Identifying Autism Spectrum Disorder (Level 1) in Adults

Marcia Eckerd

Autistic Spectrum Disorder (ASD) is a neurodevelopmental disorder that is present from childhood. Prevalence rates range from 1% to 1.5%. Males are more likely to be diagnosed with ASD than females. A review of childhood and current behavior and social functioning is critical to accurate diagnosis. Listening to the description of problems from the perspective of the patient, building the treatment alliance, and processing the details of problematic social interactions are essential to successful outcomes. Coaching and role-playing can also be useful techniques.

John is a 22-year-old male who came to see you at the suggestion (actually, insistence) of his mother, who made the initial phone contact. He is a college student, majoring in music at a local university, living with his parents after finding dorm life too noisy and lacking in privacy. Though exceptionally talented, he struggles in some music classes because he does not see the value of assignments from his professors. John has a girlfriend but dislikes the pressure to get along with her friends. He is having blowups with his parents because they annoy him by asking him to do chores and telling him what to do, which frightens his parents. He was recently hospitalized, diagnosed as having bipolar disorder, and prescribed Risperidone. A different therapist earlier diagnosed him as having a borderline personality disorder.

John makes eye contact intermittently with you and appears fairly upset, although he is polite. His focus is on the impossibility of living with his family. His explanations are very detailed and go back to examples from years past. He tends to speak in a monologue rather than participate in a dialogue, so it is challenging to redirect him back to your questions. You puzzle over the diagnostic picture and possible interventions to help John function better.

Incidence

Autism Spectrum Disorder (ASD) is estimated to occur in 1.1% to 1.5% of the general population of children, while the estimate in adults is 1.0%. Current estimates of rates in children by the CDC have increased to 1 in 59 or 1.7% of 8-year-old children, although this frequency is debated.

The incidence of individuals with ASD Level 1 "highest functioning" (or as previously designated, Asperger's Disorder—or as often used, Asperger's Syndrome) has not been differentiated. Estimates are that 50% of those with ASD have an IQ above 70 and would be called high functioning (Takara et al., 2015). "High functioning" is a misleading term in this context, as it confuses intellectual level and life/social functioning. Many high-functioning ASD individuals have significant executive function and social challenges resulting in compromised life success.

The standard gender ratio of ASD typically cited has been 4:1 male to female. There is reason to believe that the true ratio might be as low as 2:1 male to female because the typical model for ASD is based on male-based behavioral patterns. The age of diagnosis for males is three years earlier than females. Girls often have a greater ability to mask social symptoms when younger and areas of obsessive interest are more normative for their gender (Loomes et al., 2017).

Marcia Eckerd, PhD, is a clinical psychologist in practice since 1985, specializing in neuropsychological evaluations and therapy for patients with Asperger's Syndrome and similar cognitive, social and emotional traits. She was appointed to the CT Autism Spectrum Disorder Advisory Council and serves on the Associate Staff in Psychiatry at Norwalk Hospital, where she participated in creating the Yale-Norwalk Hospital collaborative Pediatric Development and Therapy Center.

Diagnostic Criteria

ASD is a neurodevelopmental disorder that is present since childhood. The DSM-V diagnosis of ASD incorporates the three different DSM-IV autistic disorders: Autistic Disorder, Asperger's Disorder, and Pervasive Developmental Disorder not otherwise specified (PDD-NOS). PDD-NOS no longer meets the criteria for ASD and is often currently diagnosed as DSM-V Social Communication Disorder. ASD Level 1 (the highest level of functioning), generally subsumes the previous diagnosis of Asperger's Disorder. "Asperger's Syndrome" is, however, still widely used as the descriptive term by patients, professionals, and in the media.

ASD in DSM-V has two areas of diagnostic criteria: 1) social and communication deficits, and 2) restricted/repetitive behaviors and sensory hyper- or hyposensitivity. Social communication deficits include difficulty with nonverbal behaviors such as eye contact, facial expression, vocal intonation, and gestures. ASD patients have difficulty with reciprocal communication and making and maintaining peer relationships. They have difficulty with understanding the perspective of others. Many have difficulty shifting behavior appropriately in different contexts.

Restricted interests associated with ASD can be reflected by narrow intense interests that appear normative, such as computers, mathematics, art, writing, and music, which can lead to exceptional skills in those areas. Restricted routines typically are reflected by strong preferences for predictability, routine, order, and rules. ASD individuals typically have difficulty with transitions, adaptability, and integrating multiple sources of incoming information. This difficulty can also lead to getting "stuck" on a particular thought or way of doing something.

Sensory issues can include hyper- or hyposensitivity to sound, touch, smells, or visual complexity. ASD individuals can be overwhelmed by sensory overload. Poor coordination, clumsiness, and stereotyped body movements such as rocking or hand flapping can be evident.

While not part of the diagnostic criteria, ASD patients often have a profile of neurocognitive traits including emotional dysregulation, executive function problems (particularly with transitions, adaptability, and planning), and difficulty with higher level language skills such as making inferences, identifying main ideas, understanding sarcasm, and concrete thinking. They often perceive details but "miss the forest for the trees."

Comorbid Disorders

Symptoms of ASD Level 1 can be subtle and often unrecognized in higher functioning patients. These patients are often diagnosed as having depression, anxiety, ADHD, ODD, personality disorders, or a psychotic illness—and the ASD is missed. The severity of ASD symptoms do not necessarily correlate with the severity of stress experienced by ASD patients, since many have been struggling with unrecognized social and mental health problems.

Comorbidity is common. Children with ASD are two to four times as likely to experience comorbid disorders than the general population. Seven percent to 16% of patients in psychiatric facilities are finally diagnosed with ASD (Takara et al., 2015). The seven most common comorbid conditions are major depressive disorder, ADHD, anxiety disorders, bipolar disorders, schizophrenia, PTSD, and various personality disorders.

Anxiety is a very common symptom of ASD. Most ASD patients have social anxiety, and many demonstrate comorbid general anxiety. ASD is a risk factor for bipolar disorder with 6% to 21% of patients with ASD also diagnosed with bipolar disorder (compared to 2.4% of the general population). ASD has been considered a risk factor for psychotic experiences. The prevalence of PTSD in individuals with ASD is 11% to 17%, compared to 0.3% to 6.1% of the general population. Comorbidity of ASD with cluster A personality disorders (schizoid and schizotypal) and cluster C personality disorders (avoidant and OCD) is commonly noted because of overlapping symptomatology. Nine percent to 14% of ASD individuals are diagnosed with borderline personality (Takara et al., 2015).

The Diagnostic Process

Screening and Assessment Tools

There are no universally agreed upon reliable tests for diagnosing ASD Level 1 in adults with normal intelligence, although interview and screening tools are available. The Adult Asperger Assessment (AAA) is a useful guide for clinicians. It is a diagnostic interview based on DSM-IV criteria, but it is more conservative in its criteria in order to avoid false positives. The interview requires both the patient and at least one informant. It takes about three hours to complete (Baron-Cohen et al., 2005).

The Autism Spectrum Quotient - 10 items (AQ-10) (Adult), taken from the longer Autism Spectrum Quotient (AQ) (Adult), is intended to serve as a marker for autism screening. Using a cutoff of 6 on the adult IQ-10, sensitivity was 0.88, specificity was 0.91, and positive predictive value was 0.85. The adolescent version was similar in sensitivity (Alison et al., 2012). The AAA, ASQ, and AQ-10 are available online from the Cambridge Autism Research Centre.

The Ritvo Asperger and Autism Diagnostic Scale-Revised (RAADS-R) is an 80-item self-report questionnaire for use with adults without a previous diagnosis, intended to assist in screening but not as a sole diagnostic tool. It has the best psychometric

properties of screeners and is useful for adults without a prior diagnosis. ASD adults are able to accurately and reliably rate themselves, even when they have relatively low levels of insight. This self-report questionnaire can be filled out by the patient without an informant. Although research on this scale has been mixed, there is evidence for content validity and internal consistency, with one study finding three of four domains with an alpha > .80 and another study finding two of four domains with an alpha > .80. Scores were significantly higher in the ASD group than in the control group (Baghdadli et al., 2017).

In clinics, screening or interview tools are often used. In private practice, familiarity with tools such as the AAA and the development and current presentation of ASD Level 1 can make it possible to assess a patient with a shorter interview. Key diagnostic points can be identified, ideally tracing back to childhood, because ASD is a developmental disorder, even if a patient was not diagnosed then. Later sessions can fill out details of specific personal experiences across the lifespan as necessary. Current issues that arise in therapy will provide further opportunity for more in-depth historical reporting.

Clinical Interview

A detailed interview of both the patient and a significant other is ideal. The second person would most typically be a parent or a partner, but an older sibling can sometimes be helpful. A thorough history will establish the diagnostic symptoms of social and communication deficits, repetitive behaviors or routines, and sensory issues. It is possible to identify key diagnostic criteria initially, dating back to childhood if possible, and fill out details in subsequent sessions.

Developmental history. If a parent (or older sibling) is available, it can be useful to identify the patient's early developmental history, behavioral challenges, level of functioning at home and school, and any history of school interventions. The quality of the social supports and social and environmental milieu at different points during childhood should be assessed.

It is important to identify strengths and resilience. How did the patient learn to compensate for areas of weakness? What adaptive ways of coping with stress were developed? Talents and interests should be identified, as well as the patient's use of humor. While many with ASD can miss jokes and sarcasm, some have a clever and dry sense of humor.

Social functioning and sensory difficulties may have been overlooked or minimized in early years, in part because of strong intellectual skills and school performance. ASD children usually have strong verbal skills, excellent memory, and a preference for structure, so they can excel in elementary grades. Parents may not have sought diagnoses for early social or behavioral problems, preferences for routine, difficulty with transitions, or areas of intense interest. Check for instances of emotional dysregulation in the home when routines or expectations were disrupted, or when children became overwhelmed by social or sensory demands. Parents may not have recognized the triggers for emotional dysregulation and might describe outbursts as frequent but "out of the blue."

Behavioral changes in the transition from elementary school to middle school should be explored. ASD students often experience increased social challenges in middle school and high school, when the social milieu becomes more complex, the language demands are at a higher level, and the need to utilize executive functions increases. Children may have refused to do certain kinds of work, such as writing to open-ended prompts, or to cooperate with classroom expectations. This refusal was likely seen as oppositional, yielding an ODD diagnosis. Inappropriate classroom behavior may have been seen as attention seeking. Because these children and teenagers are often bright, learning difficulties do not result in failure; therefore, students are not identified for intervention. A history of bullying is common, as are exclusion, isolation, withdrawal, increasing anxiety, depression, and negative self-image. Some with ASD have friendships and participate in areas of interest in school. Others "get by" without fitting in, with their internal emotional struggles going unnoticed.

College further increases the complexity of life. How did that transition go? Living in a dormitory and the faster pace at college can be overwhelming. Both social life and academic performance should be reviewed looking for the same type of trends and challenges are explored for earlier ages.

Current psychological functioning. The examination of the current functioning and coping behavior of the patient should also explore similar topics as those covered in the development history. Both work/school life and social life should be discussed.

What is the nature of the patient's current work (or school) demands? How well or poorly are they doing, and are there particular areas of difficulty related to teamwork, understanding unstated priorities, or open-ended tasks? Are they doing well and getting promoted, or are they just getting by or on probation? Job demands and working conditions can result in many individuals with ASD ending up underemployed or out of work, although some can be very successful in appropriate employment situations. Some individuals with ASD in leadership positions learn to have "office selves" with superficial social behaviors that serve to mask social deficits.

What is the nature of the patient's current social life? What level of interpersonal demands do their social relationships place on the patient? Is the patient in an intimate relationship, dating,

or avoiding close and potentially sexual relationships? Does the patient have one or two strong friends who they see often, several casual acquaintances they see occasionally, or a fairly restricted social life? There is a vast range of interpersonal functioning among individuals with ASD.

Some individuals with ASD do marry, but the level of challenges (social, emotional, sensory) of intimate relationships can be very difficult. Partners often marry them for perceived stability and then are upset by the lack of emotional responsiveness and understanding of their needs.

Ongoing challenging behavior requires a functional behavioral assessment (FBA) to identify triggers and adaptive strategies. "Acting out" behavior seen as an oppositional, avoidant, or hostile may reflect sensory overload, excessive social stress, demands for deviation from routine, communication problems, a lack of understanding of social norms, or other factors. The stressors are not necessarily occurring at the moment of the behavior. There can be a buildup of stress over a day that erupts over a minor event (Attwood et al., 2014).

The Treatment Process

Effective treatment requires knowledge of the development and course of ASD, of the effect on all areas of a patient's life (e.g., social, emotional, school, activities of daily living, relationships, employment), and of the effect of both the social and physical environment (Pilling et al., 2012). Establishing a therapeutic alliance, developing shared outcome goals, and determining the techniques likely to be the most helpful to the patient are prime matters to address.

Focus of Treatment

ASD patients themselves rate over a dozen issues as their "greatest stressors" (Attwood et al., 2014). These include anxiety, depression, poor self-esteem, dealing with change, emotional dysregulation, sensory issues, social relationships, organization and activities of daily living, and intimate relationships. These are usually the targets for therapeutic work, based on mutual agreement on outcome goals. The patient's goals are often (but not always) related to the reasons that others demanded the patient seek psychological help, but these issues are usually perceived and experienced differently by the patient.

Therapeutic Alliance and Beginning Treatment

Creating a therapeutic alliance with someone who by definition has difficulty forming relationships takes patience and clearly communicated respect. Patients often come to therapy at the insistence of others with the implied agenda of "fixing" what is viewed as disruptive. ASD individuals are consistently criticized for not meeting social or behavioral expectations, often with interpersonal feedback beginning with "you should" or "you shouldn't." They infrequently experience being heard or understood.

One of the first tasks is identifying whether the ASD patient has an interest in being in treatment. Be clear that you are there for the patient, and not for anyone else's agenda. Listen carefully and communicate your understanding of the patient's point of view.

If the patient has described stressors, the clinical tasks are (a) fully understanding the patient's perspective, asking questions as necessary, (b) concretely verbalizing this understanding, and (c) asking if finding a way to handle that stressor would be helpful. The language used must be specific and concrete.

John, for example, came at his parents' insistence because they experienced him as stubborn and difficult, and his behavior was sometimes frightening. His perspective was that his parents were demanding, critical, and difficult. The clinical challenge is one of describing the social interaction from his perspective and using his own words. Doing so sets up a clear framework for therapy that acknowledges the reality of the stressor and provides a positive attitude for the potential of help and support. Examples of doing this might include:

> "If I'm getting this right, your mother keeps asking you to do things, and then criticizes you for how you do them."
>
> "It's hard to live with constant criticism and micro-managing. Would it be worth our working together to come up with ways of handling that, so you don't end up frustrated and mad?"
>
> "I want you to know that my job is to be here for you. I don't have any other agenda than what will work for you."

Initial Interventions

The therapeutic work often begins by exploring a specific difficult situation or recent interpersonal encounter. Concrete descriptive language must be used—not abstractions or general concepts. In the long term, a cognitive understanding of core thoughts and reframing situations is critical, but from the ASD patient's perspective, time spent talking in the abstract or talking about feelings is not generally experienced as helpful.

Addressing a specific problematic situation of high concern to the patient is critical. Working to understand the patient's current coping strategies, successful or not, is a necessary first step. What has worked and what hasn't? Is it possible to proactively come up with a strategy that works better? Many problems are frequently voiced by the patient, and it must be explained that it is necessary to address one problem at a time—to prioritize.

Individuals with ASD are detailed thinkers. The solution to one problem will not automatically be generalized to other problems without the therapist specifically verbally asking about other situations in which the same solution might work. The patient frequently will not recognize common elements in different situations without a verbal comment or connection made by the therapist; utilizing this connection in real time may take repeated experiences and processing, because each situation presents differently for the patient.

Emotional Overreactivity

Patients often overreact emotionally to perceptions of being attacked or humiliated in some way. Patients have such reactions both during everyday life and during therapy sessions. It can be important for therapists to sit quietly, giving a patient time to calm down; a patient may engage in a behavior that is self-calming, such as humming or drawing. Patients may have behaviors that are self-calming for them, but appear inappropriate or socially avoidant to others. Recognizing such behavior is important. Finding new and more socially appropriate strategies for handling overreactivity is important. Helping patients find effective self-calming techniques will be a critical element of treatment.

For example, with John, simple requests to do a chore often ended in a family crisis and emotional meltdown. A clear and detailed description of the interaction pattern is needed. The therapeutic task then is to, step by step, break down the interpersonal exchange: describing the experience of it, possibly mentioning unstated potential feelings, and recounting the next behavior by one person or the other. The series of comments might be something like the following:

> "We talked about how your mother criticizes how you do the laundry. She asks you to do it, and then gets mad if you don't do it her way, even if she didn't tell you her way. What do you usually do?" (Argue, trying to get her to say what he did was OK.)
>
> "Has arguing with you mother ever worked?" (It hadn't.)
>
> "What happens next? (The argument escalates until the patient explodes.)
>
> "So, it looks like arguing, at least at that moment, has two problems: It doesn't work because your mother never agrees, and you get more and more upset. Then your parents blame you for being upset, which isn't fair, but that's what happens."

The therapist now makes the point that if a specific behavior consistently does not work, it is not logical to expect it to work the next time. It is important not to make such observations prematurely, but the patient is unlikely to come to this conclusion if the therapist does not verbalize it.

In this example, two possible points for behavior change are readily obvious: Either avoid the argument in some way or end the interaction before the patient's emotions are out of control. For the patient, recognizing the need for self-calming as soon as possible is necessary in order to implement change. Patients frequently have an emotional reaction at an early moment during the interaction, but they are not necessarily aware of it at that point. Introducing the concept that they were probably "feeling something" early in the exchange allows for the introduction of self-calming early in the exchange as well.

For many patients, the action that can achieve both objectives (avoiding or ending the argument) is leaving the situation, but the challenge is how to do that without appearing to be avoidant or hostile. The therapist can instruct the patient to tell his parents during a calm time that he is working on learning to "calm down" and will sometimes excuse himself during arguments in order to do that. They can always say "doctor's orders." The therapist will later need to help the patient develop the ability to return to discussing the problematic situation when calm—and with a plan for managing the conversation (after discussion in therapy and possibly role-playing).

Failures of Understanding (by the Therapist)

Patients with ASD listen to language very specifically. ASD patients can be black-and-white thinkers. It is important for the therapist to frequently express what they are hearing and learning of the patient's experience in interacting with others, and to ask the patient to confirm or correct this understanding. This process establishes a basis for working together. It is unlikely that any therapist can achieve perfect understanding, so they should try to address miscommunications that occur. The therapist does not want to be perceived as just another person who does not understand, which can result in the termination of treatment. It is important to apologize for a misunderstanding once aware of it.

Language Challenges

Because ASD individuals are usually detailed thinkers and have difficulties with inferences, many have difficulty with open-ended questions. While it is typical to begin with a new patient by asking open-ended questions to stimulate discussion, this will often result in silence with patients with ASD, because they do not know what the therapist is expecting and may just sit there silently. Asking specific questions can help the therapist conceptualize larger ideas and themes.

Some individuals with ASD feel that every specific detail of an idea must be expressed in order to fully describe an idea or prob-

lem situation. This can be cumbersome and time-consuming, but it is important to be patient and understand that this is their way of processing information and ideas.

Establishing Core Cognitions

As therapy evolves, the therapist can work with the patient to determine core cognitions that are triggers, both in terms of emotional reactions and sequences of behavior. This will allow for the utilization of cognitive behavioral therapy (CBT) techniques. When core cognitions are identified, help the patient see how they are mobilized in different situations and how to use self-talk to reframe situations. Each different situation will need to be processed separately, because of the previously mentioned lack of generalization.

Using John again as an example, a core cognition was that he was seen as incompetent even though he felt intelligent and capable. He felt his parents were bent on depreciating him, thereby forcing him to defend against a loss of his sense of self-competence. Discussion of the background of each of his parents helped him see that each had their own problems that caused them to behave the way they did. Changing his view of his parents took time, because of his general difficulty shifting his cognitions. It was not resistance. Seeing the logic of the parental backgrounds and the resulting psychological issues permitted a reframing of the problematic situation and allowed him to use self-calming techniques. His "self-talk" was to remind himself that he was OK (and his parents had their own problems underlying their behavior). This cognitive reframe had to be reviewed and revisited in many problematic family situations.

Social Understanding and Behavior

The ASD patient's negative core concepts generally underlie reactivity to social misperceptions and behavioral choices. Because of missed cues or lack of relevant social knowledge, patients can perceive others as triggering core issues. Information can help. Interpersonal behavioral cues, social rules, and social understanding can be taught. It should not be expected that a patient will want to follow social rules just because they are known or expected. It can be helpful to frame behavior in terms of choices, given logical outcomes and long-term goals.

I frequently use the metaphor of an anthropologist understanding the behaviors of another culture when working with individuals with ASD. Japanese culture provides some good examples. Bowing has a different meaning than it does in American culture. The meaning is an expression of courtesy and respect; it is not reflective of relative personal importance. This is a concrete physical and behavioral example, with varied psychological meaning and interpretation. Patients with ASD can readily understand and utilize this. I encourage individuals with ASD to consider their work or school situation as another culture, where social norms and expectations need to be learned. I often explore social situations, such as dating, from a similar perspective. This method is engaging to patients, and it allows them to draw on one of their strengths: detailed thinking. Knowing the rules allows one to make decisions about whether to follow the rules in any given situation, including following social norms to achieve desired goals and accepting the consequences of behaving in atypical ways.

Social Skills, Social Cognition, and Coaching

There needs to be differentiation between issues of cognitive processing (missing the point of view of others, nonverbal cues, social skills) and distorted cognitions. Treatment may require teaching needed social skills and processing situations in therapy in order to clarify missed social understanding.

Social skills can be separated into two categories: instrumental skills (e.g., making eye contact, showing interest, starting conversations, and turn taking) and social understanding. Instrumental skills are often the topics dealt with in social skills groups. Social understanding is more complex. It involves observing and processing the social environment and the ability to recognize social roles (Gutstein et al., 2002). Treatment often necessitates teaching and coaching skills, understanding, and strategies for engaging in social situations. Methods such as diagramming social situations, scripting, explaining concrete social behaviors, and role-playing are often helpful.

When social isolation is contributing to depression, for example, it can be helpful to identify ways of seeking involvement in social activities, such as groups with shared interests or volunteering. There are blogs online, discussion groups on social media such as Facebook, and useful information on websites such as Aspergers101.

Psychoeducation

If the patient enjoys reading, books on ASD experiences and coping skills can be helpful. There is an excellent series of books for ASD patients written by Dr. Tony Attwood, with ASD individuals as co-authors and coaches. The series is called "Been There, Done That, Try This!" (Attwood et al., 2014). Each book addresses a common life challenges of individuals with ASD and is written from the experiences and perspectives of others with ASD. These easily read books provide strategies for those with ASD to address personal management, making and keeping friends, getting and keeping a job, living with sensory issues (and, for girls and women, being safe with men).

"Asperger's Syndrome Workplace Survival Guide" (Bissonnette, 2013) and "The Complete Guide to Getting a Job for People

with Asperger's Syndrome: Find the Right Career and Get Hired" (Bissonnette, 2013) are helpful for patients dealing with work situations.

"Aspergers in Love" (Aston, 2003) is a book for therapists working with ASD patients in intimate relationships. "Alone Together: Making an Asperger Marriage Work" (Bentley, 2007) is useful for the spouses of ASD individuals.

Michelle Garcia Winner has many resources online for social thinking, predominantly appropriate for children and adolescents (www.socialthinking.com). One book is specifically for adults (Winner et al., 2016).

Social Media Use

Social media can be useful in enhancing social functioning in ASD individuals, although there are few studies of social media use in adults. One study using self-report of ASD individuals showed that the majority (79%) had used social networking sites for connecting socially—with Facebook contact increasing sense of connection—but face-to-face contact counteracted feelings of loneliness (Mazurek, 2014). Another study suggested that 84% of ASD adults using Facebook were happier, but the same was not true for those using Twitter (Ward et al., 2018). A third study suggested that use of social media could have negative effects, increasing feelings of social isolation—possibly by displacing real-world interactions, displaying postings of others having fun, or by showing idealized representations of the lives of peers (Primack et al., 2017). The consensus seems to be that social media use in moderation can be helpful.

Social media is often less anxiety arousing than face-to-face contact for individuals with ASD when venturing into social relationships. The opportunity to edit one's comments allows ASD individuals the opportunity to process information and their response; in general, one is only responding to verbal interaction instead of nonverbal social pragmatic language. A plethora of blogs exist about the pros and cons of media use, including texting, Facebook, Twitter, Instagram, Snapchat, and other age-appropriate sites, for both professionals and self-described ASD individuals. Complaints include comments that Facebook and Twitter can increase OCD symptoms by stimulating either repeated posting or checking on media. A danger is that ASD patients can make the same social mistakes in media that offend others, resulting in "unfriending" or online bashing.

I cannot personally recommend any forums, groups, or blogs other than "Everyday Aspie" by Samantha Craft. She "retired" her blog in February 2017 but postings remain available. Her book "Everyday Aspergers" is highly reviewed and available on Amazon and other sites (Craft, 2016). Http://autism.wikia.com/wiki/social_networks provides a partial listing of networks and blogs. Forums for those with ASD allow them to ask questions and share experiences. Some examples include https://wrongplanet.net, Tumblr discussions via the hashtag #actuallyautistic, and a Quora forum on autism. Some individuals with ASD have suggested the use of the Meet Up Asperger Syndrome site to find local groups.

Coaching patients in the use of social media can be an adjunctive therapeutic tool. It allows the patient and therapist to work together in processing social information, formulating appropriate responses, and responding to inadvertent offenses or received criticisms. There is a danger of too frequent posting to an individual being construed as harassment, so patients must be educated about the issues of both general and sexual harassment.

Sensory Issues

Sensory issues are generally best dealt with by either altering the environment or creating ways to lessen the environmental impact (e.g., earplugs or noise canceling headphones, carrying something with a preferred scent). Some venues, such as shopping malls and theaters, have sensory-friendly spaces, performances, or hours. Unfortunately, most of these are designed for children due to a lack of understanding that adults have similar needs.

Referral to other professionals about sensory or language problems may be useful at some point. Occupational therapists can help identify sensory hyper- or hyposensitivities and can help develop sensory tools for coping or self-calming. Speech and language therapists familiar with ASD can be helpful in identifying and addressing pragmatic and higher level language difficulties, and can help patients on social conversation skills with peers or at work.

Therapeutic Modalities

It is important to identify and prioritize treating specific ASD challenges and psychiatric comorbid conditions. Because patients vary enormously in presentation, single target symptoms to address or a single modality of treatment cannot be recommended. Fortunately, there are many options to choose from.

CBT. CBT for anxiety and depression can be helpful in treating ASD patients (Gaus, 2017). Individuals with ASD are at risk for developing a host of maladaptive schemas about the self, others, the world, and their futures based on their negative childhood experiences. Because of their cognitive inflexibility, they tend to adhere to these beliefs strongly.

Cognitive work with ASD patients proceeds slowly, on what has been called "Asperger time" (Gaus, 2017). Most ASD individuals think of themselves (and therefore their reactions) as logical. They can have difficulty identifying internal emotional states, so they

can have difficulty recognizing emotions as driving behaviors. It may be necessary to identify physical symptoms or behaviors that are associated with emotional responses in order to develop a vocabulary and awareness of internal states (Scarpa et al., 2013).

Meditation/relaxation. Meditation is an intervention for reducing psychological and physiological reactions to stress and can be a very useful adjunct to therapy. Many apps providing meditation instruction and guided meditation are available, such as Calm, Headspace, and Insight Timer. Other relaxation techniques may be specific to the patient, such as being alone, walking outside or being in nature, listening to music, being with a pet, and so forth. ASD patients often have strong opinions about what self-calming tools are or aren't acceptable. Refusal to try a therapist's suggestions should not be seen as resistance, but rather as manifestations of cognitive inflexibility.

Pharmacological treatment. There is no evidence to date of effective pharmacological treatment for core symptoms of ASD (Anagnostou et al., 2014). Risperidone and aripiprazole, two second-generation antipsychotic medications, are the only FDA-approved agents for a limited range of symptoms in ASD (irritability and impulsive aggression) and are approved only for adults, not children.

Transcranial magnetic stimulation (TMS). TMS is approved for use with depression. Research on its use in ASD is ongoing. While researchers stress that the use of TMS for ASD is still in the research phase, a popular book by well-known author John Elder Robison reported striking results with TMS (Robison, 2016), stirring significant interest.

AI devices. There is some research on the use of AI for patients with ASD. Tools such as watches that give feedback about physiological emotional reactions in conversations are being developed (Alhanai et al., 2017).

Neurobiofeedback. Studies of neurobiofeedback have found it to be helpful for adults with anxiety, depression, migraine, and LD. Two small studies have explored the effects on executive functions and social responsiveness in ASD children, and these findings are promising. Further research is necessary to demonstrate significant effectiveness in ASD adults (Fridrich et al., 2015; Thompson et al., 2010).

Takeaway Points for Clinicians Working with ASD Patients:

1. Accurate understanding (and verbalization of that understanding) is vital to the therapeutic alliance with individuals with ASD.

2. Use concrete language, avoid inferences, and be understanding of the patient's detailed thought process.

3. Generalizations can be less helpful than repeatedly processing specific situations and pointing out the similarities among situations.

4. Addressing emotional overreactivity is critical with individuals with ASD. Anxiety is a frequent issue, even when the patient may not appear to be anxious.

5. ASD patients can be avoidant of dealing with distressing material, but much that might appear to be oppositional or resistant reflects a different processing style.

6. Using charts and diagrams (often hand drawn in sessions) can help make abstract connections and ideas more tangible when working with individuals with ASD.

7. CBT work is helpful with ASD patients, but progress can be slow.

References available at NationalRegister.org