

# Cognitive Behaviour Therapy for People with Asperger Syndrome

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**Abstract.** People with Asperger syndrome (AS) appear to have higher than expected rates of co-morbid psychiatric disorder. The main co-morbid diagnoses are anxiety disorders and depression, but eating disorders, obsessive compulsive disorder, substance abuse and bipolar affective disorder have all been reported. Cognitive Behaviour Therapy (CBT) is used effectively to treat these conditions, so could it be used in people who also have Asperger syndrome? This paper reviews important components and characteristics of cognitive behaviour therapy in relation to its use with people who have Asperger syndrome with reference to the relevant literature and to feedback from people with AS. The use of CBT in people with Asperger syndrome appears promising, but further work is needed to evaluate its effectiveness and to examine which particular aspects of therapy are helpful.

*Keywords:* Asperger syndrome, cognitive behaviour therapy.

## Introduction

In 1944 Hans Asperger, described “autistic psychopathy” (Asperger, 1944), but the paper was published in the German literature, and his work was not brought to light in the international community until 1981 when Lorna Wing introduced the term “Asperger’s syndrome” (Wing, 1981). The syndrome is regarded as an autism spectrum disorder, with impairments in the triad of communication, social interaction and imagination (Gillberg and Gillberg, 1989).

There is growing evidence that people with Asperger syndrome (AS) have higher than expected rates of comorbid psychiatric disorder and there is an increased rate of affective disorders in families of those with AS (Bolton, Pickles, Murphy and Rutter, 1998). A study of children with AS showed that one-fifth of the sample had “clinically relevant” levels of depression, and the group had substantially higher levels of anxiety than children of a similar age (Kim, Szatmari, Bryson, Streiner and Wilson, 2000). In adolescents and adults, depression is the most common secondary diagnosis, but obsessive compulsive disorder (OCD), alcohol and drug abuse, eating disorders, bipolar affective disorder, schizophrenia and isolated psychotic episodes, catatonia and suicidal thoughts and acts have been reported (Tantam, 1988a, b; Tantam, 1991; Ghaziuddin, Weidmer-Mikhail and Ghaziuddin, 1998; Nilsson, Gillberg, Gillberg and Råstam, 1999; Tonge, Brereton, Gray and Einfeld, 1999;

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Gillberg and Billstedt, 2000; Hare and Malone, 2004; Clarke, Littlejohns, Corbett and Joseph, 1989).

Cognitive Behaviour Therapy (CBT), a brief, structured form of psychotherapy originally developed for the treatment of depression (Beck, Rush, Shaw and Emery, 1979), is problem-oriented, focusing on the psychological and situational problems that contribute to the client's distress, and developing more effective coping skills. CBT has been adapted for use in a range of disorders, including anxiety disorders, eating disorders, addictions and psychosis, with specific, evidence-based models of therapy for each condition (e.g. Hawton, Salkovskis, Kirk and Clark, 1989; Blackburn and Davidson, 1990; Beck, Wright, Newman and Liese, 1993; Wells, 1997). The classic model has been most drastically and creatively modified for use in psychosis (Tarrier et al., 1998), complex eating disorders (Fairburn, Marcus and Wilson, 1993) and OCD (Salkovskis, 1999).

Given that CBT is used effectively to treat the mental health problems that appear to be over-represented in Asperger syndrome, would it be effective in treating these disorders in people who have the additional problems imposed by AS, and how might it need to be modified? Wing (1981) suggested the possibility of using the "innate logicity of the person with Asperger's syndrome to effect therapeutic change". Two case studies detailing the use of CBT in depressed adults with AS were published in 1997 (Hare, 1997; Hare and Paine, 1997). It was hoped that this would lead to more detailed investigation of the use of CBT in people with AS. To date, a further single case study of a child with OCD and AS (Reaven and Hepburn, 2003), an evaluation of a group CBT program for anxiety in children with AS (Sofronoff and Attwood, 2003) and a case report on the treatment of social anxiety disorder in an adult with AS (Cardaciotto and Herbert, 2004) are the only studies that appear in the literature in this area. In addition to these studies, Attwood has published further discussion of modifications to CBT for use in children and adolescents with AS (Attwood, 2003a, b).

Most of the literature on Autism Spectrum Disorders focuses on children and adolescents. However, these disorders lead to lifelong disabilities and services are gradually developing for adults with AS. This paper discusses important components and characteristics of CBT in relation to its use with people who have Asperger syndrome with reference to the relevant literature and to feedback from people of all ages who have AS.

### **Collaborative therapeutic relationship**

The therapeutic relationship is a vital component of any form of successful psychotherapy. In CBT, the term "collaborative" is used to denote the fact that client and therapist work together to formulate and resolve the client's problems. Asperger syndrome is defined by serious difficulties in reciprocal social interaction, evident in both verbal and non-verbal communication. Difficulties forming and maintaining relationships may be particularly evident in the one-to-one therapeutic relationship in which we are attempting not only to establish a new relationship, but asking the person to discuss their thoughts and feelings. Psychotherapeutic relationships are often highly emotionally charged, and in CBT, moments of heightened emotion are often used as signals to look for automatic thoughts, assumptions and beliefs that mediate emotional distress.

AS may go undiagnosed until the person presents for help with depression, anxiety or social difficulties. The person may have already received inappropriate psychopharmacological

treatment without AS being recognized (Ryan, 1992). If AS is recognized, what can be done to improve the therapeutic relationship and make it more bearable for the client?

Hare and Flood (2000) suggest that it “may be more useful not to make an empathic therapeutic relationship the basis of clinical work with a person with a diagnosis of Asperger’s syndrome. Instead, explicit agreements on the joint purpose of the sessions may be more appropriate, given that the problems in empathic intersubjectivity may be central to the person’s social difficulties”. These authors also suggest that a one-off “download” of personal information during sessions may have benefits over a more traditional reciprocal interview in which each party takes turns communicating. A more directive approach may be necessary at times rather than a truly collaborative therapeutic relationship.

The person with AS may have idiosyncratic ways of expressing thoughts and emotions, including having specific names for symptoms and experiences. The therapist should discover and use these idiosyncratic terms. For one 7-year-old girl, it was important for the therapist to use the child’s term “urges and phases” to describe her intrusive obsessive thoughts and engage her in therapy (Reaven and Hepburn, 2003). Renaming symptoms in the patient’s own terms is a common technique in CBT for children and adolescents, but may be equally important in working with adults with AS who often interpret language in a very literal way.

The use of visual materials such as diaries and diagrams, writing in addition to verbal communication during sessions, the use of tape recording, and working together on a computer are other possibilities for “distancing” the individual from the uncomfortable personal interaction, whilst still obtaining information regarding situations, thoughts and emotions to be worked on in CBT. Computerized CBT is showing promise in terms of efficacy and cost-effectiveness in primary care (Proudfoot et al., 2004, McCrone et al., 2004), and may be useful for people with AS, although this has not been evaluated.

The problem with depression is that you want to cut yourself off from others, you just cannot face being “probed” even more than is usually the case with AS people. One on one is really hard. I can talk to you like this because I am on a computer but if I met you face to face it would be hopeless. I would be unable to communicate very well at all. Most of the AS people I know can communicate best in writing like this. CBT by computer would be helpful.

These (and subsequent) comments were received in response to a request posted on an AS internet forum for feedback from anyone with AS who had used CBT.

### **Assessment and formulation**

Beck’s cognitive model hypothesizes that emotions and behaviours are influenced by one’s perception of events (Beck et al., 1979). Different people have very different perceptions of the same event because information and experiences are assessed against a set of fairly rigidly held beliefs, rules or assumptions about the world, the self and other people. These “schemas” are developed from early life experience, and may be considered dysfunctional if held too rigidly or extremely.

Filtering situations and events through dysfunctional assumptions leads to a stream of negative automatic thoughts associated with emotional change (anxiety, depression), behavioural change (withdrawal, reduced activity) and physical change (loss of appetite, sleep disturbance). Characteristic patterns of thinking occur in depression (negative view of

the self, the world and the future) and anxiety disorders (the self is vulnerable, the world is threatening, and the future is unpredictable and dangerous). Early experience in AS may include a sense of being different and not fitting in, being teased and bullied, and having problems making friends. Such experiences are likely to increase in adolescence and early adulthood, and the world may be seen as frightening and unpredictable, other people as cruel and uncaring, and the self as vulnerable. Personal accounts of AS give valuable insights into these immense difficulties and ways of dealing with them (Jackson, 2002; Holliday Willey, 2003). Collaborative development of a visually-based diagrammatic formulation of difficulties, their development and maintaining factors may be even more helpful in people with AS, given their preference for more concrete presentations.

CBT assessment generally includes the completion of baseline symptom rating scales, such as the Beck Depression Inventory. Repeated ratings are then used to monitor progress. There are, however, no studies validating the use of general instruments in populations with AS. Informant information, behaviourally anchored measures (weight, sleep patterns, activity monitoring) and visual measures of subjective distress, such as the “emotional thermometer” (discussed later) can be used for baseline information and monitoring. Visually based systems for monitoring thoughts and feelings have been developed and evaluated for CBT with learning disabled adults and may be equally useful for those with AS (Lindsay, Howells and Pitcaithly, 1993).

### **Structure**

The CBT treatment process is open and explicit. A contract is agreed at the outset regarding the number and frequency of sessions offered. Sessions are structured by collaboratively agreeing an agenda at the beginning of each session, prioritizing, and ensuring that subjects important to both parties are covered in the available time.

Structure may be even more important for the patient with AS. In AS, deficits in “executive functioning” affect planning, motivation, organizing and prioritizing. These deficits impose inflexibility in problem-solving as well as impairing time-perception and management. Provision of external structure is important to compensate for these. The structure inherent in CBT may generalize to other areas of the client’s life. “The therapeutic effects of imposing a greater degree of structure on the client’s day-to-day life via therapy appointments, diary-keeping . . . should not be underestimated” (Hare, 1997).

Motivational and cognitive deficits may require shorter sessions than the usual hour. It can be mentally exhausting to process all the interpersonal information in a one-to-one setting as well as the additional demands of “doing CBT”. Conversely, longer sessions may be needed to allow extra time for slower information-processing or for pedantic longwinded speech patterns. Typed summaries of sessions for the client to keep may also be useful.

### **Goal setting**

From the formulation and problem list, detailed, specific, objectively measurable goals are identified. This makes explicit what can be achieved in therapy and provides further structure. People with AS often identify problems involving deep, existential questions. It is important to emphasize in concrete terms what can and cannot be achieved, and break goals down into manageable chunks. One patient initially refused treatment as he saw himself as having AS,

about which nothing could be done (Hare, 1997). Therapy examined specific current problems whilst intentionally ignoring the use of the terms “Asperger’s” and “depression”.

Early success experiences maintain motivation – situations perceived as uninteresting or “impossible” are often met with impatience and frustration by the person with AS. Use of clear base-line measures and work on a readily attainable early goal can instil hope of further positive change.

### **Affective education**

An important early stage of CBT involves educating the client about the link between thoughts, emotions and behaviour. Impairment of emotional recognition in the self and others and in making social inferences may be a primary deficit in autism and AS. People with AS do significantly worse than controls on tests of Theory of Mind (ToM, the ability to attribute mental states to other people) than age-matched controls (Baron-Cohen and Jolliffe, 1997; Heavey, Phillips, Baron-Cohen and Rutter, 2000; Kleinman, Marciano and Ault, 2001; Rutherford, Baron-Cohen and Wheelwright, 2002). Non-verbal aspects of emotional expression may be neither recognized nor displayed by the person with AS. Deficits in ToM may also lead to paranoid thinking, since the inability to attribute mental states to others means that intentions must be inferred from behaviour. Well’s CBT model for social phobia may offer techniques useful in this area (Blackshaw, Kinderman, Hare and Hatton, 2001; Craig, Hatton, Craig and Bental, 2004).

This does not mean that people with AS do not experience emotion, but emotions may be expressed in ways generally considered inappropriate. Suicide may be threatened in response to boredom or mild distress. One depressed client responded to frustration and anger with self-harm and heavy alcohol use, seeing this as his only means of emotional release and communication (Hare, 1997). He was initially unable to make the connection between emotions and behaviour but learned more appropriate communication skills; for example, he was interested in the use of his BDI score to express his emotional state.

Difficulty in translating feelings into words may pose a considerable problem. Liane Holliday Willey, an adult with AS whose adolescent daughter also has AS, describes her difficulties in discussing emotions (Holliday Willey, 2003). Instead of verbal communication, her family use instant messaging, e-mail or hand written notes.

Small studies have shown that the reduced emotional vocabulary and the identification of emotions (in oneself and others) in children with AS can improve somewhat with teaching (Howlin and Yates, 1999; Bauminger, 2002; Sofronoff and Attwood, 2003). Affective education may occupy more time in early CBT sessions for a patient with AS. Sessions might include naming different emotions, discussing why we have emotions and identifying different levels of emotional expression. Several books, games, videos, interactive CD-ROMs and other materials are available, aimed at teaching people with AS about emotions (McAfee, 2001; Moyes, 2001; Silver and Oakes, 2001; Baron-Cohen, 2002).

Comic strip conversations (Gray, 1998) are one means of learning about emotion. Matchstick figures are drawn to depict a social situation, with thought and speech bubbles to identify what people do, say and think. Different colours identify emotional content. The colour of the emotion clarifies the client’s interpretation of events and the rationale for their thoughts and responses. Alternative responses can be drawn to explore how these will affect other participants’ thoughts and feelings. Cresswell (2001) describes the use of television soap

operas in CBT with a learning disabled individual to demonstrate links between emotions, thoughts and behaviour and to explore the effects of alternative responses on those involved in the situation.

An “emotional thermometer” diagram can be used to demonstrate different levels of emotion (Sofronoff and Attwood, 2003; Attwood, 2003a, b). Physiological, behavioural and cognitive cues to the level of emotion being experienced can be marked on the thermometer, together with warning levels to show when action requires to be taken to prevent further elevation in emotional arousal, for example relaxation techniques. A fear thermometer was used in the OCD case study (Reaven and Hepburn, 2003). The child renamed it her “worry machine”. She used the scale to identify different levels of anxiety caused by her OCD symptoms, and to develop a hierarchy of symptoms to be tackled with exposure/response prevention. This technique could be adapted for the development of hierarchies in a range of therapeutic situations; however, one respondent to my Internet enquiry states:

The idea of an emotional barometer puzzles me, since I don't modulate emotional responses. This means that if I am angry, it is full-on, whether the problem is a treacherous personal betray or getting something stuck in the fax machine . . . For me, there is no such thing as a minor annoyance. I either don't care and deal with it practically (i.e. take apart the machine dispassionately) or stand in the office screaming things that would embarrass Venetian gondoliers.

As well as affective education, the person may require education about Asperger syndrome itself, in addition to information on whichever mood disorder (s)he presents with. Information on AS should be presented in an accurate and positive light in view of the literal way it is likely to be interpreted. Attwood suggests reading autobiographies written by others with AS to help understand their differences and to borrow some of the strategies used (Attwood, personal communication). The technique of “normalizing” is already commonly used in CBT.

Given that social and environmental items are likely to make up a large part of the CBT problem list, informing and educating family, friends and colleagues about AS may be a key task. Personal accounts of disclosure of diagnosis and ways of going about this are provided by Jackson, 2002 and Shore, 2003.

### **Thought monitoring**

A key component of CBT is monitoring and then challenging automatic thoughts at times of mood change. Automatic thoughts are the “running commentaries” we make continually about our situation. We are often barely aware of them, but their content is taken as a true evaluation of the situation. Automatic thoughts are typically distorted, and each individual has characteristic patterns of “thinking errors”. Clinical experience suggests that “all or nothing” thinking is common in AS. It was a prominent thinking error of the child with OCD mentioned above, with Hare's depressed client, and in the majority of the clients seen by Gaus (personal communication). It may be related to the rigidity in AS thinking, and/or linked with the vulnerability to depression and anxiety disorders. There appears to be no published work in this area.

People with AS may have qualitative differences in introspection. Non-autistic people report four categories of inner experience – verbal, visual, unsymbolized thinking, and feelings. When three individuals with AS were asked to record their inner experiences at random intervals, experiences reported were predominantly visual, and often in elaborate detail (Hulbert et al.,

1994). There may be great difficulty in translating such visual thoughts into words in therapy and, again, writing, drawing and the use of computers may be very useful.

### Thought evaluation

Once an automatic thought can be identified, it may be evaluated by listing evidence for and against the thought being true. A more balanced, functional thought is then developed. This work can be done on a "Thought Record" (such as Greenberger and Padesky, 1995, or similar records developed for children and adolescents (Stallard, 2002).

AS is associated with executive functioning deficits (discussed above), problems with "central coherence" (the ability to see "the big picture") and procedural learning skills, all causing problems in generating alternative thoughts, beliefs or solutions, judging the potential usefulness of alternative strategies, or speculating on the outcome of various courses of action. If socially inappropriate solutions are generated (Channon, Charman, Heap, Crawford and Rios, 2001) the therapist may need to take a more directive approach, offering concrete alternatives backed by logical evidence.

Cognitive impairments inherent in AS may also lead to problems in generalizing skills learned within the therapy session. This relies on the perception of similarities between settings. This may be improved by *in vivo* work in different settings within sessions, and actively involving a family member or key worker as a co-therapist to support practice in other settings (Hare, 1997; Reaven and Hepburn, 2003).

Ratings of mood and of belief in the automatic thought before and after challenging it can demonstrate how a more realistic interpretation of experience improves mood. Hare's case study client (1997) was not asked to rate his belief in dysfunctional assumptions as it was felt that this would cause overwhelming anxiety. In view of his interest in use of BDI scores, however, belief ratings for automatic thoughts and dysfunctional assumptions may have been particularly useful.

Sofronoff and Attwood (2003) used *Social Stories and Comic Strip Conversations* (Gray, 1998) to correct thinking errors in their anxiety management group for children with AS. The group treated their "poisonous thoughts" (I always make mistakes) with "antidotes" (I learn more from my mistakes than my successes). It is not stated whether the children met formal criteria for an anxiety disorder, and ratings of anxiety before and after the intervention were not used. More detail of techniques and their effectiveness with formal evaluation of the intervention, with standardized ratings of anxiety symptoms pre and post-treatment would be helpful.

Attwood (2003b) also suggests using the individual's special interest to help modify beliefs. A child with a special interest in Dr Who, for example, is encouraged to imagine how Dr Who would manage in an anxiety-provoking situation. However, a person with AS comments:

You are dealing with someone who knows a great deal more about this subject than you do, and they will probably be resentful when it is approached by a therapist as something that can be manipulated.

Reaven and Hepburn (2003) suggest that challenging beliefs may be less effective than the presentation of simple, concrete rules. Their patient, although only 7 years old, was apparently capable of self-reflection and monitoring of her OCD symptoms. However, the authors state that challenging the irrationality of her beliefs was unproductive. She did effectively set herself



concrete rules such as “None of my business” to control her compulsive “need to know”. This may reflect her stage of cognitive development rather than the AS.

The client described by Gaus (2003) worked on a paper “thought chain”. He identified intermediate thoughts between “my room-mate complained that I left crumbs on the counter” at one end and “I’m going to be homeless” at the other. He found the situation ridiculous, seen on paper like this, distanced from his thinking and emotions, and decided upon “the weakest link” in the chain as a target for intervention.

### **Other cognitive behavioural interventions**

The studies already discussed contain several other cognitive behavioural interventions. Attwood encourages the children to develop an “emotional toolbox” with a variety of “tools” (behavioural and cognitive techniques) to deal with negative emotions (Attwood, 2003b). These include a “hammer” (physical tools – exercise), a “paint brush” (relaxation skills), a “two-handed saw” (social activities, people or animals) and a “manual” (thinking tools – positive self statements, looking for evidence). He also discusses inappropriate tools such as violence or threats of suicide.

Reaven and Hepburn’s (2003) child with OCD used an “emotional toolbox”, carrying a cardboard toolbox and cut-out tools everywhere she went. This may have been useful in generalizing skills she had learned in therapy. Her tools were relaxation, distraction, positive self-statements and relabelling of symptoms as OCD.

### **Discussion**

This paper has discussed how clinical experience and the small literature available suggest that key components of CBT might be useful for patients who have the particular neuropsychological profile of AS. Subtle impairments in ToM and impairments in executive functioning are associated with difficulties in tolerating a conventional therapeutic relationship, in describing emotions and associated thought, in generating alternative thoughts or appropriate solutions, and in generalizing new skills to everyday settings. Despite these difficulties, the creative use of CBT techniques does appear promising.

The four published studies in the field used different methods and modifications to CBT since they were treating different disorders and in different age groups, so it is not possible to draw any evidence-based conclusions about the general effectiveness of CBT in people with AS. Six years since the original case studies described were published, the “more carefully evaluated work” that Hare (1997) hoped for has not been undertaken. More sophisticated experimental trials are now needed to evaluate the effectiveness of CBT, including computerized CBT in people with AS and to examine which particular aspects of therapy are effective. Psychological distress is common in people with AS, and even where this does not reach diagnostic criteria for a secondary diagnosis, CBT-based techniques might have much to offer in managing such distress.

Some particular CBT techniques and modifications to “conventional” CBT may inform good practice in any psychological work with people with AS. These include:

- Greatly increased use of written and visual material in view of the predominantly visual style of thinking.



- Greater emphasis on affective education.
- Avoidance of the use of metaphor or abstract concepts in view of the literal, rigid thinking style.
- A more directive approach than is usual in CBT (and in most forms of psychotherapy) judiciously used when appropriate.
- Involvement of a family member or key worker as co-therapist in an attempt to improve generalization of skills.

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