

Enhancing CBT for the Treatment of Autism Spectrum Disorders and Concurrent Anxiety

Karen M. Sze and Jeffrey J. Wood

University of California, Los Angeles, USA

Abstract. Because anxiety and other concurrent psychological problems are common among children with high-functioning autism and Asperger syndrome, research initiatives have been devoted to the development of efficacious treatments to address the multifaceted needs of youth with this presentation. Emerging research indicates that when carefully adapted to accommodate for the unique needs of children with autism spectrum disorders (ASD), cognitive-behavioural therapy (CBT) may be a viable treatment modality. Because inherent features of ASD may compromise the efficacy of traditional CBT, our preliminary work suggests that it may be important to gear intervention efforts towards directly addressing core autism symptoms to promote optimal treatment response. This article describes an evidence-based CBT treatment manual modified and expanded to address core ASD features above and beyond anxiety symptomatology. A case example of a 10-year-old boy with Asperger syndrome is presented with supporting data to illustrate the treatment modifications and their rationale. The positive treatment response attained in this case suggests that an enhanced variant of a standard CBT programme may be an efficacious treatment approach for children with ASD and concurrent anxiety.

Keywords: Anxiety, Asperger syndrome, autism, cognitive-behavioural therapy.

Introduction

A substantial portion of children with the broader phenotype of autism spectrum disorders (ASD), including high-functioning autism, Asperger syndrome, and pervasive developmental disorder not otherwise specified (PDD-NOS) suffer from a range of impairing concurrent psychological problems, including anxiety disorders. Although many behavioural and nonbehavioural interventions have been tested over the years for children with ASD, none have been found to be efficacious according to contemporary guidelines for evaluating treatment studies (Rogers, 1998). Cognitive behavioural therapy (CBT) has been found to be efficacious for treating anxiety in typically-developing (non-ASD) children, but its application to youth with ASD is just beginning to be evaluated (e.g. Chalfant, Rapee and Carroll, 2007; Hare, 1997; Reaven and Hepburn, 2003; Sofronoff, Attwood and Hinton, 2005; Sze and Wood, 2007). This paper focuses on methods for modifying and enhancing standard CBT procedures for child anxiety disorders to take into account concurrent ASD symptoms.

Reprint requests to Jeffrey Wood, Graduate School of Education and Information Studies, University of California, Moore Hall, Box 951521, Los Angeles, CA 90095, USA. E-mail: jeffwood@ucla.edu

© 2008 British Association for Behavioural and Cognitive Psychotherapies

We are conducting a randomized-controlled trial of CBT for anxiety disorders in youth with ASD in which the elements of a CBT treatment for typically developing youth with anxiety disorders (Wood and McLeod, 2008; Wood, Piacentini, Southam-Gerow, Chu and Sigman, 2006) have been enhanced and modified to take core ASD features into account. Preliminary treatment outcomes have been favourable thus far (Wood et al., in press). While the treatment of concurrent anxiety disorders is the emphasis of this trial, we have found that the modifications made to the treatment have had a positive collateral impact on certain core ASD features as well. The rationale for these modifications is now discussed in the context of a case example from the trial.

Modifications to standard CBT for children with ASD: a case example

Case history and initial assessment

At intake at age 10, Nigel met criteria for Asperger syndrome according to evidence-based assessment procedures, including the Anxiety Disorder Interview Schedule for *DSM-IV*—Parent and Child versions (ADIS-C/P; Silverman and Albano, 1996). He met diagnostic criteria for Generalized Anxiety Disorder (GAD) and Social Phobia (SoP). Nigel experienced an intense fear of failure and would thus delay starting homework assignments for hours. If his mother persisted about homework, he would have angry outbursts, yelling, throwing objects, slamming doors, and crying. Then, she would provide “maximum homework support” by writing his answers for him as he dictated them to her from behind a closed door. These incidents occurred regularly and took up most of Nigel’s free time after school. Nigel and his mother also reported impairing social anxiety symptoms, especially when around unfamiliar peers. He was unpopular with most peers due to his frequent crying episodes at school and immature interests (e.g. My Little Pony, Bambi). Both Nigel and his mother reported that, despite strong social motivation, he often spent playtime and lunch alone or wandered aimlessly amidst various groups of peers, waiting to be invited to play. Nigel also had a longstanding history of stereotyped behaviours (hand flapping, body jerking) and poor self-help skills.

Treatment using a modified and expanded CBT manual for children with ASD

The *Building Confidence* CBT manual (Wood and McLeod, 2008) was expanded and modified for the treatment of children with higher functioning autism spectrum disorders and concurrent anxiety disorders. Key enhancements focus on: (1) friendship skills; (2) self-awareness of one’s appearance and effects on others; (3) suppressing stereotypes; and (4) self-help skills.

Common CBT techniques such as cognitive restructuring, thought bubbles, and hierarchical exposure were initially employed to help Nigel address anxiety directly. To facilitate comprehension of these concepts, the therapist increased use of visual aides (e.g. cartooning, writing) and use of his “special interests” as metaphors (e.g. Attwood, 2004). Early in treatment, exposure therapy focused on homework problems and social anxiety. For example, a systematic “homework programme” was implemented, beginning with the therapist and mother watching Nigel complete an “easy” homework assignment while trying to maintain a sporting attitude and attempt to complete work with only limited reminders and help. With the help of reinforcers and a light-hearted approach, Nigel experienced quick success and felt proud and confident he could do it again. The family completed the same procedure with “easy” homework at home

that week. By the following session, Nigel's mother was able to provide him with only one reminder to begin the targeted easier homework assignments. Subsequent sessions built up to a normal difficulty level of homework and Nigel realized that he was perfectly competent with most assignments. Nigel's homework-related behaviour problems rapidly remitted. Other exposures involved helping Nigel to "develop a thicker skin" through intentionally acting silly in front of others and initiating social interactions with a variety of unfamiliar peers (e.g. eating lunch or playing during games with peers) and adults (e.g. asking for directions from strangers).

Although anxiety-related barriers to friendship had been substantially reduced, intervention elements addressing Nigel's social communication deficits were still needed to potentiate peer friendships. In our expanded CBT model, pivotal conversation skills are assigned – just like courageous behaviours – for massed practice in and out of sessions. To support this practice, we developed a social coaching technique for caregivers to help prepare youth to engage in positive social interactions with others when in real-world social situations (rather than devising hypothetical scenarios during sessions, as is typically done in social skills training and interventions involving social stories). Immediately preceding actual social situations (i.e. real world contexts), the parent prompts the child to plan for specific social behaviours (verbal and nonverbal) that would likely result in positive feedback from others, encouraging him/her to think through the plan and to specify reasons for selecting specific social behaviours (to enhance deep semantic processing), and offering corrective feedback as needed. Follow-up conversations with the parent involve further thinking through the interactive episode as well as praise to increase the salience of the event. Initial target conversational behaviours for Nigel included basic greetings, giving compliments, and asking questions. This was later expanded to more advanced behaviours (e.g. asking a peer appropriate questions about a topic that did not typically interest Nigel, maintaining polite interest for a duration of several minutes or longer) in a variety of settings with different partners where social interactions occur (playdates with peers, mentoring sessions with younger children). Conversation skills in children with ASD are likely generalized and maintained through procedures such as frequent, ongoing social coaching from parents.

Friendship skills training was also introduced. We conceptualize friendship skills as a set of procedures that can accommodate for social communication deficits in ASD by providing children with several easily recalled and frequently practised heuristics about pivotal social behaviours during playdates that err on the side of politeness and generosity. Core skills were described to Nigel as "superfriend" rules and were initially simply (1) giving the guest all of the choices throughout the playdate and (2) staying with the guest at all times. Corollary skills for parents are also taught as a means of ensuring that appropriate antecedent conditions are present for successful playdates. Nigel was inconspicuously prompted by his mother to use the skills immediately before and during the playdate (i.e. social coaching). After hosting a few enjoyable playdates at his home, Nigel began receiving reciprocal peer invitations.

Another focus of the programme was facilitating Nigel's awareness of the impact of his behaviours on others. For example, his frequent crying at school posed a barrier to friendships. The therapist held a respectful discussion with Nigel regarding the impact of losing one's composure on one's friendships using a guided discovery approach. Systematic Socratic questions were posed, including, "What are some things that fifth years do that are not cool?" and "What do fifth years think about a kid who's always upset at school? . . . You'd say batty or weird? Would they want to stay away from him? Would they want to stay friends with

him? ...Probably not, you're saying?" This discussion led Nigel to conclude, on his own terms, that public crying was a social faux pas and required correction (seemingly reflecting increased intrinsic motivation). A plan called "keeping my cool at school" was initiated with Nigel, in which he planned to refrain from crying when around others by asking the teacher for permission to take a "breather" outside whenever he began to feel anxious or distressed (an antecedent to crying that he could correct by calming himself in private with positive self-talk). This behaviour was also incorporated into Nigel's reward chart at home. His teacher assisted by sending home a daily checkbox reporting whether he had refrained from public outbursts (school-home notes of this sort have long been used successfully in behaviour management programmes). Despite the longstanding nature of this symptom, it quickly remitted in response to this effective combination of techniques.

In a similar manner, increased awareness of stereotyped hand mannerisms, their social consequences, and related behavioural changes were addressed with Nigel. While the rationale and method of suppression with self-monitoring has been described elsewhere in the context of perseveration and special interests in ASD (Sze and Wood, 2007), we suggest that this technique may be effectively applied to ASD-related repetitive motor mannerisms as well. Through Socratic questioning, Nigel quickly established insightful cognitions about his mannerisms (e.g. "my Asperger's makes me flap my hands; people around me will notice and think I'm weird") and learnt to suppress his hand-flapping using graduated benchmarks listed on his hierarchy (starting with no flapping for 15 minutes per day and slowly increasing the time).

The final emphasis of the programme involved mentoring encounters to enhance Nigel's perspective taking skills. In our pilot work, we have found that placing children in the role of a mentor or "big brother" can foster thoughtful reflection on others' needs and desires, typically a significant deficit in ASD. A mentoring opportunity was created at Nigel's school involving "supervising" a group of first years during snack time. Initial preparation for this task involved helping Nigel develop positive cognitions by filling in thought bubbles of "mentors" and "mentees" featured in cartoons he drew (e.g. "younger kids look up to older kids who are role models;" "it's a nice feeling to know that I've helped somebody out"), followed by "tagging along" (Kendall, 1994) on a brief (15–20 minutes) and positive mentoring experience led by the therapist at Nigel's school. Next, Nigel tried taking on the mentoring role with therapist supervision and eventually graduated to "independent" mentoring with modest support from a caring first year teacher. In terms of social behaviours, the mentoring exercise focused on increasing Nigel's patience in interacting with the pupils as well as giving age-appropriate compliments. As with the other tasks in this programme, mentoring was incorporated into Nigel's reward system. Nigel's efforts at volunteering his playtime for the first year class were received with enthusiasm by the children, which in turn reinforced his motivation and self-esteem.

Treatment outcome

At post treatment, evidence-based assessment procedures reflected significant clinical improvement. The diagnostic interview (ADIS-C/P) administered by a clinician unfamiliar with the case or the family's assignment to treatment or waitlist indicated that Nigel no longer met diagnostic criteria for SoP or GAD (ADIS-C/P CSR scores were 0 for all anxiety disorders) and that his anxiety symptoms were "very much improved" on the Clinical Global Impression—Improvement Scale (CGI-I). This diagnosis-free profile was sustained at 3-month

follow-up. Nigel and his mother reported that despite some shyness around unfamiliar people and occasional worries about social evaluation, Nigel no longer avoided these situations (in contrast to pretreatment) and that these mild worries did not compromise his functioning. Nigel noted that he had a habit of applying the coping skills learnt in CBT whenever he detected increased anxiety.

Questionnaire data revealed similar reductions in symptoms of anxiety. On the child report version of the Multidimensional Anxiety Scale for Children (MASC; March, 1998), Nigel had had clinically significant (T-scores ≥ 65) scores in Physical Symptoms, Social Anxiety, and Separation Anxiety at pretreatment. Each of these scales was in the normal range (T-scores ≤ 59) at post treatment and follow-up, with an average reduction of about 1 SD ($M = 10.3$ T-score points) from pretreatment to follow-up, which is considered to be a large clinical effect. Using clinical cut-scores derived for the parent-report version of the MASC, Nigel's mother had rated him in the clinical range for Social Anxiety and Separation Anxiety at pretreatment, whereas both scores were in the normal range at post-treatment and follow-up, reflecting clinically significant anxiety reduction.

Data from behavioural, social, and adaptive measures also suggest consistent improvements across other domains of functioning for Nigel. On the academic subscale (part of the Competence Scales) of the Child Behaviour Checklist (CBCL; Achenbach, 1991), Nigel's level of competence improved from the borderline clinical range ($T = 39$; 13thile) at pretreatment to well within the normal range at post-treatment ($T = 48$; 42ndile) and remained normal at follow-up ($T = 44$; 27thile). Nigel's mother's ratings on the Parent Version of the Social Skills Rating System (SSRS; Gresham and Elliot, 1990) revealed substantial increases in Nigel's overall social skills from exhibiting "fewer" skills than average in the standardization group at pre-treatment ($SS = 75$; 5thile) to "average" at post-treatment ($SS = 87$; 19thile) and follow-up ($SS = 87$; 19thile). Regarding adaptive functioning, parent report data from the Vineland Adaptive Behaviour Scales (VABS; Sparrow, Balla and Cicchetti, 1984) revealed improvements across all domains of daily living skills for Nigel as a result of his participation in the CBT programme. For example, his domestic daily living skills increased from the "moderately low" to the "adequate" range of his norm group from pre- to post-treatment and remained within age expectations at 3-month follow-up.

Finally, qualitative data indicate that the intervention was successful in improving Nigel's overall functioning. Nigel indicated that he greatly enjoyed his new friends, actively initiated playdates and informal get-togethers with them, and was "much more happier" because he no longer felt like the "odd man out" in social relationships, but rather felt very much "in the gang" and that he had a group of eight friends with whom he played in and out of school. Nigel was also extremely proud of the progress he made in "shrinking" his Asperger's symptoms, stating that while he had yet to "defeat" the disorder, it had become "much smaller" since his participation in the programme.

Discussion

In the treatment of typically developing children with anxiety disorders, a reduction of anxiety is typically closely tied with corresponding improvements in social adjustment and academic performance (Wood, 2006), suggesting that anxiety itself is a primary barrier to adaptive functioning in this population of children. However, the same cannot be assumed for children with ASD and concurrent anxiety. Although anxiety can clearly worsen the

clinical picture for children with ASD, as illustrated in this case example wherein various anxieties were linked with stressful daily battles over homework completion as well as avoidant social behaviour, there is an important caveat. Traditional exposure therapy focusing only on habituating to feared situations may be insufficient to attain improvements in adaptive functioning and social adjustment when ASD is present. Additional therapeutic elements that can work in conjunction with anxiety-reduction procedures to build up deficient skills (e.g. generosity and consideration of others, or self-help skills) and reduce problematic ASD-related behaviours (e.g. perseverative speech or motor mannerisms) are probably needed to achieve positive functional outcomes in the social, academic, and personal domains that approximate those enjoyed by typically-developing children with anxiety disorders receiving CBT. It is encouraging that theoretically-based enhancements to standard CBT, as illustrated in this case study, may be able to achieve such functional improvements.

It is notable that the expanded CBT framework appeared to have collateral positive effects on some of this patient's core ASD symptoms. The primary rationale for including ASD-focused enhancements to the *Building Confidence* programme was to overcome ASD-related barriers to anxiety reduction and functional improvement. There was no assumption made that ASD symptoms themselves would be addressed to a sufficient extent by the modified procedures to lead to possible remission of such symptoms. This is in part due to the substantial difficulty documented in the literature of improving core social deficits among youth with ASD through psychosocial intervention (e.g. Rogers, 2000). Nonetheless, over the course of treatment, not only did Nigel exhibit remission in his generalized and social anxiety symptoms, but he also appeared to improve in the core ASD domains of poor reciprocal communication, stereotypical movements, poor perspective taking, and failure to maintain peer relationships, as well as the related domain of impaired self-help skills. These findings add to the preliminary literature in the area of ASD and concurrent anxiety (Attwood, 2004; Hare, 1997; Reaven and Hepburn, 2003; Sofronoff et al., 2005; Sze and Wood, 2007), suggesting that the application of CBT to school-age children with ASD may be worthy of more systematic and intensive study. It is possible that with further expansion of some of the CBT enhancements developed for this pilot trial, several core ASD symptoms might be targeted explicitly with some hope of substantial clinical improvement.

Acknowledgements

This research was funded by a Treatment-Related grant from the Cure Autism Now Foundation awarded to Jeffrey J. Wood.

References

- Achenbach, T. M.** (1991). *Child Behavior Checklist*. Burlington, VT: University of Vermont.
- Attwood, T.** (2004). Cognitive behaviour therapy for children and adults with Asperger's syndrome. *Behaviour Change*, 21, 147–161.
- Chalfant, A. M., Rapee, R. and Carroll, L.** (2007). Treating anxiety disorders in children with high functioning autism spectrum disorders: a controlled trial. *Journal of Autism and Developmental Disorders*, 37, 1842–1857.
- Gresham, F. M. and Elliot, S. N.** (1990). *Social Skills Rating System*. Circle Pines, MN: American Guidance Service.

- Hare, D. J.** (1997). The use of cognitive-behavioral therapy with people with Asperger syndrome: a case study. *Autism, 1*, 215–225.
- Kendall, P. C.** (1994). Treating anxiety disorders in children: results of a randomized clinical trial. *Journal of Consulting and Clinical Psychology, 62*, 100–110.
- March, J. S.** (1998). *Multidimensional Anxiety Scale for Children*. North Tonawanda, NY: Multi-Health Systems.
- Reaven, J. and Hepburn, S.** (2003). Cognitive-behavioural treatment of obsessive-compulsive disorder in a child with Asperger syndrome: a case report. *Autism, 7*, 145–164.
- Rogers, S. J.** (1998). Empirically supported comprehensive treatments for young children with autism. *Journal of Clinical Child Psychology, 27*, 168–179.
- Rogers, S. J.** (2000). Interventions that facilitate socialization in children with autism. *Journal of Autism and Developmental Disorders, 30*, 399–409.
- Silverman, W. K. and Albano, A. M.** (1996). *The Anxiety Disorders Interview Schedule for DSM-IV—Child and Parent Versions*. San Antonio, TX: Graywind.
- Sofronoff, K., Attwood, T. and Hinton, S.** (2005). A randomized controlled trial of CBT intervention for anxiety in children with Asperger syndrome. *Journal of Child Psychology and Psychiatry, 46*, 1152–1160.
- Sparrow, S. S., Balla, D. and Cicchetti, C.** (1984). *Vineland Adaptive Behavior Scales*. Circle Pines, MN: American Guidance Services.
- Sze, K. M. and Wood, J. J.** (2007). Cognitive behavioural treatment of comorbid anxiety disorders and social difficulties in children with high-functioning autism. *Journal of Contemporary Psychotherapy, 37*, 133–143.
- Wood, J. J.** (2006). Effect of anxiety reduction on children's school performance and social adjustment. *Developmental Psychology, 42*, 345–349.
- Wood, J. J., Drahota, A., Sze, K. M., Har, K., Chiu, A. and Langer, D.** (in press). Cognitive behavioral therapy for anxiety in children with autism spectrum disorders: a randomized, controlled trial. *Journal of Child Psychology and Psychiatry*.
- Wood, J. J. and McLeod, B. M.** (2008). *Child Anxiety Disorders: a treatment manual for practitioners*. New York: Norton.
- Wood, J. J., Piacentini, J. C., Southam-Gerow, M., Chu, B. C. and Sigman, M.** (2006). Family cognitive behavioural therapy for child anxiety disorders. *Journal of the American Academy of Child and Adolescent Psychiatry, 45*, 314–324.