Understanding Asperger Syndrome

By: Kathryn Brohl, MA , LMFT

Learning objectives

This workshop is designed to help you:

• Describe symptoms and impact of Asperger Syndrome (AS).
• Apply updated DSM-5 criteria and information.
• Analyze the levels of severity for AS.
• Assess current AS treatment options.

Introduction: What is Asperger syndrome?

Asperger syndrome (AS), a developmental disorder, is considered to fall under the umbrella of autism spectrum disorder (ASD). Until May 22, with the official release of the DSM-5, Asperger’s was considered related to but distinct from autism. DSM-5 contains a new disorder that replaces both the old autistic disorder and Asperger’s.

Autism spectrum disorder (ASD) is typically characterized by:

• Impairment in language and communication skills
• Impairment in the use of nonverbal behaviors:
• Repetitive or restrictive patterns of thought.
• Inflexible adherence to routines, rituals.
• Socially or emotionally inappropriate behavior.
• Difficulty with sensory integration issues.
• Sensitivity to noises, food, clothing, or smells.

Using DSM-IV, patients could be diagnosed with four separate disorders: autistic disorder, Asperger’s disorder, childhood disintegrative disorder, or the catch-all diagnosis of pervasive developmental disorder not otherwise specified. Researchers found that these separate diagnoses were not consistently applied across different clinics and treatment centers. Anyone diagnosed with one of the four pervasive developmental disorders (PDD) from DSM-IV should still meet the criteria for the newly defined Autism Spectrum Disorder (ASD) in DSM-5 or another, more accurate DSM-5 diagnosis. While DSM does not outline recommended treatment and services for mental disorders, determining an accurate diagnosis is a first step for a clinician in defining a treatment plan for a patient. (American Psychiatric Association, 2013)

The new autism spectrum disorder criteria include impaired social communication or social reciprocity, which could mean difficulty making eye contact, a lack of facial expression or no interest in one’s peers. Peculiar behaviors or interests, which are technically described as “restricted, repetitive” in the DSM-5, make up the second criterion. These could include hand flapping, insistence on a strict routine or a fixation on a specific subject, such as trains.

This change made to diagnoses of autism and Asperger’s has been among the highest profile and most controversial in the new DSM-5. A study, published in April 2012 using a preliminary version of the new DSM-5 autism spectrum criteria found about 75 percent of patients who had been diagnosed with Asperger’s under the old criteria would no longer qualify for a diagnosis, raising the possibility that they could lose access to services, such as special education in schools.

Asperger’s syndrome is not recognized as a mental disorder by the DSM-5. However, it is important to note that while psychologists cannot use Asperger’s as a mental health diagnosis, the symptoms, specialized treatment, and the use of the diagnosis and terms are still prevalent in our society. It is still actively used by physicians, support groups/services, social workers, occupational therapists, physical therapists, and behavioral therapists. Certain symptoms of Asperger’s syndrome may fall under the criteria for a diagnosis of Autism. Additionally, Asperger’s is still recognized The World Health Organization ICD-10 criteria.

ICD-10 was endorsed by the Forty-third World Health Assembly in May 1990 and came into use in WHO Member States as from 1994. The 11th revision of the classification has already started and will continue until 2015 (World Health Organization, 2013). We will further assess diagnosis criteria within the Diagnosis section of this workshop.

The symptoms of Asperger’s syndrome vary and can range from mild to severe. Common symptoms include:

1. Problems with social skills: Children with Asperger’s syndrome generally have difficulty interacting with others and often are awkward in social situations. They generally do not make friends easily. They have difficulty initiating and maintaining conversation.
2. Eccentric or repetitive behaviors: Children with this condition may develop odd, repetitive movements, such as hand wringing or finger twisting.
3. Unusual preoccupations or rituals: A child with Asperger’s syndrome may develop rituals that he or she refuses to alter, such as getting dressed in a specific order.
4. Communication difficulties: People with Asperger’s syndrome may not make eye contact when speaking with someone. They may have trouble using facial expressions and gestures, and understanding body language. They also tend to have problems understanding language in context and are very literal in their use of language.
5. Limited range of interests: A child with Asperger’s syndrome may develop an intense, almost obsessive, interest in a few areas, such as sports schedules, weather, or maps.
6. Coordination problems: The movements of children with Asperger’s syndrome may seem clumsy or awkward.
7. Skilled or talented: Many children with Asperger’s syndrome are exceptionally talented or skilled in a particular area, such as music or math.

What distinguishes Asperger’s Disorder from Autism are the less severe symptoms and the absence of language delays. Children with Asperger’s Disorder may be only mildly affected and frequently have good language and cognitive skills. To the untrained observer, a child with Asperger’s Disorder may just seem like a normal child behaving differently. (Autism Society, 2014)

Children with autism are frequently seen as aloof and uninterested in others. This is not the case with Asperger’s Disorder. Individuals with Asperger’s Disorder usually want to fit in and have interaction with...
others; they simply don’t know how to do it. They may be socially awkward, not understand conventional social rules, or show a lack of empathy. They may have limited eye contact, seem unengaged in a conversation, and not understand the use of gestures.

Interests in a particular subject may border on the obsessive. Children with Asperger’s Disorder frequently like to collect categories of things, such as rocks or bottle caps. They may be proficient in knowledge categories of information, such as baseball statistics or Latin names of flowers. While they may have good rote memory skills, they have difficulty with abstract concepts.

One of the major differences between Asperger’s Disorder and autism is that, by definition, there is no speech delay in Asperger’s. In fact, children with Asperger’s Disorder frequently have good language skills; they simply use language in different ways. Speech patterns may be unusual, lack inflection or have a rhythmic nature, or may be formal, but too loud or high-pitched. Children with Asperger’s Disorder may not understand the subtleties of language, such as irony and humor, or they may not understand the give-and-take nature of a conversation. (Autism Society, 2014)

Another distinction between Asperger’s Disorder and autism concerns cognitive ability. While some individuals with autism have intellectual disabilities, by definition a person with Asperger’s Disorder cannot possess a “clinically significant” cognitive delay and most possess average to above average intelligence.

While motor difficulties are not a specific criterion for Asperger’s, children with Asperger’s Disorder frequently have motor skill delays and may appear clumsy or awkward.

**Diagnosis**

Diagnosis of Asperger’s Disorder has increased in recent years, although it is unclear whether it is more prevalent or more professionals are detecting it. When Asperger’s and autism were considered separate disorders under the DSM-IV, the symptoms for Asperger’s Disorder were the same as those listed for autism; however, children with Asperger’s do not have delays in the area of communication and language. In fact, to be diagnosed with Asperger’s, a child must have normal language development as well as normal intelligence. The DSM-IV criteria for Asperger’s previously specified that the individual must have “severe and sustained impairment in social interaction, and the development of restricted, repetitive patterns of behavior, interests and activities that must cause clinically significant impairment in social, occupational or other important areas of functioning.”

The first step to diagnosis is an assessment, including a developmental history and observation. This should be done by medical professionals experienced with autism and other PDDs. Early diagnosis is also important as children with Asperger’s Disorder who are diagnosed and treated early in life have an increased chance of being successful in school and eventually living independently.

Many individuals may wish to retain their (or their child’s) previous diagnosis of Asperger’s Syndrome due to the fact that the label is considered part of their identity or may reflect a peer group with whom they identify. This is perfectly acceptable. A clinician can indicate both the DSM-5 diagnosis as well as the previous diagnosis, such as Asperger syndrome, in an individual’s clinical record.

The DSM-5 text states “Individuals with a well-established DSM-IV diagnoses of autistic disorder, Asperger’s disorder, or pervasive developmental disorder not otherwise specified should be given the diagnosis of autism spectrum disorder” (APA, 2013).

Children with AS often exhibit:

- A limited capacity for empathy.
- A failure to develop friendships.
- A limited number of intense and highly focused interests.
- Superior rote memory.
- Extensive vocabulary.

Unlike children with classic autism, children with AS tend to retain their early language skills, often having large vocabularies for their age. Also, individuals with AS tend not to experience severe intellectual impairments as compared to individuals with other ASDs. Testing of individuals with AS tends to reveal IQ’s in the normal to superior range, although some persons with AS have been reported to be mildly retarded. There are some similarities with classic autism without the diagnosis of mental retardation (higher functioning autism or HFA), and the issue of whether Asperger syndrome and HFA are different conditions has not been adequately resolved.

Parents and caregivers are usually able to detect signs that there is something unusual about a child with AS by the time of his or her third birthday, although some children may display signs and symptoms of AS as early as infancy. Unlike children with classic autism, children with AS will retain their early language abilities.

Sometimes the earliest indicators of AS are motor development delays. The child may sometimes have difficulty crawling, will walk late, and is sometimes seen as clumsy, both in articulation and gross motor behavior. Sensory integration issues are often evident in this population. Difficulties with clumsiness are exhibited in a variety of areas including:

- Locomotion.
- Basic skills (catching, throwing, and kicking).
- Balance.
- Manual dexterity issues (such as handwriting).
- Inability to take slow, considered approaches to activities.
- Lax joints.
- Rhythm.

Many individuals with AS are at risk for developing a wide range of mood disorders, including anxiety or depression, especially during the emotionally difficult years of adolescence.

In terms of strengths, individuals with AS can have normal or superior intelligence, and they are often able to make great intellectual contributions despite severe social problems such as insensitivity or indifference toward others. Brasic (2006) noted that there are case reports and studies of men with AS that suggest the ability to accomplish cutting-edge research in fields such as computer science, mathematics and physics. Many individuals with AS can and have experienced positive outcomes, especially in areas not dependent solely upon social interaction. Outstanding skills in mathematics and computer science are sometimes seen in persons with AS, and these individuals are often extremely good on rote memory skills such as dates, facts and figures.

**History of Asperger syndrome**

As a diagnosis, AS has been known in Europe since the 1940s when it was described by a Viennese pediatrician, Hans Asperger. Dr. Asperger reported observing four children in his practice who had difficulty in social situations. Although appearing normal in terms of intelligence, these children appeared to lack nonverbal communication skills, failed to demonstrate empathy for their peer group and were physically clumsy.

Dr. Leo Kanner first published a paper in 1943 identifying autistic children. Kanner noted that these children (eight boys and three girls) often demonstrated capabilities that did not seem to fit the patterns of other emotionally disturbed children. Although Dr. Asperger was unaware of Leo Kanner’s work on autism, he did use the term “autistic psychopathy” to describe the social deficits he observed in a group of boys. His original description, in German, was essentially unknown.
in the English literature for many years. The work of Lorna Wing increased interest in the condition here in the United States. Since then, both the term Asperger syndrome and the number of research studies on AS have increased steadily.

While AS was recognized in Europe nearly 60 years ago, it was first recognized as a unique diagnosis by the American Psychiatric Association in the Diagnostic and Statistical Manual of Mental Disorders in the fourth edition published in 1994. Recognition in the DSM followed an international field trial involving more than 1,000 children with classic autism and related disorders. The field trials provided evidence justifying the addition of Asperger syndrome as a diagnostic category separate from autism, under the diagnostic class of pervasive developmental disorders (PDD).

Before the publishing of the diagnostic standards by the World Health Organization (1990) and the American Psychiatric Association (1994), the main diagnostic criteria was provided by either Gillberg and Gillberg, or Szatmari et al, both published in 1989.

DSM-5: The inclusion of Asperger Syndrome within Autism Spectrum Disorder (ASD)

In 2013, the newest revision to the Diagnostic and Statistical Manual of Mental Disorders (DSM) developed by the American Psychiatric Association eliminated Asperger Syndrome as its own diagnosis and placed it under the umbrella of generalized diagnosis met by the new criteria for Autism Spectrum Disorder.

There are two domains where people with ASD must show persistent deficits. They include 1) persistent social communication and social interaction, and 2) restricted and repetitive patterns of behavior.

More specifically, people with ASD must demonstrate (either in the past or in the present) deficits in social-emotional reciprocity, deficits in nonverbal communicative behaviors used for social interaction, and deficits in developing maintaining and understanding relationships. In addition, they must show at least two types of repetitive patterns of behavior including stereotyped or repetitive motor movements, insistence on sameness or inflexible adherence to routines, highly fixed interests or hyper or hyper reactivity to sensory input or unusual interest in sensory aspects of the environment. (Autism Society, 2014)

Under the new DSM-5, clinicians should also rate the severity of these deficits, based what level of support they require.

Changes brought forth by the DSM-5 include:

- The new classification system eliminates the previously separate subcategories on the autism spectrum, including Asperger syndrome, PDD-NOS, childhood disintegrative disorder and autistic disorder. These subcategories will be folded into the broad term autism spectrum disorder (ASD).

DSM-IV-TR diagnostic criteria for Asperger syndrome

The DSM-IV-TR criteria for diagnosis of Asperger disorder (299.80) are similar to that for autistic disorder except they do not include the communication problem areas seen frequently in autistic populations. Official DSM-IV-TR criteria include the presence of:

- Qualitative impairment in social interaction, as manifested by at least two of the following:
  - 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.
  - Failure to develop peer relationships appropriate to developmental level.
  - A lack of spontaneous seeking to share enjoyment, interests or achievements with other people (e.g., by a lack of showing, bringing or pointing out objects of interest to other people).
  - Lack of social or emotional reciprocity.
  - Restricted repetitive and stereotyped patterns of behavior, interests and activities as manifested by at least one of the following:

- Encompassing preoccupation with one or more stereotyped and restricted pattern of interest that is abnormal either in intensity or focus.
- Apparently inflexible adherence to specific, nonfunctional routines or rituals.
- Stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements).
- Persistent preoccupation with parts of objects.
- The disturbance causes clinically significant impairment in social, occupational or other important areas of functioning.
- There is no clinically significant general delay in language (e.g., single words used by age 2, communicative phrases used by age 3).
- There is no clinically significant delay in cognitive development or in the development of age-appropriate self-help skills, adaptive behavior (other than in social interaction) and curiosity about the environment in childhood.
- Criteria are not met for another specific pervasive developmental disorder or schizophrenia.

ICD-10 Criteria for Asperger’s syndrome

ICD-10 is the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD), a medical classification list by the World Health Organization (WHO). It codes for diseases, signs and symptoms, abnormal findings, complaints, social circumstances, and external causes of injury or diseases.

The code set allows more than 14,400 different codes and permits the tracking of many new diagnoses. The codes can be expanded to over 16,000 codes by using optional sub-classifications. The detail reported by ICD can be further increased, with a simplified multi-axial approach, by using codes meant to be reported in a separate data field.
The following information is reproduced verbatim from the ICD-10 Classification of Mental and Behavioral Disorders, World Health Organization, Geneva, 1992.

**F84.5 Asperger’s syndrome**
A disorder of uncertain nosological validity, characterized by the same kind of qualitative abnormalities of reciprocal social interaction that typify autism, together with a restricted, stereotyped, repetitive repertoire of interests and activities. The disorder differs from autism primarily in that there is no general delay or retardation in language or in cognitive development. Most individuals are of normal general intelligence, but it is common for them to be markedly clumsy; the condition occurs predominately in boys (in a ratio of about eight boys to one girl). It seems highly likely that at least some cases represent mild varieties of autism, but it is uncertain whether that is so for all. There is a strong tendency for the abnormalities to persist into adolescence and adult life and it seems that they represent individual characteristics that are not greatly affected by environmental influences. Psychotic episodes occasionally occur in early adult life.

**Diagnostic guidelines**
Diagnosis is based on the combination of a lack of any clinically significant general delay in language or cognitive development plus, as with autism, the presence of qualitative deficiencies in reciprocal social interaction and restricted, repetitive, stereotyped patterns of behavior, interests and activities. There may or may not be problems in communication similar to those associated with autism, but significant language retardation would rule out the diagnosis.

It includes:
- Autistic psychopathy.
- Schizoid disorder of childhood.

**Onset**
The apparent onset of the condition, or at least its recognition, is probably somewhat later than classic autism. According to the information provided by the Asperger Syndrome Coalition of the United States, a large number of children are diagnosed after the age of 3, with most diagnosed between the ages of 5 and 9. The delay in diagnosis has been attributed to the relatively more preserved language skills and cognitive functioning found in individuals with AS.

**Etiology (pathophysiology)**
The pathophysiology of Asperger disorder is unknown. It is somewhat likely that multiple genetic factors cause AS. It has been hypothesized that events in early development may play a role in the development of Asperger disorder.

At this juncture, the medical community has been unable to agree on the causes of AS, though there is a growing body of evidence (generally though twin and family studies) that suggests a strong genetic component.

Some studies have linked AS to structural abnormalities in the brain, specifically neural circuits that have an impact on thought and behavior. A recent study by the University of California suggests that AS stems from abnormal changes that happen in the brain during critical stages of fetal development. One study is using functional magnetic resonance imaging (fMRI) to show how abnormalities in particular areas of the brain cause changes in brain function that result in the symptoms of AS and ASDs. There is no evidence to suggest that AS is caused by emotional deprivation, maltreatment or neglect.

**Prevalence (epidemiology)**
The incidence of AS has not been well established. Estimates of the prevalence of AS vary widely in the United States. Studies suggest that between two to 36 children out of every 10,000 have this disorder, with four out of every 10,000 as the most quoted statistic. Although the condition was originally reported only in boys, reports of girls with the syndrome have now appeared. However, boys are significantly more likely to be affected, and it is estimated that boys are four times more likely than girls to have AS. However, it is also speculated that girls are underdiagnosed. There is no evidence that suggests that individuals with AS have less-than-normal life spans. There is no race predilection related to the prevalence of AS. It is estimated that over 400,000 families in the United States are affected by AS. However, now that AS has been absorbed by the diagnosis of Autism Spectrum Disorder via the DSM-5, this number is now more difficult to estimate.

**Asperger’s syndrome vs. high functioning autism (HFA)**
In some circles, AS has been described as high functioning autism (HFA). More recent work has gone into differentiating the two diagnoses. It is believed that in Asperger’s disorder:
- Onset is usually later than with HFA.
- Outcome is usually more positive, with many individuals able to function on their own upon reaching adulthood.

- Social and communication deficits are less severe than with HFA.
- Restricted patterns of interest are generally more prominent with AS.
- Verbal IQ is usually higher than performance IQ (in most cases of autism, the case is usually the reverse).
- Motor clumsiness is more frequently seen in AS.
- Neurological disorders are less common.

**Assessment of Asperger syndrome**
In order to properly assess and diagnose the presence of AS in an individual, the clinician must complete a detailed history and assessment including:

Development history:
- Prenatal history.
- Maternal health factors.
- Beginning from birth an evaluation of:
  - Social behaviors.
  - Language.
  - Interests.
  - Routines.
  - Physical coordination (often learning to walk a few months later than expected).
  - Sensory sensitivity issues.

Social history:
- Difficulty with peer relationships.
- Rejection by other children.
- Inappropriate attempts to initiate social interaction and to make friends.
- May not display affection to family members.
- Separations, divorce and other changes may be particularly stressful.
- May have difficulty in dating, marriage and intimate relationships.
- May exhibit socially inappropriate behavior.
- Fails to understand social cues.
- May not understand why people become upset when he or she violates social rules and norms.

Communication issues:
- Use of gestures is frequently limited.
- Body language (nonverbal communication) may be awkward and/or inappropriate.
- Facial expressions may be absent or at times, inappropriate.
- Problems with language pragmatics (social use of language).
- At times may interpret language literally.
- Has difficulty with:
  - Idioms.
  - Double meanings.
  - Sarcasm.
- Speech and hearing functioning:
  - Demonstrates several abnormalities in speech, including:
    - Pedantic speech.
    - Oddities in pitch, intonation, pronunciation and rhythm.

Sensory integration issues:
- May be sensitive to:
  - Sound.
  - Touch.
  - Taste.
  - Sight.
  - Smell.
  - Pain.
  - Temperature.

Activities assessment:
- Peculiar and narrow interests.
- Interests may be so focused that the individual does not develop normal relationships.

Physical issues:
- Lax joints (exhibited as immature or unusual grasp).
- Clumsiness (though not unique to individuals with AS).
- Odd motor mannerisms such as:
  - Hand flapping.
  - Awkward body movements.
- Abnormalities of:
  - Basic skills.
  - Locomotion.
  - Balance.
  - Manual dexterity.
  - Handwriting.
  - Rapid movements.
  - Rhythm.
  - Imitation of movements.

There are several instruments in use to diagnose the presence of AS in individuals. The Adult Asperger Assessment (AAA), the Childhood Asperger Syndrome Test (CAST), the Asperger Syndrome Diagnostic Scale (ASDS), the Gilliam Asperger’s Disorder Scale (GADS), and a variety of autism tests can be used to diagnose the presence of AS.

Characteristics of Asperger syndrome in adolescence

It can be difficult to recognize, assess and diagnose symptoms of AS during the adolescent years. This may be due in part to the considerable comorbidity issues that may arise during the adolescent years. Teenagers with AS may have major problems with daily life such as:

- **Personal Hygiene** – General refusal to manage personal hygiene to socially accepted standards. Often refuses to wash, bathe, shower and brush teeth because of sensory issues, such as the water, soap, shampoo or toothpaste do not “feel right.” Hair and nail cutting may be a major problem for caregivers.
- **Dressing** – Often wears the same clothes and shoes for days, weeks or months. Again, sensory issues come into play as they will complain that their clothes don’t “feel right” after they have been laundered. Others may change clothes obsessively, sometimes several times a day.
- **School work** – The adolescent with AS often will not realize the importance of school and related work. Work in groups can cause considerable difficulty for the AS adolescent because of his/her communication and social impairments. Teasing and bullying of the adolescent with AS remains a problem throughout the school years.
- **Eating** – Youths with AS may be quite choosy about their food preferences. This also seems to be mainly a result of sensory integration issues where not only the taste but also the temperature and texture of the food become an issue. For others, the issue of food selection or rejection may be due to the individual’s feelings about the food in question.
- **Sleeping** – For reasons that remain uncertain, many individuals with AS begin having problems with sleep during the adolescent years.

Also, although individuals with Asperger’s are often self-described loners, they usually express great interest in making friends and meeting people. Unfortunately, their awkward approach, insensitivity to other’s feelings and odd facial expressions and body language (e.g., signs of boredom, quick to leave, avoiding eye contact or staring inappropriately) make developing relationships difficult (Tartakovsky, 2010). This can lead to chronic frustration. Even worse, some individuals get so upset that they develop symptoms of depression, which may require treatment, including medication.

Individuals with AS often also display inappropriate emotional aspects of social interactions. They can come off as being insensitive. They might appear to lack empathy or to disregard another person’s expressions and gestures altogether. However, people with AS usually are able to describe other people’s emotions and intentions. They’re just unable to act on this knowledge in an intuitive and spontaneous way, so they end up losing the rhythm of the interaction. Because they have such a poor sense of intuition and spontaneity, people with AS rely on formal, rigid rules of behavior, making them appear inappropriately and overly formal in social situations. (Autism Society, 2014)

Some of these symptoms also appear in individuals with higher-functioning autism, though perhaps to a lesser extent. Most autistic people seem withdrawn and unaware of or uninterested in other people.

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Characteristics of Asperger syndrome in adulthood

- **Childhood onset.**
- **Limited social relationships or social isolation:**
  - Few or no sustained relationships; relationships that vary from too distant to too intense.
  - Awkward interaction with peers.
  - Unusual egocentricity, with little concern for others or awareness of their viewpoint; little empathy or sensitivity.
  - Lack of awareness of social rules; social blunders.
- **Problems in communication:**
  - An odd voice, monotonous, perhaps at an unusual volume.
  - Talking "at" (rather than "to") others, with little concern about their response.
  - Superficially good language but too formal/stilted/pedantic; difficulty in catching any meaning other than the literal.
  - Lack of nonverbal communicative behavior: a wooden, impassive appearance with few gestures; a poorly coordinated gaze that may avoid the other’s eyes or look through them.
  - An awkward or odd posture and body language.
- **Absorbing and narrow interests:**
  - Obsessively pursued interests.
  - Very circumscribed interests that contribute little to a wider life, e.g. collecting facts and figures of little practical or social value.
  - Unusual routines or rituals; change is often upsetting.
- **Unusual egocentricity, with little concern for others or awareness of their viewpoint; little empathy or sensitivity.**
- **Lack of awareness of social rules; social blunders.**
- **Substance abuse issues.**
- **Bipolar disorder.**
- **Obsessive-compulsive disorder.**
- **An awkward or odd posture and body language.**
- **Unusual routines or rituals; change is often upsetting.**

Bauer (2006) does not preclude the potential for a more “normal” life in adults with AS. He indicates that these individuals will often gravitate to professions that relate to their own areas of interest.

Gillberg (2002) has estimated that between 30 percent to 50 percent of all adults with AS are never evaluated or correctly diagnosed.

Co-morbidity

Persons with AS may be vulnerable to mental health problems. Few studies have systematically addressed these issues, although children with developmental disabilities are thought to have a two-to-six-times-greater risk of experiencing co-morbid psychiatric conditions than their developmentally normal peers. (Autism Society, 2014) These problems often evidence themselves in adolescence and early adulthood. One research report indicates that up to 65 percent of individuals with AS presented with symptoms of one or more psychiatric disorders. It is worth noting that symptoms of psychiatric problems, especially mood disorders, can be masked by observed behaviors of individuals with AS.

Individuals with AS can exhibit psychological conditions including:

- Attention deficit hyperactivity disorder.
- Conduct disorder.
- Oppositional defiant disorder.
- Major depressive disorder.
- Dysthymic disorder.
- Adjustment disorder with depressed mood.
- Bipolar disorder.
- Generalized anxiety disorder.
- Obsessive compulsive disorder.
- Substance abuse issues.

**Depression**

The presence of depressive symptoms in individuals with AS is fairly common. This depression may be related to the individual’s increasing awareness of his disability as he goes through the adolescent and early adult years (Autism Society, 2014). The inability to form and maintain relationships and engage in meaningful social activities is often at the root of the depression. At times the individual’s depression may be so severe that he begins to experience suicidal thoughts. These seem to be most frequent in adolescence and early adult life. Children with AS may speak of death and suicide, and adolescents with AS may act upon their suicidal thoughts. Gillberg (2002) noted that individuals with AS tend to respond well to the simple suggestion (from a professional) that attempting suicide is not good for them.

**Anxiety**

Anxiety is also common in individuals with AS. The inability to handle normal changes in school, home and work often exacerbates feelings of anxiety. As with depression, the social demands of adolescence and adulthood may generate extreme levels of anxiety.

**Obsessive-compulsive disorder (OCD)**

OCD does appear often to coincide with Asperger syndrome, with as many as 8 percent of individuals with AS exhibiting signs of OCD. Care must be taken to differentiate between the narrow interests of a person with AS and the obsessive nature of persons with OCD.

**Substance abuse issues**

It is not uncommon for individuals with AS to start using and abusing alcohol toward the end of adolescence. To some degree, this may be related to normal peer pressure experienced by every teenager. For others, the process of intoxication may ease feelings of social discomfort, allowing the AS individual to feel more “normal.” Several studies have suggested that alcohol abuse rates may be extremely high in individuals with AS. As with suicide attempts, some individuals with AS tend to respond positively to the suggestion that they not use alcohol or drugs.

**TREATMENT INTERVENTIONS OF ASPERGER SYNDROME**

It is thought that the core symptoms of AS cannot be cured. However, children and adults with AS can benefit from a variety of specialized interventions that focus on behavior management, social skills training and management of comorbid symptomatology.

The ideal treatment for AS coordinates therapies that address the three core symptoms of the disorder: poor communication skills, obsessive or repetitive routines, and physical clumsiness. There is no single best treatment package for all children with AS, but most professionals agree that the earlier the intervention, the better.

An effective treatment program builds on the child’s interests, offers a predictable schedule, teaches tasks as a series of simple steps, actively engages the child’s attention in highly structured activities, and provides regular reinforcement of behavior. It may include social skills training, cognitive behavioral therapy, medication for co-existing conditions, and other measures.

Delivery of social competency interventions varies based on the developmental level of the target group. For example, a literacy intervention for elementary students might include repeated readings of materials in small groups and an emphasis on listening for key vocabulary (Barclay, 2009), whereas one for junior high students might involve more discussion and a focus on critical thinking (Alvermann, 2001).

Similarly, this consideration is important for social competency interventions in terms of general teaching strategies, including emotion recognition and executive functioning. For example, common practices for elementary-age students include instruction in short bursts given that students do not develop mature levels of attentional control until adolescence (Nelson et al., 2008). In addition, elementary students learn most effectively when they access their prior knowledge, participate in active learning activities, receive ample amounts of guided practice (Riner, 2000), and receive instruction in self-management techniques (Blume and Zembarger, 2007; Ringel and Springer, 1980).
Children need to be provided with opportunities to take the perspective of others, and recognize that their behavior impacts others (Blume and Zembar, 2007); providing small, structured group learning increases opportunities for these occasions.

Related to emotion recognition, elementary-age students are working on developing rule-based strategies (Blume and Zembar, 2007; Morra et al., 2008), so teaching explicit strategies to recognize, understand and interpret emotions is crucial. Some research has shown that to align with their typically developing peers in executive functioning, students with social competency deficits benefit from remediation strategies like environmental supports such as visual schedules and engaging learning activities such as game-based learning (Ozonoff et al., 2005). All of these delivery methods contribute to an effective social competency intervention.

According to the National Institute of Neurological Disorders and Stroke, the ideal treatment for Asperger’s coordinates therapies that address the three core symptoms of the disorder: poor communication skills, obsessive or repetitive routines, and physical clumsiness. There is no single best treatment package for all children with AS, but most professionals agree that the earlier the intervention, the better.

An effective treatment program builds on the child’s interests, offers a predictable schedule, teaches tasks as a series of simple steps, actively engages the child’s attention in highly structured activities, and provides regular reinforcement of behavior. It may include social skills training, cognitive behavioral therapy, medication for co-existing conditions, and other measures.

- Individual psychotherapy to help the individual learn social skills training, to better detect social cues, and how to deal with the emotions surrounding the disorder.
- Parent education and training.
- Behavioral modification.

**Psychiatric Medications**

- For hyperactivity, inattention and impulsivity: Psychostimulants (methylenediate, dextroamphetamine, methamphetamine), clonidine, Tricyclic Antidepressants (desipramine, nortriptiline), Strattera (atomoxetine)
- For irritability and aggression: Mood Stabilizers (valproate, carbamazepine, lithium), Beta Blockers (nadolol, propranolol), clonidine, naltrexone, Neuroleptics (risperidone, olanzapine, quetiapine, ziprasidone, haloperidol)
- For preoccupations, rituals and compulsions: SSRIs (fluvoxamine, fluoxetine, paroxetine), Tricyclic Antidepressants (clomipramine)
- For anxiety: SSRIs (sertraline, fluoxetine), Tricyclic Antidepressants (imipramine, clomipramine, nortriptiline)

With effective treatment, children with Asperger’s disorder can learn to cope with their disabilities, but they may still find social situations and personal relationships challenging. Many adults with AS are able to work successfully in mainstream jobs, although they may continue to need encouragement and moral support to maintain an independent life. (Benjamin, 2014)

Any treatment program for AS should begin with a thorough assessment of the individual’s strengths and deficits. After a complete evaluation, a diagnosis can be made and a treatment plan developed that focuses on addressing the needs of the client, while at the same time reducing symptoms of the disorder and embracing the client’s individual strengths. (Autism Society, 2014)

Because of the multi-modal nature of treatment for individuals with AS, it is very important that all members of the treatment team are aware of all the interventions under way and have the ability to communicate with one another as needed.

### Communication and social skills training

Communication and social skills training is central to the treatment of AS. That said, the practice of communication and social skills does not imply that individuals with AS will acquire normal communication skills. It does, however, better prepare the person with AS to deal with the inherent difficulties with social and interpersonal interactions in everyday life.

- Skills training needs to be conducted in a fashion that is explicit, verbal and rote in nature. Both training and repeated exercise are often needed to facilitate long-term retention of the material.
- Training cannot rely on instruction that is subtle, uses metaphors, similes, humor, sarcasm or analogies, because the individual with AS may take these communications in a literal sense.

- The types of problems frequently experienced by individuals with AS respond well to problem-solving strategies that teach identification of these problems and strategies to deal with them in a socially acceptable manner.
- The client should be taught, if possible, to self-monitor elements of his/her speech for volume, rhythm, naturalness, proximity to the audience and context.
- It is important that the individual with AS be able to evaluate himself so he is able to gain awareness of situations that are potentially troublesome. Individuals with AS often have many cognitive strengths and interests that can be used to their advantage in these situations.

### Behavior management

Individuals with AS often display a wide range of problematic behaviors that others often view as willful and malicious. Far from being willful, these behaviors, though challenging, must be viewed in the context of the individual’s disability and treated accordingly. Klin and Volkmar (1995) suggest that behavior management strategies include:

- Setting limits that are appropriate, explicit, clear and consistent.
- Helping the individual with AS make appropriate choices. This involves exploring the full range of choices available to the individual, not just what the person likes or dislikes.

### Cognitive behavior therapy

Focused and structured cognitive behavioral psychotherapy can be useful in dealing with the symptoms of AS. The cognitive style of treatment is heavily biased toward addressing and improving verbal functioning and addressing and working through real-life problems experienced by the client. This involves listening closely to the client, ferreting out issues that are problematic and at times offering advice to overcome these issues. Although periods of distress or transition will be times that the person with AS needs cognitive therapy, regular contact offers the best possible insurance against psychological decompensation. Group cognitive sessions (with other AS individuals) may be helpful for older adolescents and adults with AS. Sessions will often focus on social skills and communication issues. Again, as with other interventions, therapy is not curative in nature, but works toward maximizing the client’s ability to function in society.
Parent education and training

It is very important that parents of children with AS be fully informed about the nature and symptoms of AS. Often, without this knowledge, parents can easily see the child’s behavior as willful and malicious. In other cases parents, lacking an understanding of the illness, can excuse the child’s behavior away as due to intellectual brightness or individual eccentricities.

Educational considerations

AS children seem to do best in highly structured educational environments. In these settings, they can learn practical problem-solving and social skills as well as continuing with their academic coursework. Children with AS often require protection from teasing and bullying of other children. Children with AS often prosper when paired with a slightly older teenager who can serve as a mentor. Formal social skills training can also take place in the classroom as well as in other therapeutic individualized settings.

Medication management (psychopharmacotherapy)

Little information regarding pharmacotherapy and the AS individual is available. It is generally thought that a conservative approach to medication management should be used in dealing with AS clients. In general, medications can be used to deal with comorbid disorders frequently seen with AS:

- Depression and OCD-like symptoms such as obsessions, compulsions, rituals, and preoccupations:
  - SSRIs.
  - Tricyclic antidepressants.

- Anxiety:
  - SSRIs.
  - Tricyclic antidepressants.

- Thought disorders:
  - Anti-psychotics.

- Hyperactivity, inattention, and impulsivity:
  - Psychostimulants.
  - Tricyclic antidepressants.

Occupational / vocational training and therapy (sensory integration training)

Individuals with AS, particularly those in mid- to late adolescence or early adulthood can prosper from a variety of vocational training strategies:

- Clients with AS should generally not be placed in jobs that require manual labor because the individual’s lack of motor coordination will be a significant factor in job success.
- Likewise, jobs that require a high degree of social interaction are probably not advised for the individual with AS.
- Occupational therapy may address strategies for motor clumsiness including:
  - Developing better body awareness and postural security.
  - Improving tactile discrimination.
  - Improving balance.
  - Improving motor planning.
  - Improving fine motor skills.
  - Reducing gravitational insecurity.
  - Improving ocular control and visual-spatial perception.

Prognosis

There is some evidence that children with AS may see a lessening of symptoms; up to 20 percent of children may no longer meet the diagnostic criteria as adults, although social and communication difficulties may persist (Woodbury-Smith and Volkmar, 2009). Individuals with AS appear to have normal life expectancy, but have an increased prevalence of comorbid psychiatric conditions, such as major depressive disorder and anxiety disorder that may significantly affect prognosis persist (Woodbury-Smith and Volkmar, 2009). Although social impairment is lifelong, the outcome is generally more positive than with individuals diagnosed with other various symptoms of autism spectrum disorders. For example, typical ASD symptoms are more likely to diminish with time in children with AS or HFA (Coplan and Jawad, 2005).

Although most students with AS/HFA have average mathematical ability and test slightly worse in mathematics than in general intelligence, some are gifted in mathematics and AS has not prevented some adults from major accomplishments such as: Bill Gates, Alfred Hitchcock, Mozart, Charles Dickinson, and Vernon L. Smith who won a Nobel Prize.

Although many attend regular education classes, some children with AS may utilize special education services because of their social and behavioral difficulties. Adolescents with AS may exhibit ongoing difficulty with self-care or organization, and disturbances in social and romantic relationships. Despite high cognitive potential, most young adults with AS remain at home, although some do marry and work independently. The “different-ness” adolescents experience can be traumatic. Anxiety may stem from preoccupation over possible violations of routines and rituals, from being placed in a situation without a clear schedule or expectations, or from concern with failing in social encounters; the resulting stress may manifest as inattention, withdrawal, reliance on obsessions, hyperactivity, or aggressive or oppositional behavior. Depression is often the result of chronic frustration from repeated failure to engage others socially, and mood disorders requiring treatment may develop (Autism Society, 2014). Clinical experience suggests the rate of suicide may be higher among those with AS, but this has not been confirmed by systematic empirical studies.

Education of families is critical in developing strategies for understanding strengths and weaknesses; helping the family to cope improves outcomes in children. Prognosis may be improved by diagnosis at a younger age that allows for early interventions, while interventions in adulthood are valuable but less beneficial.

While individuals with AS may be taught specific skills to compensate for the disorder, it is believed that the underlying impairment is lifelong. The prognosis will vary according to the severity of the disorder and the interventions used to ameliorate existing symptoms. In general, the prognosis for persons with AS is better than for those who have been diagnosed with classic autism.

Social situations and personal relationships will likely be a lifelong challenge. Although social difficulties may persist, with the proper
care and treatment, many individuals will be able to achieve self-sufficiency as an adult. Individuals with AS tend to do better in the presence of supportive family members who, while encouraging, also have an adequate grasp of the disorder.

Conclusion

Asperger’s syndrome was first described by Hans Asperger in 1943. His research was largely unknown in English-speaking countries until 1981 after Lorna Wing published a paper on AS. Since then, interest and research on AS has grown steadily.

Asperger’s syndrome is a complex, and often confusing, disorder that often goes undiagnosed or at times is misdiagnosed. When evaluated and diagnosed correctly, the individual with AS will show symptoms affecting language, communication skills, thought and social/emotional behavior. Children with AS often exhibit a limited capacity for empathy, problems developing appropriate friendships and will often display a limited number of intense and highly focused interests.

Asperger’s syndrome can be diagnosed only with observation of a variety of impairments including: qualitative impairment in social interactions, as well as restricted repetitive and stereotyped patterns of behavior. Children with AS have a variety of impairments including: qualitative impairment in social behavior, affect, language, communication skills, thought and social/emotional behavior. Asperger’s syndrome can be diagnosed only with observation of a variety of impairments including: qualitative impairment in social interactions, as well as restricted repetitive and stereotyped patterns of behavior.

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It is thought that most children with AS are diagnosed between the ages of 3 and 9. Adults with AS are often diagnosed at the behest of family members, generally in response to marital, social, occupational or other types of adaptive malfunction.

The etiology of AS is unknown at this juncture. The medical and psychological community has been unable to agree on the causes of AS, though there is evidence suggesting a genetic component to the illness. It is also thought that events in early development may play a role in the development of AS.

Due to the intelligent nature of many individuals with AS, they tend to respond to a mix of therapeutic interventions. These multimodal interventions should include communication skills training, behavior management, cognitive behavioral therapy, parent education and training, medication management (for certain symptoms) and occupational/vocational training and therapy to address sensory integration issues.

The prognosis for AS is generally good if detected, diagnosed and treated early. Individuals can lead full and productive lives when given proper care and support.

References

1. Previously individualized in the DSM-IV as autistic disorder, Asperger’s disorder, childhood disintegrative disorder, or the catch-all diagnosis of pervasive developmental disorder not otherwise specified, as a mental health diagnosis, these four now fall under the DSM-5 diagnosis of:
   a. Specialized Autism Disorder.
   b. Sensory Processing Disorder.
   c. Autism Spectrum Disorder.
   d. Attention Deficit Disorder.

2. The first step to diagnosis is an assessment, including a developmental history and ________.  
   a. Medical exam.
   b. Observation.
   c. Eye exam.
   d. Self-disclosure.

3. Unlike children with classic autism, children with AS tend to retain their early language skills, often having large ______ for their age.  
   a. IQs.
   b. Frontal lobes.
   c. Vocabularies.
   d. Social networks.

4. Brasic (2006) noted that there are case reports and studies of men with AS that suggest the ability to accomplish cutting-edge research in fields such as computer science, mathematics and ________.
   a. Physics.
   b. Geography.
   c. Philosophy.
   d. Chemistry.

5. The ICD-10 allows for more than 14,400 different diagnosis codes and permits the tracking of many new diagnoses, which can be expanded to over 16,000 codes by using optional _______.  
   a. Testing.
   b. Sub-classifications.
   c. Axis wording.
   d. Assessment.

6. According to the information provided by the Asperger Syndrome Coalition of the United States, a large number of children are diagnosed after the age of 3, with most diagnosed between the ages of:
   a. 4 and 6.
   b. 5 and 9.
   c. 8 and 10.
   d. 10 and 13.

7. Individuals with AS often also display inappropriate emotional aspects of social interactions which may be seen by others as being:
   a. Shy.
   b. Slow.
   c. Insensitive.
   d. Fearful.

8. The presence of ________ symptoms in individuals with AS is fairly common.  
   a. Schizophrenic.
   b. Flu.
   c. Systematic.
   d. Depressive.

9. Children and adults with AS can benefit from a variety of specialized interventions that focus on behavior management, social skills training and management of ________ symptomatology.  
   a. Streamlined.
   b. Comorbid.
   c. Random.
   d. Social.

10. An effective treatment program builds on the child’s interests, offers a ________, teaches tasks as a series of simple steps, actively engages the child’s attention in highly structured activities, and provides regular reinforcement of behavior.  
    a. Financial incentive.
    b. Break from reality.
    c. Predictable schedule.
    d. Separation from school tasks.

11. ________ needs to be conducted in a fashion that is explicit, verbal and rote in nature. 
    a. Skills training.
    b. Psychotherapy.
    c. Family therapy.
    d. Communication.

12. Focused and structured cognitive behavioral psychotherapy can be useful in dealing with the symptoms of AS. The cognitive style of treatment is heavily biased toward addressing and improving ________ and addressing and working through real-life problems experienced by the client.  
    b. Verbal functioning.
    c. Physical activity.
    d. Auditory functioning.

13. Clients with AS should generally not be placed in jobs that require ________ because the individual’s lack of motor coordination will be a significant factor in job success.  
    a. Computer skills.
    b. Driving abilities.
    c. Leadership functions.
    d. Manual labor.

14. ________ may stem from preoccupation over possible violations of routines and rituals, from being placed in a situation without a clear schedule or expectations, or from concern with failing in social encounters.  
    a. Depression.
    b. Confusion.
    c. Anxiety.
    d. Isolation.

15. Individuals with AS tend to do better in the presence of ________ who, while encouraging, also have an adequate grasp of the disorder.  
    a. Behavioral therapists.
    b. Supportive family members.
    c. Teachers.
    d. Subject matter experts.