with AS, compared with 10.7% in the control group - family members without AS.

Family life

Asperger's syndrome is a disorder which does not only affect the child who has it. Since diagnosis, in most cases, does not immediately take place, often times the families of those with AS struggle with confusion and feel they are alone in the fight for their child. There are very few resources available and those resources that are available are difficult to access if the families themselves do not understand what is happening with their child. Even after diagnosis, which provides many caretakers with a sense of closure and peace, families commonly still struggle with depression. A study conducted by Dr. Marion O'Brien, director of the Family Research Center at the University of North Carolina-Greensboro, interviewed 63 mothers of children with autism spectrum disorders, including Asperger's syndrome. Her findings showed that some mothers hold them selves more responsible for their child's AS than others. She refers to these mothers as having higher levels of "identity ambiguity." These mothers blame themselves for their child's autism and experience greater levels of depression and stress. The study found in addition to depression and stress, mothers experienced what she refers to as "ambiguous loss" caused by the expectation of having a child who is not different from others. O'Brien calls for the need for families to find hope for their children's future, while at the same time recognizing that the children have a disorder which is serious. (Norton, 2007).

Education

Educational issues are many for children with Asperger's, their parents, therapists and teachers. The child is aware of impaired social interaction, which often times results in the AS child being the victim of bullying. Bullying, in turn causes anxiety, fear, and suspicion in the child with AS. The child may try to overcome her/his impaired social skills, however, these efforts usually fail.

Children with AS also have difficulties with their studies. They usually focus on their own interests and specific routines, independent of the teachers' instructions and the activities of the rest of the class.

Changes in education must take place at home, in the clinic, and at school-- the three places where the child with Asperger's must have her or his needs met. Current research shows the necessity of routine and ritual for children with AS. In order to cultivate verbal communicative abilities, activities should be included which provide and stimulate structured dialogue with parents, therapists, and teachers. Focused activities involving pragmatic structures of language should also be developed. The child should be exposed to contextual language use. These activities should show similar language patterns as they might be used in a variety of contexts, thus helping the child perceive the subtleties of language use, according to context. It is in this way, that the child with AS can better learn what is appropriate and what is not. This same notion can also be applied to the development of non-verbal communication skills. There should be an increase of activities which involve understanding and making gestures; looking for signals on the face. These activities should also be contextual.

Conclusion

Asperger's syndrome is a disorder which, in many ways, is still very ambiguous. Research is beginning to shed much light on this disorder in terms of cognition, social behavior and linguistic skills, both verbal and non-verbal. However, proper diagnosis is still hard to achieve. The diagnostic dilemmas faced by the medical profession are due to lack of easily definable criteria, a concrete diagnostic standard and therefore, uniformity. According to Frith, a well known researcher of autism spectrum disorders, "In defining clinical categories two kinds of error are common: the categories aimed at are too small and leave the majority of patients unaccounted for, or they are too large and do not differentiate patients who, in most clinicians' opinions, present different types of problems. In autistic spectrum disorders the twin dangers are omnipresent, accounting for pendulum swings between over-inclusion and ultra-specificity."

Complicating this matter even more is the fact that many of the cognitive and linguistic markers of AS appear relatively late, with the result that many of the children

suffering from this disorder are not diagnosed until much later in childhood and therefore do not receive the proper help. This can cause much anguish for these children and their caretakers. Even once a diagnosis is given, the child will still face many obstacles: social isolation, bullying and an educational curricula which, fails to give these children the skills and support they need to survive as adults. It will take a concerted effort on the part of the parents, therapists teachers and medical professionals to fight for the rights of children with Asperger's and overcome the obstacles they face.

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