

Adult Asperger Syndrome and the Utility of Cognitive-Behavioral Therapy

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Abstract Asperger syndrome (AS) is a developmental disorder that was first recognized in the United States in 1994 with the publication of DSM-IV (American Psychiatric Association, Diagnostic and statistical manual of mental disorders, 1994). As a relatively new concept to the United States, both within the professional community and public awareness, the diagnosis has most often applied to children, but there is a large cohort of affected adults who have never been diagnosed or properly treated. Many of these individuals are now seeking treatment for the symptoms of AS and/or comorbid mental health problems (e.g., mood and anxiety disorders). Clinicians are in need of practical and evidence-based interventions to address the problems presented by this growing patient population, but there are few such resources available. This article will present a framework for conceptualizing the mental health needs of adults with AS, using the evidence-based approaches found in the cognitive-behavior therapy (CBT) literature to inform treatment.

Keywords Adult autism · Adult Asperger syndrome · Cognitive-behavioral therapy

Introduction

Asperger's disorder is one of the DSM-IV-TR (American Psychiatric Association 2000) group of disorders called "Pervasive Developmental Disorders" (PDD), often

referred to as "autism spectrum disorders" (ASD) in the literature. Also, called Asperger Syndrome (AS), this disorder was first introduced in 1994 with the publication of DSM-IV (American Psychiatric Association 1994) and is described as similar to autism in that individuals who meet criteria for the diagnosis demonstrate "impairment in social interaction" and "restricted repetitive patterns of behavior, interests and activities". However, in contrast to autistic disorder, individuals with AS do not have clinically significant delays in language, cognitive development, self-help skill development, adaptive behavior, or curiosity about the environment. Simply put, people with Asperger are verbal and do not have co-morbid intellectual disability like many autistic individuals may have.

There are many criticism of the current classification systems for autism spectrum disorders, including Asperger Syndrome, and the upcoming revision of the DSM (DSM 5) is promising to show significant changes in the way all the pervasive developmental disorders are categorized. A discussion of that is outside the scope of this article, which has the purpose of outlining a treatment approach for psychotherapists who are serving or wishing to treat adult patients with AS. From a practical perspective, a psychotherapy model will be presented that can be applied to any patient who has average or above IQ and meets criteria for any of the autism spectrum disorders. These would include AS, high functioning autism (HFA) and pervasive developmental disorder not otherwise specified (PDD-NOS).

The Challenge of Defining Asperger Syndrome in Adulthood

There is little data on the phenomenon of adult AS. Because most epidemiological studies have focused on children, we can only infer from them about the population

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of adults with AS, a recent estimate being 2.6 per 10,000 children for AS (Fombonne 2005; Fombonne and Tidmarsh 2003), and a range of 10–67 per 10,000 children for all autistic spectrum disorders (Merrick et al. 2004). The most recent estimate coming from the Centers for Disease Control for all PDD's is 1 in 110 children, which is based on a range of findings from 4.2 to 12.1 per 1000 children across a multi-site study (Centers for Disease Control and Prevention 2009). There have been no studies looking at the gender ratio of AS specifically, even in child research (Fombonne and Tidmarsh 2003; Klin and Volkmar 2003), but for all the PDD's combined in children, the male to female ratio has been reported as 3.7:1 (Volkmar et al. 1994), 3.8:1 (Fombonne 1999) and ranged from 3.2 to 7.6:1 in the recent CDC study (Centers for Disease Control and Prevention 2009). Our knowledge of the gender ratio is further limited by classification inconsistencies as well as questions about gender differences in symptom manifestation (Koenig and Tsatsanis 2005). If we consider these data on children as rough estimates, with the absence of evidence that individuals “grow out” of autism, we can at least hypothesize that there is a sizable population of adults living with a PDD, and that there are three to four men for every woman meeting criteria for a diagnosis.

It is not surprising that research and practice has focused on children since the 1994 introduction of AS into the DSM. It is classified in DSM-IV-TR with problems “usually first diagnosed in infancy, childhood or adolescence”, and it is fitting to try and understand early developmental processes and to intervene in a proactive way early in life. However, given the available epidemiological information, it stands to reason that there are significant enough numbers of adults with AS for the mental health community to become familiar with their needs and what is known about evidence-based interventions.

From a clinical perspective there seem to be two major cohorts of adults meeting criteria for AS that present for treatment. The first includes individuals born before the mid-seventies who were already adults when the syndrome was made known to the American mental health community in 1994. When these individuals were children (1940s through the 1960s), they likely presented as quite different from the students with “classic autism” (at that time, generally very impaired nonverbal children with co-morbid intellectual disability). Although not fully “typical,” they had normal to superior intelligence, solid verbal skills and some skills in relating to people (albeit often more successful with adults than with peers). If these children were identified by parents and/or teachers as needing help because of their struggles socially or due to their “obsession” with a special interest (e.g., insects, trains, astronomy), they were often classified in the education system as

“emotionally disturbed” rather than as having any sort of developmental or learning disorder. These individuals lived most of their lives with an array of problems without clearly fitting into any diagnostic category in the American classification system prior to the mid 90s; most with no diagnosis or worse, the wrong diagnosis. In clinical practice, this author has observed that many such individuals have achieved college or graduate degrees, but are grossly under-employed because of problems managing the social aspects of the workplace, and they often report loneliness as they struggle with social interactions, whether with friends and/or romantic partners.

The second cohort of adults that seem to present for psychotherapy are those who were born after the mid-seventies, individuals who may have been properly diagnosed in childhood or adolescence (although not always). Even if given appropriate support and intervention, these individuals often struggle with the overwhelming transition into adulthood as they “age out” of the more predictable world of the education system (Gerhardt and Holmes 2005). It seems that some adolescents with AS who thrive in the highly structured school environment may give the false impression that they can handle more than they really can. When they enter the “the real world” of college or work, the decrease in structure is often too abrupt and their functioning regresses. These individuals frequently seek help from a psychotherapist because they no longer have access to the options provided by their schools. As the diagnosis of autism spectrum disorders has increased (CDC 2009), so has this group of young adults with AS.

Presenting Problems for Psychotherapy

Historically, psychotherapy was not considered a viable treatment option for people with developmental disabilities, including autism spectrum disorders. In recent years it has become more widely accepted as an important component in the service delivery system for individuals with AS (Attwood 2006; Gaus 2007; Jacobsen 2003). Psychotherapy referrals may arise from a variety of sources, including a diagnostician who has established AS in a patient, a patient (or family member/friend) who suspects AS after reading about it, an inpatient psychiatry team that establishes the diagnosis and refers the patient for treatment upon discharge or, alternatively, a psychotherapist who recognizes AS in a patient currently in treatment for another reason. Adults with AS are prone to a poorer quality of life than same-age peers (Jennes-Coussens et al. 2006) for any number of reasons, with slightly different challenges reported by the patients themselves and parents/family members.

Self-Reported Problems

Social/Interpersonal Issues

Some patients report a sense of isolation or dissatisfaction with the number or quality of the relationships they have in their lives. Contrary to popular belief about people on the autism spectrum, many are quite motivated to have friends and romantic partners yet have difficulty successfully accomplishing this task. Many patients also report that they feel highly anxious in some or all types of social situations. Some are aware (or can become aware) that they lack the skills to “get along” with others to the extent that repeated interpersonal conflicts have resulted in clear negative consequences (e.g., loss of job, legal action).

Dating and Sexuality

Individuals on the autism spectrum often do not have the typical educational and social experiences during adolescence through which most others develop a healthy sexual self, leaving them vulnerable to difficulties related to sexuality (Aston 2003; Attwood 2006; Hénault 2005; Koller 2000). Some patients (and their families) are inhibited in discussing these issues and the problems may not be divulged until the patient builds trust with the therapist. Examples include lack of accurate sexual information, anxiety about dating, confusion about sexual identity/orientation, aversion to touch, sexual side-effects from psychotropic medication, preoccupation with sexual media, or less commonly, paraphilias.

Depression

Most patients report some level of sadness, “feeling down”, feelings of helplessness and/or hopelessness, some current or past suicidal ideation. Interestingly, less social impairment and higher cognitive ability have been associated with *more* self-reported depressive symptoms in one sample of adults diagnosed with autism spectrum disorders (Sterling et al. 2008).

Employment Dissatisfaction

The majority of adults with AS report employment problems of one kind or another. Despite the high level of talent and education seen in this population, many remain unemployed or underemployed, working at jobs that do not fully utilize their talents or education. Those who are employed face workplace problems including difficulty understanding the social domains of the job (e.g., interfacing with co-workers, bosses, customers) or managing the tasks of the job (e.g., time demands/deadlines, task completion).

Frustration with Living Situation

Many patients complain at intake about not being able to achieve independence, including in their living situation. They may be dependent on their families or housing programs (e.g., group home, supportive apartment) and perceive that their living arrangements sometimes infringe on their rights to privacy and choice-making. This can be a powerful stressor contributing to the helplessness and hopelessness mentioned earlier.

Family-Reported Problems

Anger/Disruptive Behaviors

A common complaint coming from family members during intake surrounds the patient’s expression of anger. These patients are often described as having “meltdowns” of explosive, unpredictable, or violent displays of rage. Behaviors may include screaming, cursing, threatening others, destroying property (throwing and breaking items, punching holes in walls), self-injury (slapping or hitting self, banging head on hard surface) and less frequently, physical aggression toward others (shoving, kicking, punching or choking).

Obsessions, Compulsive Behavior, Intense/Narrow Interests

There is often concern about the patient being overly “obsessed” or “fixated” with a particular topic or activity (e.g., sports, transit systems, aviation, or meteorology). While the activity itself may not be maladaptive, there can be a problem with the inordinate amount of time and/or money involved, to the exclusion of other potentially more adaptive activities. At times family members report maladaptive repetitive, obsessive or compulsive behaviors (e.g., an inappropriate/unreciprocated obsession with an actor, obsessive focus on schedules) or even self-destructive activities (e.g., internet “addiction” to the point of losing employment). Individuals with AS may become so immersed in their interest, without the inherent awareness of the impact of their behavior on self or others, that they make errors based on poor judgment about health, safety, relationships, or money.

Withdrawal/Depression

Involved family members may report concern about the individual’s isolation and depressed mood. Sometimes a dramatic change in mood state triggers a family member to refer a patient, often accompanied by a change from the person’s usual way of functioning (e.g., regression in self-care skills, less social engagement than usual).

Lack of Motivation/Procrastination

One of the most frustrating issues for parents of adult children is what appears to them to be a lack of motivation to take responsibility for life decisions. The high level of intellectual functioning leads parents to say, for example, “he should know better” or “she should be more interested in her budget”.

Poor ADL Skills/Self-Care and Organization

Another common source of aggravation for family members is inconsistency in taking care of basic grooming and housekeeping responsibilities. The discrepancy between intellectual and adaptive functioning is puzzling to family members; it seems as though self-care should come more naturally.

Odd Behavior in the Community/Legal Problems

Some referrals to treatment are triggered when a patient gets “in trouble” within the community and/or the legal system. Odd behaviors, poor social judgment, and weak skills in social communication may lead others to misconstrue the intentions of a person with AS. For example, a man with AS with little understanding of social norms may not recognize that if he is openly staring at an attractive woman, she may view him as predatory or having ill intentions; a police officer may misinterpret his lack of eye contact as disrespect. In reality he likely does not know the “unwritten rules” about what is appropriate related to variations in eye contact.

Assessment Considerations

It can be difficult to get a clear view of the symptom picture when a therapist first meets an adult with AS who is presenting for treatment. Challenges may include the initial clinical interview, issues around the therapeutic relationship and associated boundaries, and differential diagnosis. In the absence of clinical research in this area, the following recommendations are based on the writings of clinicians working in the autism field (Gaus 2007; Jacobsen 2003) and given some similarities around challenges in social communication, information regarding psychotherapy with patients with schizophrenia (Kingdon and Turkington 2005).

Interviewing

As verbal, often very articulate and intellectually capable individuals, patients with AS can be interviewed in much

the same way as any patient. Consideration of several specific modifications or adaptations are, however, likely to more successfully build rapport and thus obtain accurate information from the patient. Persons with AS, by definition, have difficulty navigating social situations and the clinical interview is no exception. The therapist will need to devote extra time to the assessment process than normally required for non-AS patients, adjusting the pace to the patient’s communication style. People with AS may take longer to describe their problems, at times becoming highly anxious during initial sessions or quickly overwhelmed by the questioning process and “expectation” for reciprocal communication. Others may talk incessantly, with minimal response to cues or prompts to shift direction, thus slowing down the interview.

Despite what may be superior command of the language, patients with AS may use language in unusual ways and often interpret what others say in a very literal fashion. The therapist must be mindful of the words he or she uses, and should phrase questions and provide explanations to the patient using more concrete terms than might be expected based on the patient’s apparent cognitive skills and vocabulary.

Therapeutic Relationship and Boundaries

People with AS have difficulty inferring the expectations of others, “missing” the nonverbal aspects of communication. For most, this has contributed to a lifelong pattern of social mistakes with subsequent unfavorable feedback from others (detailed later). Specifically regarding the patient-therapist relationship, the therapist is challenged to use explicit terms to set clear boundaries in the relationship, but do so without conveying a judgmental tone. During the early sessions, this can be accomplished by giving the patient a set of routine “office rules”, detailing the “usual” office procedures (e.g., phone calls, financial obligations, confidentiality), but also some of the more subtle social conventions that most non-AS patients would likely infer on their own (e.g., what door to use, when to arrive and where to sit while waiting, when to knock or not, how to sign in, etc.). This added level of clarification should help to reduce the likelihood that the therapist would need to directly correct patient errors, especially early in treatment. Generally, the therapist should avoid confronting the patient about displays of odd or atypical social behaviors in the initial sessions as long as they are relatively harmless. These displays (e.g., avoiding eye contact, facial grimaces, body movements, unusual hand gestures) may be self-regulating or self-stimulatory behaviors that often escalate in highly anxiety-provoking situations that can be addressed later, as needed, once greater rapport and trust have been established.

Differential Diagnosis and Comorbid Disorders

The features of AS can often be confused with symptoms of other DSM-defined disorders, as well as co-exist with some of those disorders. Differential diagnosis is an important and often ongoing goal of assessment. Space limitations do not allow for a full set of guidelines on differentiating AS from other disorders (see Gaus 2007; Ghaziuddin 2005; Tsai 2006). For the present purposes, therapists working with this population should be aware that some symptoms of AS can also appear in patients who have psychotic disorders, attention-deficit/hyperactivity disorder, anxiety disorders (particularly obsessive-compulsive disorder and social phobia), mood disorders and some personality disorders. Further, there are instances when a patient will meet criteria for AS, *plus* meet the criteria for a co-existing mental health problem. There have been no systematic investigations of the prevalence of comorbid disorders within the adult AS population, but studies have shown higher rates of anxiety and depression in children with AS (e.g., Bolton et al. 1998; Kim et al. 2000; Piven and Palmer 1999). Another preliminary study found that 32% of a sample of adults with AS reported having a co-morbid mental health problem, and 15% had planned or attempted suicide (Barnard et al. 2001). These findings are consistent with this author's experience as well as the clinical accounts of other authors; a therapist treating adult patients with AS is likely to observe anxiety and mood disorders as co-morbid conditions more often than any other disorders (see Attwood 2006; Gaus 2007; Ghaziuddin 2005; Tsai 2006).

Asperger Syndrome as a Disorder of Information Processing

It can be argued that many of the problems presented by adults with AS stem from an *information processing disorder*. People with AS have an idiosyncratic way of processing both social and non-social information that has adversely affected their development and social experiences throughout life (see Gaus (2007) for review of research in this area). Their unique perceptions of themselves and of others often lead to behavior that is unappealing to others and thus contributes to recurrent rejection and ridicule. Their perceptions also negatively impact non-social areas of functioning, such as organization and self-direction, tending to increase the level of stress in daily living.

Processing information about others, or social cognition, is dysfunctional in that people with AS demonstrate impairments in the ability to formulate accurate hypotheses about what other people are thinking or feeling (“theory of mind”), to use non-verbal cues to understand social

interactions and to make adaptive use of social language (“pragmatics”). Processing information about themselves is impaired in terms of the internal feedback loops involved in self-perception and self-regulation. People with AS appear to have difficulty perceiving and regulating their own emotional experiences and may have atypical sensation and motor experiences (hyper- or hypo-reactivity to stimulation of any of the sensory systems). Dysfunction in non-social information is demonstrated through deficits in planning, organization, goal-setting and cognitive flexibility (“executive functions”) as well as difficulty processing incoming pieces of information within a context or “seeing the big picture” (“gist” or “central coherence” as per Frith (1989)).

Figure 1 demonstrates how core problems in these perceptions combine and lead to difficulties as individuals with AS then interact with their environments. Limitations in the understanding of others and in self-understanding (the upper left and upper central boxes) lead to social skill deficits characteristic of AS. The behaviors represented by the mid-left box are hypothesized to be the behavioral outcome of a combination of erroneous social inferences, self-perception problems, and a lack of typical social learning during critical periods of development. Because individuals with AS misperceive many social situations, do not know how to respond to others, or do not know what others expect from them, their atypical or naive behaviors may result in negative social consequences.

Difficulties in the non-social domains (upper right box) appear behaviorally as problems in self-management and orchestration of the necessary activities of daily living, represented by the mid-right side box. These are the behavioral outcomes of a combination of problems with executive function and self-perception including inefficient task management, procrastination, poor self-direction, and poor basic problem-solving. The stereotype of “the absent-minded professor” can be somewhat fitting in such individuals; the person may be intellectually brilliant, but be unable to take care of day to day tasks. This is consistent with research suggesting a large discrepancy between formal measures of adaptive behavior and IQ, favoring the latter (e.g., Green et al. 2000). These deficits and weaknesses lead to daily hassles as well as more significant stressful events.

At the next level, the model shows hypothesized outcomes of the repeated failures in the domains described above. The negative consequences of dysfunctional information processing and the resultant maladaptive behavior lead to the emotional distress often reported by adult patients seeking psychotherapy; the social consequences of AS lead to poor social support, and the daily living consequences of AS lead to chronic stress. Poor social support and chronic stress are known risk factors for mental illness in the typical population (e.g., Cohen and Wills 1985;

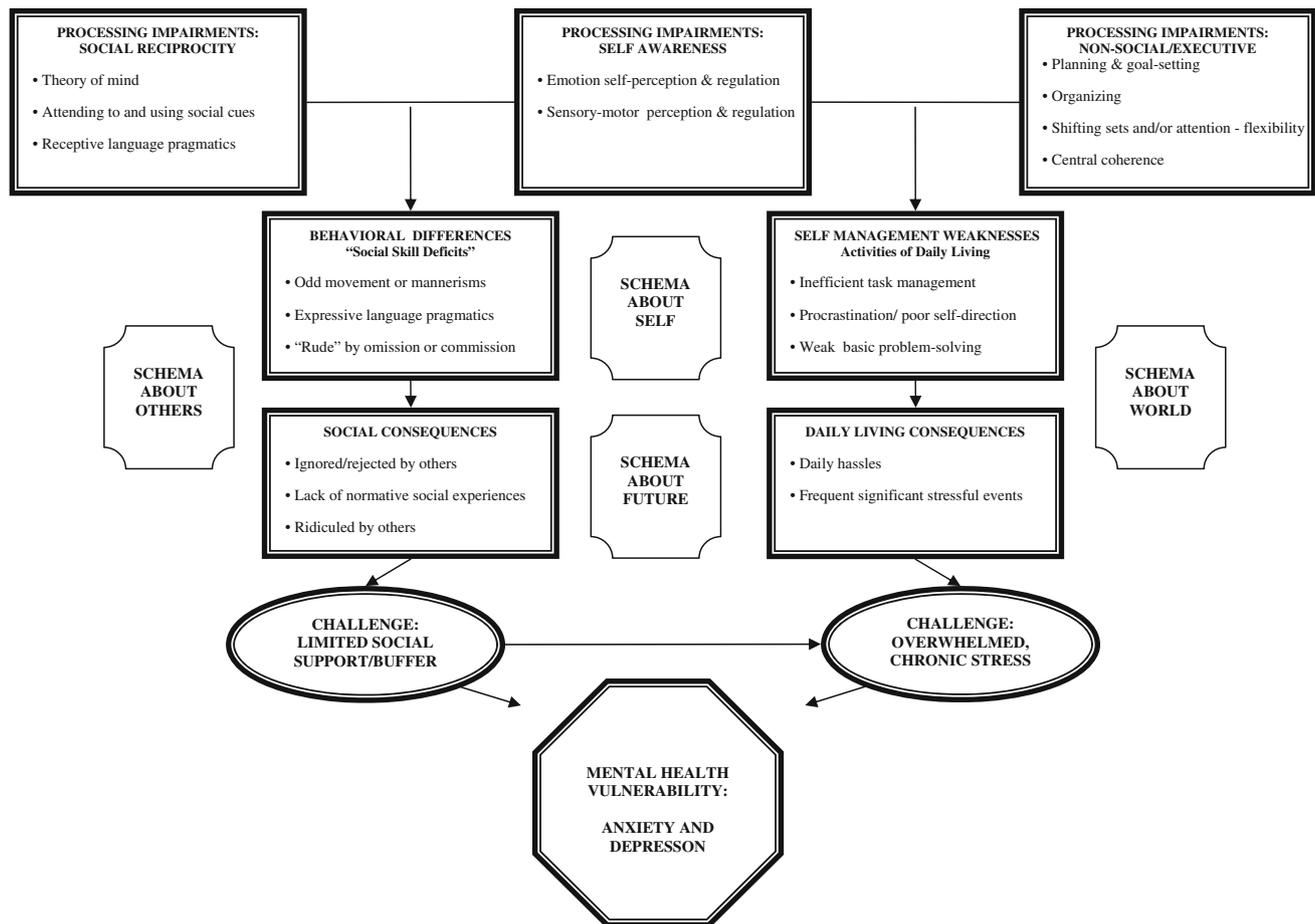


Fig. 1 Mental health vulnerability in adult Asperger syndrome

Sarason and Sarason 1985), so are also hypothesized to increase the vulnerability to these co-morbid conditions in adults with AS.

Schemas and AS

Considering the cognitive deficits that have been found in people with AS, these individuals are at risk for developing a host of maladaptive schemas. The cognitive model assumes that other people are an important source of teaching, modeling and reinforcing the beliefs that make up schemas. However, social cognition deficits make it much harder for a person with AS to infer and make use of information that comes from other people in a social context. They therefore miss out on a rich source of input for developing and evolving healthy schemas over time. Their cognitive inflexibility is also a risk factor in that they may hold on too strongly to a schema that is non-functional. Their frequent experiences of negative life events, such as social rejection and repeated employment failures, are likely to reinforce negative beliefs about self, others, the world and the future.

Figure 1 shows a conceptual representation of these schemas, illustrating the points at which negative beliefs may develop or be reinforced. The struggles with social skills and self management could easily give rise to negative schema about the self. The problematic social consequences can foster the development of negative schema about others and the self. The daily living consequences of increased daily hassles and stressful events may contribute to negative beliefs about the world and the self, and ultimately all of the above can lead to negative ideas about what is to come, or negative schema about the future.

Treatment Planning: A Rationale for Cognitive-Behavioral Therapy

The research on early intensive intervention for young children with autism has clearly demonstrated the effectiveness of that approach. It is true that treatment can have a dramatic impact when it comes early in life, yet for those who were not diagnosed in childhood or for those with AS who are higher functioning such that they would not have

been considered for that type of early intervention, they did not have that opportunity. From a lifespan developmental perspective, it is widely accepted that learning and change do not stop at some arbitrary age of 18 or 21 for “typical” people, so there is no reason to believe it would for those with AS. A new skill learned at any age can have an impact from that point forward. Psychotherapy can help adults with AS by teaching them to recognize and modify automatic maladaptive thoughts, to more accurately “read” the behavior of others, to better understand social interactions and to then modify their own behavior in response. This new learning helps the individual with AS improve social functioning, increase coping/stress management skills, and prevent or reduce symptoms of anxiety and depression.

There is no evidence-based protocol yet established specifically for treating adults with AS. There are, however, numerous strategies available for the treatment of the comorbid disorders often bringing these patients into treatment and specific intervention approaches for addressing many of the specific problematic symptoms. Cognitive-behavioral therapy (CBT) has existed for over 40 years and has a very large empirical literature supporting its validity in addressing a range of mental health problems. Butler et al. (2006) provide a recent review of meta-analytic studies supporting its efficacy for treating unipolar depression, generalized anxiety disorder, panic disorder, agoraphobia, social phobia and post-traumatic stress disorder. Although adults with AS are not mentioned in any of the studies cited, the mental health problems treated successfully by these protocols have been reported in clinical descriptions of adult AS (Attwood 1998, 2006; Gaus 2007; Ghaziuddin 2005). CBT approaches are designed to teach people how to monitor their own thoughts and perceptions in order to become more aware of interpretive errors and to target those that are associated with mood and anxiety problems, arguably skills that would be beneficial to those with AS.

Several authors have recommended the use of CBT for adult AS (Attwood 1998, 2004, 2006; Cardaciotto and Herbert 2004; Gaus 2000, 2007; Hare and Paine 1997; Tsai 2006), but there are only a handful of published studies supporting its use in this population. Of the five known case examples, only two were with adults (Cardaciotto and Herbert 2004; Hare 1997), with the remaining focusing on children or teens (Beebe and Risi 2003; Reaven and Hepburn 2003; Sze and Wood 2007).

The only controlled investigations of CBT for individuals with AS were conducted with child and adolescent subjects and delivered through a group therapy or family therapy modality which included parent training. Sofronoff et al. (2005) applied a CBT-based group treatment protocol across 6 2-h sessions to subjects aged 10–12 years diagnosed with AS targeting anxiety symptoms. Compared to wait-list controls, the participants showed significant improvement in ability to

generate coping responses to a hypothetical scenario, as well as a reduction in parent-reported measures of anxiety symptoms. In a similar study aimed to reduce anger symptoms in 10–14 year olds with AS, Sofronoff et al. (2007) applied the same CBT protocol. Compared to wait-list controls, participants showed improvement in their ability to generate coping responses in a hypothetical scenario and a significant decrease in the frequency of parent-reported anger episodes. Chalfant et al. (2007) implemented a 12-week group CBT protocol for children with both HFA and a comorbid anxiety disorder. Compared to wait-list controls, significant reduction in anxiety symptoms were measured in the treatment group at post-treatment. In a similar study (Reaven et al. 2009) a CBT group protocol was implemented which included parents and had the aim of reducing the severity of anxiety symptoms in a sample of children with ASD. In the treatment group, children demonstrated significant reductions in the severity of anxiety symptoms compared to wait-list controls. Wood et al. (2009) augmented a standard evidence-based protocol for childhood anxiety disorders with additional components addressing the specific social and adaptive skill deficits that are observed in children with ASD. In a randomized controlled trial, the intervention was used with children age 7–11 who met criteria for ASD and comorbid anxiety disorders. Different than the group therapy interventions outlined above, this intervention was delivered in individual/family sessions. The treatment group showed significant gains as measured by anxiety symptom checklists compared to wait-list controls.

If we combine the research results supporting CBT to treat co-morbid disorders in non-AS populations, with the promising preliminary data on the success of CBT for children with AS, there seems ample evidence to suggest practicing clinicians can turn to CBT to inform their treatment of adult patients with AS.

The Cognitive Model and Asperger Syndrome

The foundation for CBT, the cognitive model, was born in the early 1960s, with different versions being described by Ellis (1962) and Beck (1963). Because Beck’s model has served as the basis for many empirically validated adult psychotherapy protocols (Butler et al. 2006), it will be used here as a foundation for conceptualizing adult AS cases in CBT. Readers who are not familiar with the fundamentals of cognitive-behavioral therapy as per Beck’s cognitive theory are referred to Beck (1995) and Persons et al. (2000), which both provide excellent and easy to understand introductions for the newcomer.

In brief, Beck’s (1976) model proposes that people process information according to schemas, cognitive structures guiding and organizing the perception of events and experiences.

They involve core beliefs that are learned, beginning early in life, through experiences interacting with the environment and the groups of people to which they belong (e.g., family, peers, culture, religious community) that influence the way a person thinks, feels, and behaves in response to that environment. An “event” activates a related schema, triggering a cycle of cognitions influencing emotion/mood, that then influence behavior, then influencing cognitions, and so forth. This feedback cycle then loops back and further influences the schema, by reinforcing it or causing it to be modified. Throughout life, schemas are continuously changing and evolving as new information is taken in, necessitating rules and beliefs to be modified. At times schema can lead a person to habitually distort events and can become maladaptive. Beck (1976) proposed that mental health problems are driven by an excess of such distortions. This process can also be maladaptive if a person fails to take in new information, holding to previously functional schema that no longer fit with current circumstances. Problems can arise if there is a disproportionate amount of negative over positive beliefs about the self, others, the world or the future. A negative schema may lead a person to selectively focus only on information that fits with that belief system and ignore information that could possibly refute it.

Treatment Goals

Each set of factors in the model outlined in Fig. 1 represents a possible point of intervention for a therapist. When a person with AS presents with an anxiety or mood disorder, it is an outcome of many variables that have interacted with each other throughout his or her history up to that moment in time. The mental health problem that has resulted from this process is illustrated in Fig. 1 with anxiety and depression at the bottom or end-point of the process.

Through the steps of assessment and case conceptualization, the therapist’s goal is to gather information allowing hypotheses about the developmental processes that led up to the current issues. Using this approach, specific targets for change are identified, generally falling into two categories. There can be goals to increase competencies and skills in order to improve relationship and occupational functioning, which have previously been impaired by the symptoms of AS (top to middle region of the Fig. 1). There may also be goals that aim to decrease symptoms of co-morbid Axis I problems, such as anxiety and mood disorders, related to the issues listed in the middle to bottom region of the diagram.

Increasing Skills

Social skills and coping skills are two broad categories of skill development generally needed in this population.

Referring back to Fig. 1, these intervention categories are meant to address the problems listed in the middle boxes. Teaching social skills will address the behavioral differences with their potential for negative social consequences. Social skill development must be multifaceted, including strategies to teach not only superficial polite behavior, but also increase fund of social knowledge (e.g., “unwritten rules” of social conduct) and improve social cognition (e.g., perspective-taking). Teaching coping skills is designed to address the self-management difficulties with their associated daily living consequences. Coping skills might include time management, problem-solving, relaxation skills and appropriate assertiveness training. While used to target the core problems in AS, these techniques are familiar to most as key components of traditional CBT.

Decreasing Symptoms of Co-morbid Disorders

When patients with AS present with co-morbid mental health problems, they should be offered the same general CBT interventions that would be recommended to any adult struggling with those issues, albeit with modifications. People with AS may require extra skill-building components, as outlined above, and a more gradual development of a therapeutic relationship that allows them to be willing to entertain alternative ways of thinking, even when they have become rigidly “stuck” in their perceptions or interpretations. Presuming this level of therapeutic alliance, adults with AS can benefit from traditional CBT approaches to: (1) identify and respond to dysfunctional automatic thoughts and cognitive distortions; (2) recognize and modify maladaptive intermediate beliefs (often related to the patient’s rigid adherence to non-functional rules); and/or (3) modify maladaptive schemas (for example, using continuum techniques to address the dichotomous thinking often observed in AS). Across these issues, techniques such as the use of core belief worksheets can be used to reinforce gains made in therapy and to prevent relapse.

Conclusion

There is a growing population of adults meeting criteria for AS or HFA, who will be seeking help from psychotherapists in the years to come. At the time of this writing, researchers are only beginning to look at the adult AS population, particularly in terms of effective and efficient models for intervention, across various levels of services. In the meantime, practitioners need evidence-informed approaches that can be realistically used with the individuals with whom they are working day-to-day. Research shows that people with AS process information in an idiosyncratic way and those differences are likely at play in

many of the social, occupational, and life-management problems they report. In addition, these patients often have co-morbid anxiety and mood disorders for which there are existing evidence-based CBT protocols. With some modifications, including extra awareness of their information processing differences and additional attention to skill-building, CBT offers a solid research-informed model for intervention with adult AS.

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