

## Adapting an Emerging Empirically Supported Cognitive-Behavioral Therapy for Adults With ADHD and Comorbid Complications : an example of two case studies

By: John T. Mitchell, [Rosemary O. Nelson-Gray](#), [Arthur D. Anastopoulos](#)

Mitchell, J. T., Gray, R. N., & Anastopoulos, A. D. (2008). Adapting an emerging empirically-supported cognitive-behavioral therapy for adults with AD/HD and comorbid complications: A case study. *Clinical Case Studies*, 7(5), 423-448.

Made available courtesy of Sage Publications: <http://dx.doi.org/10.1177/1534650108316934>

\*\*\*© The authors. Reprinted with permission. No further reproduction is authorized without written permission from Sage Publications. This version of the document is not the version of record. Figures and/or pictures may be missing from this format of the document. \*\*\*

### Abstract:

Attention-deficit/hyperactivity disorder (ADHD) is commonly considered a disorder that affects children and adolescents; however, follow-up studies of those diagnosed with ADHD indicate significant continuation and impairment into adulthood. For these adults, pharmacotherapy is effective in some cases, but residual symptoms and secondary problematic behaviors resulting from ADHD symptoms (e.g., depressed mood) are typical. Several researchers have identified cognitive-behavioral approaches as a promising adjunct to pharmacotherapy. In particular, a recently manualized cognitive-behavioral therapy has demonstrated significant reductions in ADHD symptoms in a controlled study. The primary purpose of this article is to demonstrate the potential of this approach. To do so, we review two case studies of adults diagnosed with ADHD to illustrate (a) the heterogeneity associated with ADHD cases and the unique challenges they present, (b) issues related to comorbid disorders and symptoms with ADHD, and (c) how to adapt this emerging empirically supported treatment.

**Keywords:** adult ADHD | cognitive-behavioral therapy | comorbidity

### Article:

#### 1 Theoretical and Research Basis

Attention-deficit/hyperactivity disorder (ADHD) is characterized by the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision) as a developmental disorder affecting approximately 3% to 7% of children and involves impaired sustained attention, poor resistance to distraction, difficulty delaying responses, and hyperactivity relative to peers (American Psychiatric Association, 2000; Barkley, 2006a). These characteristics converge onto two core sets of ADHD symptoms: inattention and hyperactivity-impulsivity. Based on endorsement ratings of these core symptoms, those diagnosed with ADHD are categorized into three different subtypes: predominantly inattentive, predominantly hyperactive-impulsive, or combined.

Although historically considered a disorder that affects children and adolescents, followup studies demonstrate that these symptoms and related impairment commonly persist into adulthood for the majority of cases (Barkley, Fischer, Smallish, & Fletcher, 2002; Weiss & Hechtman, 1993). Such persistence into adulthood has a number of negative consequences in economic, occupational, social, and academic domains (Barkley, 2006b; Faraone et al., 2000; Mannuzza & Klein, 1999). In addition, comorbid disorders, such as anxiety, depression, and substance abuse are significantly elevated in ADHD samples and further contribute to poorer functioning (Shekim, Asarnow, Hess, Zaucha, & Wheeler, 1990; Wilens, Biederman, & Spencer, 2002).

Pharmacological treatments for adults who continue to meet diagnostic criteria for ADHD are beneficial and are actively studied (Prince, Wilens, Spencer, & Biederman, 2006). Conversely, there is relatively less controlled research on psychotherapy options for these adults (Murphy, 2006). Several researchers, however, have used cognitive-behavioral therapy (CBT) strategies to improve functioning among adults diagnosed with ADHD and have yielded promising results (Hesslinger et al., 2002; McDermott, 2000; Murphy, 2006; Ramsay, 2002; Ramsay & Rostain, 2003, 2005a, 2005b, 2005c; Rostain & Ramsay, 2006; Safren, Sprich, Chulvick, & Otto, 2004; Wilens et al., 1999; Young, 2002). For example, a recent randomized controlled design demonstrated that a cognitive remediation program improved ADHD symptoms above and beyond a wait list control group (Stevenson, Whitmont, Bornholt, Livesay, & Stevenson, 2002). Although some participants received pharmacological treatment, medication status did not have a significant effect on assessment or outcome measures. In another controlled treatment outcome study, Safren, Otto, et al. (2005) demonstrated that ADHD adults who completed a manualized CBT while also receiving medication management endorsed significantly fewer ADHD symptoms, depressive symptoms, and anxiety symptoms in comparison to a group of ADHD adults receiving medication only. Given its manualized format and emerging empirical support, this latter treatment, *Mastering Your Adult ADHD* (Safren, Perlman, Sprich, & Otto, 2005), was administered in the current adult ADHD case studies.

The *Mastering Your Adult ADHD* treatment (Safren, Perlman, et al., 2005) is composed of core modules that address (a) knowledge of ADHD as a disorder, (b) organization and planning skills, (c) reducing distractibility (e.g., introducing stimulus control techniques), and (d) cognitive restructuring to target secondary maladaptive depressive and anxious thoughts. Additional optional modules apply these techniques to problems with procrastination and to prevent symptom relapse (see Table 1 for a summary). Given that most of the problematic behavioral repertoires of adults with ADHD are chronic and ongoing, there is a particular emphasis on the repetition of new adaptive behavioral and cognitive strategies between sessions.

This treatment targets those who have been stabilized on medication but still exhibit residual symptoms and functional impairment. For instance, although medications are effective, 20% to 50% are considered nonresponders, whereas the remainder show a reduction in less than 50% of the core ADHD symptoms (reviewed in Safren, Perlman, et al., 2005). Also, although psychopharmacological treatment may reduce the impact of core ADHD symptoms, clients do not necessarily learn ways to cope with functional impairment associated with ADHD symptoms (e.g., managing appointments, coping with depressive or

anxious thoughts that have emerged from a background of repeated failures resulting from ADHD symptoms). The Mastering Your Adult ADHD program aims to improve functioning in these domains and to complement the effectiveness of psychopharmacological treatment.

Table 1. Summary of CBT Modules

Module	Goals	Exercises/Activities
1. ADHD Psychoeducation	Understand general ADHD characteristics and ADHD into adulthood	Overview empirical characteristics of ADHD
	Understand the manualized treatment program	Overview the empirical background of this CBT
	Assess motivation to change and define treatment goals	Evaluate short-term and long-term consequences of behavior change
2. Organization and Planning	Introduce calendar system	Enter all appointments in one calendar
	Introduce prioritized task list	Create task list and apply the A–B–C prioritizing technique
	Learn how to break down large tasks into manageable steps and select an action plan	Problem-solving technique, break down large tasks into smaller components
3. Reducing Distractibility	Develop a sorting and filing system for important papers	Only Handle It Once (OHIO) technique and create a filing system
	Gauge attention span	Measure how long client can attend to problematic everyday tasks and break down tasks to fit within this amount of time
	Reduce distraction to goal irrelevant thoughts	Distractibility delay technique
4. Adaptive Thinking	Modify the environment to reduce the number of distractible objects and increase on-task behavior	Modify antecedents to off-task behavior that characterizes distraction Stimulus control techniques
	Identify maladaptive depressive and anxious automatic thoughts	Complete automatic thought-recording form
	Label maladaptive automatic thoughts	Identify themes of automatic thoughts (e.g., jumping to conclusions)
5. Procrastination	Respond to automatic thoughts with adaptive thoughts	Evaluate evidence for the accuracy of the maladaptive thought and correct it
	Increase use of previously introduced techniques and apply them to instances of procrastination	Adapt previously introduced techniques to procrastination
6. Prevention Relapse	Address maintenance of previous gains	Review client's ability to apply different techniques and assess their utility
	Troubleshoot recurrent problems	

Note: An optional session involving the inclusion of a family member is also listed in the *Mastering Your Adult ADHD* manual that is not listed above.

On a theoretical level, pharmacological treatments are hypothesized to affect the core neuropsychological impairments in ADHD that lead to poor attention and impulsivity (e.g., Barkley, 1997; Nigg, 2006), whereas this manualized CBT is hypothesized to primarily target the downstream, secondary effects of neuropsychological impairment. Examples of these secondary effects include failure to adopt adaptive compensatory strategies to cope with ADHD symptoms across the life span and a history of repeated failure that leads to negative beliefs and negative affect.

We present two clinical case studies of adults diagnosed with ADHD in which we

administered the Mastering Your Adult ADHD (Safren, Perlman, et al., 2005) manualized CBT. Our presentation includes two primary objectives. First, we hope to demonstrate the heterogeneity of adult ADHD cases and the unique challenges they present. These idiographic challenges require adapting the treatment to the client, such as addressing comorbid borderline personality disorder features in one client. A second objective is to demonstrate the application of an emerging empirically supported, manualized treatment and to suggest possible refinements. That is, we hope to demonstrate the case study effectiveness of this treatment, while also providing examples of modifications we made in an effort to inform the continued development of this promising treatment.

## **2 Case Presentation: Case Study 1**

Jake<sup>1</sup> was a 23-year-old White male who presented to the ADHD Clinic at the University of North Carolina at Greensboro (UNCG). He was referred by a disability services department at a local public university he attended. In addition to seeking academic services because of difficulties related to distraction, disorganization, and reading comprehension, Jake expressed an interest in learning skills to cope with his apparent ADHD symptoms in school, social settings, and work. In the past, he had experienced difficulty concentrating in the classroom and had also experienced some problems at his job that appeared related to ADHD symptoms. Jake had never received any type of formalized mental health assessment, although he had received psychopharmacological treatment from his general physician for the past 4 years (40 mg of Strattera twice daily). Although it is not necessarily the best practice to engage in ADHD treatment without a thorough evaluation given the heterogeneity of ADHD cases and various comorbidity complications (Anastopoulos & Shelton, 2001), Jake's situation is not uncommon in our experience.

## **3 Presenting Complaints: Case Study 1**

Jake had just begun attending a local university and was concerned that his current distractibility and disorganization would become problematic as it had in the past. After high school, Jake moved away from home and immediately began attending college. After 2 years of difficulty keeping up in his classes and being placed on academic probation, Jake decided to withdraw. He attributed his performance to being easily distracted by extraneous stimuli in class and therefore missing out on crucial information. In addition, he found it difficult to study outside class. Jake reported that as his academic problems worsened, he began to notice that he frequently became anxious about his academic performance. Following withdrawal from college, he returned home and attended a local college for 2 years. Now that he was returning to the first university, he was concerned that his performance would once again worsen given his loss of support (e.g., living at home and having fewer responsibilities, such as cooking or paying bills). In addition, he was concerned that his anxiety that had developed following his past failures in school would further impede his academic progress. Overall, although his presenting problems appeared to be associated with ADHD and anxiety, Jake's anxiety seemed secondary to his ADHD symptoms because his anxiety emerged after his poor academic performance, which apparently resulted from his ADHD symptoms.

Jake noticed that his current difficulty staying organized and focused was affecting his

performance at work as well. Although he had never been fired from a job, he had experienced negative feedback as a result of his disorganization. For example, Jake had been working at an auto supply company where he performed a variety of tasks (e.g., taking orders from clients). Jake had developed some maladaptive strategies to cope with his frustration over his difficulty staying organized. In particular, Jake reluctantly admitted that on 5 to 10 occasions in the past 2 years, he had engaged in self-injurious behavior. Specifically, he would cut the top of his arm with a knife, which always resulted in bleeding. He clarified that he did not engage in these self-injurious behaviors to purposefully harm himself, rather, he engaged in these behaviors in the context of feeling frustrated after receiving negative feedback from his employer as the result of errors that occurred because of his lack of attention to detail. Jake also reported recurrent problems managing his finances (e.g., over withdrawing from his bank account).

#### **4 History: Case Study 1**

Jake provided a developmental health history and did not report any notable health complications relevant to his presenting complaints. Regarding academic history, Jake's performance was *not good* and he was a self-professed *wild child*. This was typified by frequently getting into trouble as a result of talking too much at inappropriate times and physical overactivity. However, his behavior did not result in any major difficulties at the time. His grades were typically in the C range. He also recalled that in high school, he began to notice that he had difficulty concentrating and that *teachers made comments that they had to give me something to do to keep me on track*. Jake also reported that he began to experience more anxiety in social settings and started to *keep to myself* in high school. Overall, whereas his childhood appeared to indicate a high frequency of overt hyperactive-impulsive behaviors, his adolescence appeared to be characterized by inattentiveness and anxiety. We focused on this developmental sequence throughout assessment to delineate primary from secondary problems and to inform any differential diagnosis concerns. He also reported that his anxiety began affecting his test performance. He would typically second guess himself because of his awareness that he did not know most test materials, which was the result of difficulty concentrating in class and inadequate organization outside class.

Jake reported that his anxiety in social situations had become more noticeable. He indicated that he had few close friends or romantic relationships in high school. He had some friends at the time of his evaluation, but overall he reported that they were few. Thus, in addition to his difficulty in academic and occupational domains, Jake was also concerned about his social anxiety as he was moving away from home to attend school. He reported using alcohol socially, but his use was not problematic and was typical for his age. He had never used any illegal drugs.

#### **5 Assessment: Case Study 1**

Jake received a full psychological assessment that included a semistructured background interview, the Structured Clinic Interview form for *DSM-IV* Axis I and Axis II disorders (SCID-I and SCID-II, respectively; First, Gibbon, Spitzer, Williams, & Benjamin, 1997; First, Robert, Spitzer, Gibbon, & Williams, 1997), a semistructured interview based on the ADHD module of the Computerized-Diagnostic Interview Schedule for Children-IV (C-DISC-IV; National Institutes of Mental Health, 1997), Symptom Checklist-90-Revised

(SCL-90-R; Derogatis, 1975), Conners' Adult ADHD Rating Scale (CAARS; Conners, Erhardt, & Sparrow, 2000), Conners' Continuous Performance Test II (CPT-II; Conners & Multi-Health Systems Staff, 2002), and the ADHD Rating Scale (ADHDRS; self and other report versions; DuPaul, Power, Anastopoulos, & Reid, 1998) modified for adults. Because Jake had concerns about his reading comprehension, the Wechsler Adult Intelligence Scale (WAIS, 3rd ed.; Wechsler, 1997) and the Woodcock-Johnson III Tests of Achievement (WJ 3rd ed., Form A; Woodcock, McGrew, & Mather, 2001) were also administered.

Norm-based scores on self-report behavior rating scales indicated elevated ADHD symptoms. On the CAARS, he endorsed scores in the clinical range for Inattention (95th percentile), Hyperactivity (99th percentile), Impulsivity (98th percentile), and Problems with Self-Concept (96th percentile). Jake's report on the ADHDRS corroborated these ratings. However, these self-report scales demonstrated little discriminatory value because Jake also reported clinically elevated scores on the SCL-90-R. For instance, Jake scored at or above the 99th percentile on the Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, and Psychoticism scales. These scores indicated that Jake was endorsing a high amount of distress and/or had a tendency to overreport. To interpret these elevated scales, we considered scores from interviews and other reporters.

On the ADHD module from the C-DISC-IV, Jake endorsed 7 of 9 hyperactive-impulsive *DSM-IV* symptoms and 9 of 9 inattentive *DSM-IV* symptoms in the past 6 months. Consistent with this report, his mother confirmed the presence of these symptoms over the past 6 months (i.e., 7 of 9 symptoms of inattention and 7 of 9 symptoms of hyperactivity-impulsivity) and confirmed that these symptoms were present prior to age 7 (i.e., 9 of 9 inattention and 9 of 9 hyperactive-impulsive symptoms) on the ADHDRS. Jake reported that his inattention had been consistently present for the past 6 months, and he began to notice these symptoms in high school. He stated that these symptoms had been consistent since then and were stressful to him. Jake also reported that these symptoms had contributed to his poor academic performance, difficulty in social situations (i.e., getting lost in conversations or suddenly shifting topics), and at work (i.e., incorrectly writing down orders and submitting bills). Jake stated that the hyperactive-impulsive symptoms he endorsed had been consistently present for the past 6 months and that he had always been this way. Regarding his comments that he kept to himself in high school and his anxiety, he stated that he would talk in class but would not talk to others outside class. In addition to causing problems at school and work, these symptoms *sometimes* caused problems at home and with friends. Finally, Jake's scores were elevated on some indices of impulsivity on the CPT II, such as a high hit rate (97th percentile). Overall, Jake's high inattentive and hyperactive-impulsive ADHD symptom endorsements were supported by his mother's report, who also confirmed the onset of his symptoms prior to age 7. In addition, his symptoms were cross-situational and functionally impairing. Finally, comorbid conditions could not better account his symptoms (see below). Given this evidence, Jake met diagnostic criteria for ADHD (combined type).

Jake also endorsed clinically elevated symptoms suggestive of generalized anxiety disorder as measured by the SCID-I. In addition, Jake endorsed some symptoms for psychological disorders on Axis II as measured by the SCID-II. He met diagnostic criteria for avoidant personality disorder and endorsed subclinical depressive personality features (e.g., feeling inadequate and self-critical). He stated that his depression was primarily associated with frustration that results from problems associated with his disorganization and lack of

concentration. Finally, Jake endorsed some borderline personality disorder symptoms. Although he did not meet full diagnostic criteria, he most notably endorsed engagement in self-injurious behaviors (discussed above).

According to Jake's performance on the WASI and WJ, his full scale IQ score of 107 (average range) consistently exceeded his academic achievement cluster scores in basic reading, reading comprehension, math calculation, math reasoning, and written expression. Because these discrepancies did not follow a trend as would be expected for a learning disorder (i.e., lower scores in one particular domain), a more parsimonious explanation was that his ADHD symptoms interfered with learning during childhood, which could result in nonspecific but consistent discrepancies in which Jake's intellectual potential exceeds his academic performance. Overall, Jake's diagnostic summary included the following diagnoses on Axes I and II: ADHD (combined type), generalized anxiety disorder, avoidant personality disorder, and depressive and borderline personality features.

## **6 Case Conceptualization: Case Study 1**

Jake's comorbid status was a primary concern in considering treatment recommendations. We hypothesized that his anxiety was secondary to his ADHD symptom onset in childhood. For example, Jake felt that his anxiety impeded his academic functioning (e.g., feeling anxious in a testing situation) and social functioning (e.g., approaching a female he finds attractive). We hypothesized that repeated episodes of poor academic functioning or difficulty engaging in social interactions resulting from ADHD behaviors in childhood could make future academic and social interactions anxiety provoking. As a result of Jake's awareness of such experiences, it was possible that Jake began to experience worrisome thoughts about future failures. In addition, we hypothesized that his perceived history of repeated failures could also increase depressive features and his adoption of maladaptive coping skills when he felt frustrated with his failures (i.e., engagement in self-injurious behaviors). Overall, we did not consider his clinically relevant features as separate and unrelated but rather as secondary consequences of ADHD behaviors present since childhood.

We recommended that Jake's treatment first focus on his ADHD symptoms. We chose to implement the *Mastering Your Adult ADHD* treatment program given its manualized format and accompanying client workbook. Also, Jake was already taking medication for his ADHD symptoms and many of the comorbid features Jake endorsed were addressed in the manual (i.e., poor organizational skills, difficulty staying on task, depressive and anxious thoughts, and problems with procrastination). In addition to targeting depressive and anxious cognitions that had likely developed secondary to his ADHD symptoms, Jake exhibited cognitions thematically associated with ADHD symptoms, such as *I can wait to the last minute to get this done*. Jake's only comorbid feature that would not be addressed by the manualized CBT was his cutting behavior. Therefore, we chose to implement portions of mindfulness and distress tolerance training modules from the *Skills Training Manual for Treating Borderline Personality Disorder* (Linehan, 1993). Although medication options in addition to his current regimen were available, Jake expressed an interest in attempting individual therapy first.

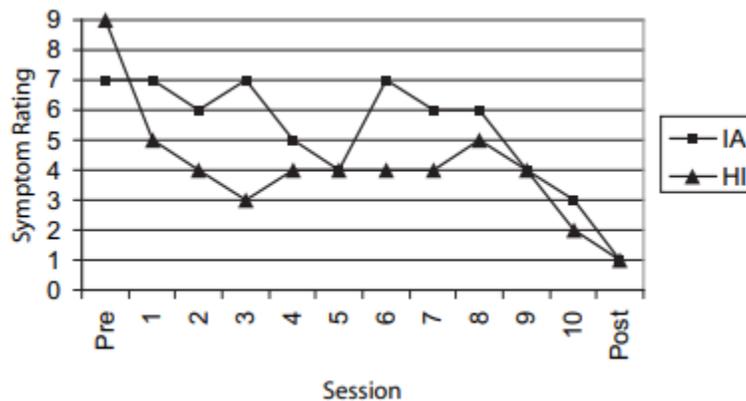
## **7 Course of Treatment and Assessment of Progress: Case Study 1**

Jake participated in eleven 50-min sessions over the course of approximately 4 months. See Table 1 for a summary of the core CBT modules introduced. Because Jake’s family did not live nearby and he did not have any close friends or significant others he wished to include in treatment, the optional session including others was dismissed. In addition, although each session involved a review of medication adherence, this is not discussed below given that Jake took his medication as prescribed and this aspect of treatment did not affect therapy. As an overview, each session begins with setting an agenda and reviewing the severity of ADHD symptoms for that week. Each session is also preceded by reading a chapter in the *Mastering Your Adult ADHD* workbook during the previous week.

Before the first treatment session, Jake completed the ADHDRS as a baseline rating of his ADHD symptoms. Although Figure 1 indicates that he endorsed fewer hyperactive-impulsive symptoms between his assessment and the first session, his inattentive symptoms were consistent. In general, both sets of symptoms were elevated.

Module 1 (see Table 1) was completed during the first treatment session. Within this module, basic knowledge about ADHD and its developmental nature was introduced. This information provides the rationale that problematic ADHD behaviors are like habits or behavioral routines that require continued skills implementation. Jake stated that he wanted to target his tendency to wait until the last minute with his school assignments. Instead of finishing his assignments on time, he would engage in more immediately reinforcing behaviors (e.g., playing video games or *surfing* the Internet). In addition, he identified his poor organizational skills at work as a skill he would like to improve. We defined some concrete indicators of therapeutic improvement based on these goals (e.g., completing school assignments earlier during the day while refraining from engaging in other distracting activities). We also reviewed his aspirational values in life and how his concrete treatment goals functioned to decrease any discrepancy between these values and goals. Jake was also prompted to think in terms of the functionality of his behaviors and cognitions (i.e., *Is this behavior helpful in working toward my goals and values?*). We also reviewed self-defeating cognitions that may impede therapy and his attempts to carry out behavioral homework assignments. Because we had not yet started the cognitive training module, Jake was asked to simply notice these thoughts and to “*put them off until later*” and to be willing to “*try on*” new behaviors.

Figure 1. A summary of ADHD symptom endorsements for Case Study 1



Note: IA = Inattentive ADHD symptoms; HI = Hyperactive-Impulsive ADHD symptoms

We also reviewed his previous attempts to improve his organizational skills, such as attempting to commit everything to memory and “*do it all in my head.*” We simply categorized these attempts as effective or ineffective as a way to assess whether a change in behavior is indicated. For homework, he was asked to start engaging in a different organizational skill. That is, enter all of his appointments in his calendar and begin a master task list. In addition to his chapter readings that accompany this session in the client workbook, Jake also received a one-page self-monitoring form to track his fidelity to the homework assignment.<sup>2</sup>

The Organization and Planning module (see Table 1) was conducted during Sessions 2 through 4. Jake was able to successfully carry out the exercises in this module (listed in Table 1). Some homework assignments, however, were initially difficult for him to complete. For example, Jake had difficulty creating and updating his prioritized task list on a daily basis. Instead, because Jake was not prioritizing his tasks or never writing them down, he would commonly forget one task for another. In the long term, these tasks that were attended to were less important and served more as a distraction. More critical tasks would commonly be overlooked. As a solution, we decided to use a discriminative stimulus at a certain time each day (i.e., an alarm on his cellular phone) to remind him to update his prioritized task list. Given that Jake began to notice the immediate reinforcing effects of this organized behavior by simply minimizing distress associated with his disorganization, this behavior was eventually able to become established.

During this module, he was also able to abandon old ineffective strategies (e.g., writing on small, separate pieces of miscellaneous paper). His response to problem-solving exercises was positive as well. For instance, in between sessions he reported that he was able to stop himself from acting and consider the pros and cons of different solutions. Throughout these exercises, we also differentiated the reinforcing effects of these new techniques into temporal categories (i.e., short-term and long-term reinforcers). The purpose in doing this was to prompt Jake to respond to not just the effects of short-term reinforcement (which is typical of impulsivity associated with ADHD) but also to consider the long-term beneficial effects of his planned and organized behavior. Also, when we focused on the consequences of these organized and planned behaviors, Jake was also prompted to notice both the positive practical consequences (e.g., completing work promptly) and positive emotional consequences (e.g., feeling that something was fully complete) to emphasize the immediately reinforcing aspects of this behavior.

The Reducing Distractibility module (see Table 1) was conducted during Sessions 5 and 6. In addition to completing his behavioral homework assignments from the last module, Jake was able to increasingly use environmental modification and stimulus control techniques of outside therapy. For instance, he provided examples in which he was able to successfully study at home when he unplugged his video game system and computer. Again, we reviewed the reinforcing effects of engaging in these new strategies and the importance of continued practice to establish new, more adaptive behavioral repertoires. In addition to gauging his attention span (see Table 1), he had also begun planning tasks based on a goodness of fit between the time requirements of different tasks and his estimated attention span. For tasks that required larger amounts of time, Jake was able to appropriately break down these tasks into smaller time increments.

Although Jake had progressed successfully in therapy, he reported toward the end of Session 5 that he had cut himself on the arm at work following an episode in which he felt frustrated as a result of a negative interaction with his employer. This interaction was

prompted by an organizational mistake that Jake had made, which was consistent with our conceptualization of Jake's self-injurious behavior within the context of disorganized behavior. The last time Jake had cut himself was 5 months ago. Thus, although this occurrence was infrequent, it was problematic and its potential to worsen in severity was of concern. He appeared somewhat ashamed and reluctant to talk about it. Following a suicide assessment in which it was confirmed that Jake was not suicidal, he contracted to withhold from harming himself. Prior to introducing distress tolerance skills module from Linehan's (1993) *Skills Training Manual for Treating Borderline Personality Disorder*, we reviewed the mindfulness module as a foundation for these later skills (e.g., distinguishing between Wise, Reasonable, and Emotional Minds).

During the next session, upon confirmation that Jake did not engage in any self-injurious behavior, we reviewed antecedents that cue an increased likelihood of this behavior. Distress tolerance techniques that Jake could engage in as an adaptive response to these cues were introduced (e.g., using imagery to relax or take a brief break from the situation). In addition to the homework assignment to practice reducing distractibility, Jake was assigned to apply distress tolerance skills whenever he felt his stress level increasing.

Sessions 7 through 9 comprised the Adaptive Thinking module (see Table 1). In addition to his successful implementation of distress tolerance skills and skills from the previous ADHD modules, Jake was able to identify, label, and provide an adaptive response to maladaptive, automatic depressive and anxious thoughts. We also relied on information introduced in the psychoeducation module to enhance this cognitive therapy portion of treatment. That is, Jake's anxious and depressive thoughts were validated and discussed as a normal response to functionally impairing ADHD symptoms that result in repeated failures in various domains. In the course of identifying Jake's maladaptive depressive and anxious thoughts, he also appeared to experience thoughts associated with ADHD (e.g., *I can put this off until later and I'm good at doing things last minute*), which is not emphasized in the manualized approach. For these cognitions, instead of focusing on rational responses to these automatic thoughts, we made a clear distinction in emphasizing the adaptiveness or functionality of the automatic thought. For example, although Jake's automatic thoughts that he could wait until the last minute to complete a task were accurate, such behavior caused distress, frustration, and poorer work quality.

Session 10 was the last weekly session and was a one-session module on procrastination (see Table 1). Jake reported that he completed the majority of the homework assignments from the previous modules. Overall, Jake found the following techniques beneficial: completing a prioritized task list, monitoring automatic thoughts, and modifying the environment to reduce distractibility from immediately reinforcing stimuli (e.g., studying in non-stimulating environments to reduce distractibility and increase attending to study materials). We also discussed the importance of maintaining his efforts to improve his functioning as they gradually part of his daily routine (again, we stressed to Jake that behavioral change is reinforcing in the long term). We also reviewed techniques Jake could apply to any problems with procrastination, although the primary focus of this session was maintaining gains made in therapy. Jake felt pleased with his improvement and commented that he had even begun noticing himself stop and consider the consequences of his actions, which was drastically different from how he behaved prior to treatment.

## **8 Complicating Factors: Case Study 1**

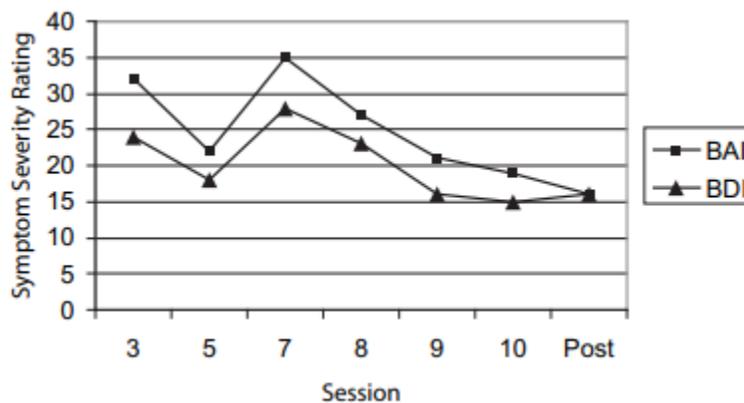
Fortunately, Jake was able to implement skills introduced in therapy and experience relatively immediate positive results. The primary complicating factor in his treatment was his self-injurious behavior, although he responded well to distress tolerance and mindfulness techniques. Regarding his medication management, he continued to receive services from his primary care physician. Throughout treatment his medication regimen was maintained, which was effective according to Jake and his prescribing physician.

## 9 Follow-Up: Case Study 1

A 50-min follow-up session was conducted approximately 1 month after Jake's last weekly session (see Table 1). Jake reported that he had not yet had any major relapses, although he had noticed that when he fell into old behavioral routines (e.g., waiting until the last minute), he was able to apply techniques introduced in therapy. Indeed, he reported that he was doing well at school (e.g., his grades had improved), work, and socializing with friends (e.g., he had begun dating someone). We also reviewed skills introduced in treatment that Jake planned to review in the future in anticipation of temporary setbacks. Again, the importance of repeated monitoring and use of therapy skills was emphasized. In addition, we reviewed his self-injurious behavior and distress tolerance skills. Jake had not engaged in any self-injury since Session 5 and reported that he had not had any urges to do so either. Finally, we discussed future therapy options in terms of anxiety. However, Jake felt that he was doing much better socially, which he attributed to monitoring and responding to his maladaptive thoughts in social interactions.

Jake's in-session report of improvement was further corroborated by more objective ADHD, depressive, and anxious symptom severity ratings throughout the course of treatment (see Figures 1 & 2 for a summary). Figure 1 demonstrates that both inattentive and hyperactive-impulsive ADHD symptoms continued to decrease throughout therapy. As noted in Figure 2, Jake's depressive and anxious symptoms followed a similar trend in improvement. Collecting these type of data and providing feedback to Jake in this way was beneficial because it illustrated the progress he had made. Also note that there were no changes in Jake's medication regimen at this time.

Figure 2 A summary of depressive and anxiety symptoms for Case Study 1



Note: BAI = Beck Anxiety Inventory scores; BDI = Beck Depression Inventory scores

## 10 Case Presentation: Case Study 2

In addition to demonstrating heterogeneity of adult ADHD cases, another purpose of presenting a second case study is to provide an example of a client who experienced more difficulty in treatment and to provide suggestions of how to assist clients with similar diagnoses but different therapeutic needs. Aaron<sup>1</sup> was a 40-year-old White male who presented to the UNCG psychology clinic. Aaron had received a full psychological evaluation within the past 4 months at another clinic and was seeking cognitive-behavioral treatment as an adjunct to his medication regimen (Concerta, 72 mg; Cymbalta, 60 mg; and Wellbutrin, 440 mg). Aaron was diagnosed with depression and ADHD (subtype unspecified). According to Aaron's full psychological evaluation, he had a history of elevated inattentive and hyperactive-impulsive ADHD symptoms in childhood that negatively affected his academic and social functioning. Currently, these symptoms were negatively affecting his occupational and marital functioning. Aaron's depressive features were secondary and developed later in adulthood.

## 11 Presenting Complaints: Case Study 2

Aaron and his wife of 10 years attended the assessment session. Regarding his marital status, 2 years ago, Aaron and his wife had separated for a few months. This separation was initiated by his wife and was attributed to Aaron's difficulty staying on task, which resulted in unemployment and financial problems that stressed their relationship. Aaron's wife reported that *I often feel that my role has become more of a parenting role than that of a wife* as the result of Aaron's inefficient use of time and inability to start and complete tasks. Recently, Aaron and his wife had a child, which naturally increased the organizational demands for Aaron and made his ADHD symptoms even more apparent. In terms of employment, Aaron had been unemployed for approximately 1 year. He had difficulty managing his time and sent out few resumes relative to the amount of time he had available.

## 12 History: Case Study 2

Because Aaron received a full psychological evaluation elsewhere, the majority of his background information is based on that report. Aaron's development was considered typical without any major complications. In terms of medical history, Aaron had pancreatitis, which was the result of increased alcohol use for a couple years that ended 7 years ago. Aaron stopped using alcohol following this diagnosis and was not using it at the time of intake. Although the residual effects of increased alcohol use on cognitive functioning could contribute to or mimic his current clinically significant ADHD symptoms, his ADHD symptoms appeared to be clinically elevated in childhood and thus ruled out this explanation.

Aaron did not receive mental health treatment during childhood, although he stated that *he talked a lot and had difficulty sitting still*. Aaron's academic performance, however, was exceptional despite the early emergence of ADHD symptoms in childhood. For example, although his ADHD symptoms were noticeable to his teachers, following high school Aaron earned a bachelor's and a master's degree. Protective factors that may have supported his academic functioning despite his ADHD symptoms, primarily his IQ, are discussed below. For approximately 3 years, Aaron enrolled in a PhD program. However, he was unable to meet his

responsibilities as he had problems working independently and adhering to a structure that would allow him to focus on writing a dissertation proposal. As a result, he ended his enrollment.

Aaron had worked a number of jobs, which ranged in duration from 3 months to 9 years. The types of jobs Aaron typically held were managerial. He had never been fired from a job but stated that several different employers had commented on his difficulty staying focused and finishing his work. He also stated that his employers noticed that he had problems doing things in a timely manner and not keeping the boss updated. The majority of his employment periods were ended by layoffs of a large number of employees. He also stated that he had to spend an exceedingly large amount of effort on some jobs to perform them adequately, which he attributed to ADHD symptoms. Socially, the primary area of Aaron's functional impairment was in his relationship with his wife. As noted above, Aaron's wife had noticed his disorganization and how it negatively affected their finances and relationship. This had led to a previous separation and was one of Aaron's concerns at intake.

### **13 Assessment: Case Study 2**

At the time of his evaluation at another clinic, Aaron was experiencing attention problems that were negatively affecting his marriage and employment. His psychiatrist had referred him for this evaluation at another clinic to clarify his diagnostic status and to inform treatment options. The ADHDRS (DuPaul et al., 1998) modified for adults was completed by Aaron, his wife, and his brother. The Wechsler Abbreviated Scale of Intelligence (WASI; Psychological Corporation, 1999), the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Hathaway & McKinley, 1989), and a semistructured interview were also administered.

ADHDRS ratings indicated that Aaron had a history of elevated inattentive and hyperactive-impulsive ADHD symptoms per his and his brother's separate reports. According to his brother, Aaron's childhood ADHD symptoms negatively affected his schoolwork and social interactions. For instance, he reported that Aaron had difficulty talking excessively, interrupting others, and not following through on tasks. In terms of current ADHD symptoms, Aaron and his wife independently reported elevated symptom counts on the ADHDRS.<sup>3</sup> Also, both Aaron and his wife rated his current ADHD symptoms as functionally impairing occupationally, socially, educationally, relationally with his wife, and in his management of daily responsibilities (e.g., losing bills that he was supposed to pay and therefore turning in payments late).

Aaron's estimated full-scale IQ score of 125 (superior range) on the WASI may account for his ability to persevere in school. Aaron also admitted that he had difficulty with anxiety and depression over the past 15 years as a result of frequent failures that appeared to be related to his ADHD symptoms. For example, Aaron reported that he often felt *cheated* out of what he could have accomplished and had begun to view himself as *lazy and unmotivated*. Consistent with this report, Aaron's valid MMPI-2 profile indicated that he exhibited a low self-esteem. Clinical scales also indicated that he experienced persistent anxiety and mild depression.

When Aaron presented for treatment at our clinic, he completed additional assessment measures. He completed the ADHDRS (DuPaul et al., 1998) modified for adults, the CAARS (Conners et al., 2000), a developmental questionnaire, the SCID-I (First, Robert, et al., 1997), the Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emory, 1979), and the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988). Axis II disorders were not assessed because he did not exhibit any pathological personality characteristics according to his previous evaluation. Aaron's wife also completed the ADHDRS modified for adults. Aaron reported 8 of

9 inattentive symptoms and 4 of 9 hyperactive-impulsive symptoms in the past 6 months. Similarly, Aaron's wife reported that Aaron exhibited 8 of 9 inattentive symptoms and 5 of 9 hyperactive-impulsive symptoms in the past 6 months. On the CAARS, Aaron endorsed scales in the clinical range for Inattention (97th percentile) and Problems with Self-Concept (96th percentile). He also reported Hyperactivity (82nd percentile) and Impulsivity (89th percentiles) in the at-risk ranges.

Aaron also endorsed symptoms suggestive of major depressive disorder on the SCIDI; however, he failed to meet diagnostic threshold. His report of past and current difficulties with a depressed mood frequently resulting from repeated failures associated with his ADHD symptoms was consistent with his other evaluation. These elevated depressive symptoms were consistent with Aaron's responses on the BDI in the moderate-to-severe range (raw score = 22). Aaron did not approach meeting criteria for any other disorders on the SCID-I. On the BAI, Aaron reported mild anxiety symptoms in the past week (raw score = 13). Overall, Aaron's diagnostic summary included ADHD (predominantly inattentive type) and depressive disorder not otherwise specified. Regarding Aaron's ADHD diagnosis, although he endorsed primarily inattentive symptoms, he also endorsed subclinical levels of hyperactive-impulsive ADHD symptoms that were also considered in treatment.

We also informally assessed Aaron's tangential speech, which was indicated in his previous assessment. That is, we briefly reviewed different verbal domains that could be problematic for Aaron in his everyday interactions. Aaron identified *talking too much and topic content shifting* (i.e., tangential speech). We labeled these behaviors as behaviors that have been problematic in the past and may interfere with therapy.

## **14 Case Conceptualization: Case Study 2**

Similar to the first case study, Aaron's comorbid status was taken into account. We hypothesized that Aaron's depressive features were secondary to his ADHD symptoms and the result of his awareness of his functional impairment. That is, Aaron's ADHD symptoms were established as present since childhood. If someone such as Aaron (a) exhibited problems with attentiveness, hyperactivity, and impulsivity throughout development and (b) these behaviors were accompanied by frequent functional impairment, then it is not surprising to experience depressive thoughts when one notices this persistent trend of failure in various domains.

Based on this conceptualization, Aaron's ADHD symptoms were a primary target for treatment. Although he had experienced improvement with his medication regimen, both Aaron and his psychiatrist felt that he could be making more improvements. Therefore, Aaron appeared to be a promising candidate for the Mastering Your Adult ADHD treatment program. Overall, Aaron stated that he wanted to improve his time management skills, decrease his frustration (that had resulted from repeated failures associated with distractibility and difficulty following directions), and improve his organizational skills.

In addition, based on our assessment of Aaron's verbal behavior, we hypothesized that his tangential speech may be problematic in weekly 50-min sessions and that he may benefit from an explicit attempt to decrease the frequency of this behavior in session. Therefore, we adapted techniques from functional analytic psychotherapy (FAP; Kohlenberg & Tsai, 1991). FAP is a behavior analytic approach to therapy that uses reinforcement and punishment principles to modify problematic in-session behaviors. FAP assumes that (a) most client problems occur in the context of (or a result of) interpersonal problems; (b) the therapist's in-

session contingent, natural responding to the client's behavior as it occurs is the proposed mechanism of change (i.e., therapists elicit client behavior and provide consequences for client behavior); and (c) reinforcement of interpersonal behaviors is more effective if the reinforcer is delivered closer in time and space to behavior. The primary objectives in FAP are to identify clinically relevant behaviors (CRB 1s), to decrease the frequency of CRB 1s, to facilitate the increase of adaptive CRBs that occur during therapy sessions (CRB 2s), and to facilitate the client's interpretation of these improvements (CRB 3s). When CRB 3s occur, the therapist provides a functional interpretation of the clients behavior to facilitate generalization of this behavior. For Aaron, his CRB 1 was tangential verbal behavior. To encourage interpreting improvements in this behavior (i.e., CRB 3s) and to encourage generalizing this behavior, we phrased this goal as not just to decrease tangential speech in session but to discover how Aaron can monitor and modify his tangential speech outside session that creates problems with others outside of the therapy room.

## **15 Course of Treatment and Assessment of Progress: Case Study 2**

Aaron participated in fourteen 50-min treatment sessions over the course of approximately 7 months. Although initially Aaron's attendance was consistent, he began to experience difficulties maintaining scheduled appointments over time. Aaron's wife sometimes participated in therapy, namely, in the latter half of the assessment session and Session 6. During the assessment session, she identified similar problematic behaviors as Aaron did (i.e., difficulty prioritizing, following through on tasks, and seeking employment) and how these behaviors negatively affected their relationship. We also discussed her role during treatment as someone who can provide supportive feedback regarding Aaron's attempts to modify his behavior. Although she admitted to frequently *nagging* Aaron, she was asked to notice the ineffectiveness of this strategy, decrease this *nagging* behavior, and encourage Aaron to increase the use of skills introduced in therapy. During this portion of the assessment session, treatment options and knowledge of ADHD as a disorder in adulthood were also reviewed.

The outline of each session was followed according to the *Mastering Your Adult ADHD* manual as it was with Case Study 1 (e.g., medication adherence review, symptom review, setting an agenda). See Table 1 for an overview of the core CBT modules introduced. Module 1 was completed during the end of the assessment session and the first treatment session. Similar to the first case study, Aaron was prompted to think about the function of his behaviors and to be aware of self-defeating cognitions that may impede therapeutic progress. We also reviewed Aaron's unsuccessful attempts to become organized and the rationale for trying new planning and organizational strategies. For homework, he was asked to purchase a notebook and calendar, write his appointments in his calendar, start a task list, and begin discarding the random pieces of paper he had used to attempt to stay organized in the past. Aaron also received a one-page self-monitoring form to track his fidelity to the homework assignment for this session and throughout the rest of his treatment.<sup>2</sup>

Finally, Aaron's CRB 1 (i.e., tangential speech) occurred frequently in the initial treatment session. This behavior was not discussed until the end of the session so that the frequency of this behavior without intervention could be estimated. On discussing the frequency of this behavior at the conclusion of the session, Aaron admitted to being unaware that he was engaging in this behavior. He was, however, receptive to therapist feedback.

The Organization and Planning module (see Table 1) was conducted during Sessions 2 through 5. Initially Aaron had some difficulty disengaging from previous maladaptive organizational strategies and completing homework assignments in this module. For example, he used a digital calendar system that he admitted was too complicated for him. Therefore, we completed the task list and calendar homework assignments in session. To facilitate use of these techniques in between sessions, we scheduled a time for him to complete these assignments on a daily basis. We also scheduled a time to talk with each other on the telephone to assess his compliance with his assignments. This approach was successful in helping Aaron establish organizational behavior skills. As opposed to Case Study 1, we did not attempt to use a discriminative stimulus (e.g., a cell phone alarm to prompt completing the task list) given that Aaron was still attempting to stop using other techniques that did not improve his organizational behavior (e.g., a personal digital assistant).

Aaron also had difficulty providing overly detailed notes on his task list. In-session exercises were therefore completed with Aaron repeatedly practicing summing up his task and breaking it up into its components. As with the first case study, upon Aaron's engagement in the homework assignments, we differentiated the reinforcing effects of these new techniques into temporal categories to prompt Aaron to respond not just to the short-term contingencies of these planned and organized behaviors but to consider the long-term benefits as well.

In terms of FAP goals, Aaron engaged in tangential speech during these sessions. When he did, he received feedback that this behavior was occurring and was asked to stay on topic. At other times, Aaron exhibited focused speech (i.e., a CRB 2), which was verbally reinforced in session. For example, he began stopping himself at certain points when he began to speak tangentially and identify his CRB 1 (e.g., okay, I'm starting to get off of the topic). We also discussed how Aaron noticed himself speaking tangentially and the positive effect it had in session (e.g., it did not impose time constraints on the session). On exhibiting on-task speech, we discussed how improving this behavior was relevant to his treatment goals. During the final session of this CBT module, Aaron noticed that he did not receive any cues from the therapist that he had engaged in any tangential speech. Aaron's notice of this improved in-session behavior (i.e., a CRB 2) was verbally reinforced. Aaron stated that he was able to stay focused by simply being conscious of this behavior. Aaron also attempted to interpret how this improved behavior positively affected the session and how it could positively affect his interactions with his wife (i.e., CRB 3).

Session 6 was scheduled to be the beginning of the Reducing Distractibility module. However, Aaron was 10 min late for the session, and he had brought his wife to attend the last half of the session. Aaron brought his wife because we discussed including her in Session 7, although he incorrectly entered in the wrong date in his calendar. According to Aaron, the past week had been a setback. Aaron reported that he did not complete any of the assignments, and his week was characterized by frustration, disorganization, and generally a failure to complete most tasks. We framed his behavior as relapsing into old and familiar, but ineffective behavioral routines. Problem-solving techniques were discussed in session and resulted in a plan for Aaron to complete his homework assignments in the coming week. We agreed that Aaron would send the therapist an e-mail at a certain time each day to confirm that he had completed his homework assignments. If this did not occur, then the therapist would call him to problem-solve over the phone so that Aaron could complete his assignment. Aaron's wife attended the latter half of the session. Both expressed

their frustration over Aaron's behavior and the different domains it was negatively affecting. We reviewed techniques introduced up until that point that had been beneficial and how these improvements could be maintained. Also, we discussed realistic goals of behavior change and the gradual and varied trend of improvement (as opposed to a linear trend). Aaron's wife was encouraged to remain supportive and received an overview of techniques introduced in therapy. Aaron and his wife felt that the session concluded on a positive note, and they were both hopeful for change.

Sessions 7 and 8 were modified and did not involve introducing the Reducing Distractibility module because Aaron was 10 to 15 min late for each session. Given that this imposed time constraints on the sessions and Aaron's behavior demonstrated a lack of improvement in planning and organizational behavior, a problem-solving strategy was modeled to help Aaron arrive on time for his sessions. Also, although Aaron had reported successful completion of his behavioral homework assignments, he had been prioritizing the majority of his tasks as urgent. Because of the skewed number of these tasks and the low probability of completing them all, it was not surprising that Aaron was frequently frustrated with his accomplishments at the end of the day (despite the large amount of tasks he completed in relation to the little he completed before therapy). Therefore, we repeated the A-B-C prioritizing technique to help Aaron evenly distribute these tasks.

In addition to problem solving how Aaron could improve on his late arrival at his sessions, we discussed this behavior in FAP terms. This behavior was defined as a CRB 1 because it occurred in and outside therapy, and it negatively affected Aaron's interpersonal relationships. Although his other CRB 1 was improving, this newly defined CRB 1 was becoming increasingly problematic. We outlined revised steps to decrease the likelihood of arriving late for therapy in the future (e.g., setting an alarm to prompt Aaron to begin preparing for his departure, calling the therapist 1 hr before the session to confirm he is on time [otherwise, Aaron would be called by the therapist]). We also discussed the operant principles of behavior and agreed that a session would be canceled if he was 10 min late for a session.

Aaron arrived on time for Session 9. Aaron was verbally reinforced for his timeliness, and we reviewed the techniques that helped him accomplish this goal. Because he also reported continued implementation of organizational and planning skills introduced in previous sessions, the Reducing Distractibility module was introduced. In terms of FAP goals, Aaron also continued to maintain his gains in reducing tangential speech in-session. We discussed how he was able to become more aware of this behavior and what accounted for his improvement (CRB 3). Particularly, he found that being told in-session that he was being tangential had been helpful in monitoring his speech during interactions outside of therapy.

The remaining sessions conducted with Aaron included the remaining Reducing Distractibility, Adaptive Thinking, and Procrastination modules over the course of 4 months because of frequent cancellations by Aaron. These cancellations typically occurred as a result of ineffective planning (e.g., scheduling a visit with his psychiatrist at the same time as our session) or random events (e.g., illness in the family). Because the content of these sessions have already been reviewed above and the majority of these sessions involved review given Aaron's sparse attendance, a short summary is provided below.

Aaron performed quite well with the second session of the Reducing Distractibility module (Session 10). For example, he had managed to decrease the hours per day *surfing* the Internet by using colored adhesive dots and alarms as discriminative stimuli to cue him to

engage in other goal-oriented behavior. In Sessions 11 through 13, cognitive therapy techniques were introduced. Aaron was able to successfully monitor his negative automatic thoughts and identify trends in his thinking errors. Overall, Aaron responded well to cognitive therapy techniques and reported that his depressed mood improved soon afterward.

Despite Aaron's sparse attendance throughout these latter sessions, he was managing to complete his homework as assigned (e.g., completing a prioritized task list each day), he was early for some sessions (which was reinforced by allowing extra time in session), and he indicated on a few occasions that he was *catching myself going off the subject outside of therapy*.

Before Session 14, Aaron unexpectedly called to report that he and his wife had decided to separate and that Aaron would be moving out-of-state immediately to live with relatives. We scheduled one last session prior to his departure and chose the Procrastination module because it combines all the modules from the previous sessions. Overall, Aaron's response to the separation was quite different from the first time they separated. That is, Aaron reported that the first time they separated, he became very depressed and *I just fell apart*. Now, Aaron admitted that he was unhappy with the decision, but his mood was good given the circumstances. His overall affective response was much better than before. He also exhibited more concern about his son and specifics related to moving rather than his mood. Aaron mentioned that he had been applying the cognitive monitoring and thinking error correction techniques, which he felt were helpful. For example, he frequently attempted to correct thinking errors such as *It's my fault and I'm a loser*. Therefore, based on Aaron's report, techniques from the cognitive module may have served a protective role in this recent chain of events. Consistent with the manual, we reviewed which techniques throughout the whole treatment that Aaron felt were effective. We also discussed his use of these skills in moving residences and in seeking employment.

See Figures 3 and 4 for a summary of Aaron's functioning based on his self-report of ADHD, depression, and anxiety symptoms. Figure 3 demonstrates that while Aaron's inattentive symptoms increased toward the conclusion of therapy, the decrease in his hyperactive-impulsive symptoms were maintained. One explanation for this worsening of his inattentive symptoms could be the increased situational demands on Aaron's organizational abilities following his separation. Figure 4 demonstrates that Aaron's depressive and anxious symptoms decreased throughout the course of treatment. Given Aaron's separation from his wife and his history of depression, the decrease in his depressive symptoms was particularly notable. Similar to Jake, providing this feedback was beneficial in visually demonstrating to Aaron areas in which he had improved and areas that he needed to work on. Also note that there were no changes in Aaron's medication regimen at this time.

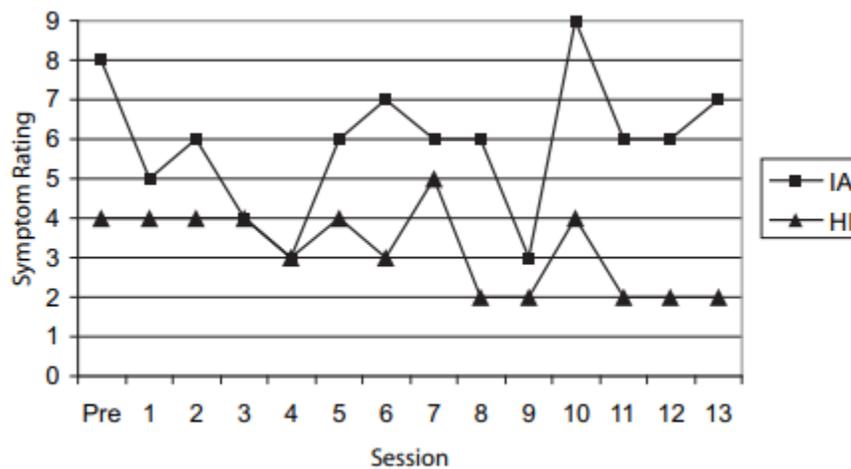
## **16 Complicating Factors: Case Study 2**

One complicating factor of Aaron's treatment could have been medication effectiveness. Throughout treatment, Aaron consulted with his psychiatrist. Nonetheless, perhaps his current medication and dosage had not been maximally effective. Aaron and his psychiatrist however, had previously tried various other ADHD medications and various dosages of Aaron's current medication. More rigorous monitoring of ADHD symptoms via self and other reports when these dosages or medications were varied prior to CBT treatment may have been beneficial. In addition, the separation between Aaron and his wife was unexpected given Aaron's feedback

leading up to that event. Perhaps additional situational factors at home may have made treatment compliance more difficult and could have been dealt with more effectively with marital therapy techniques.

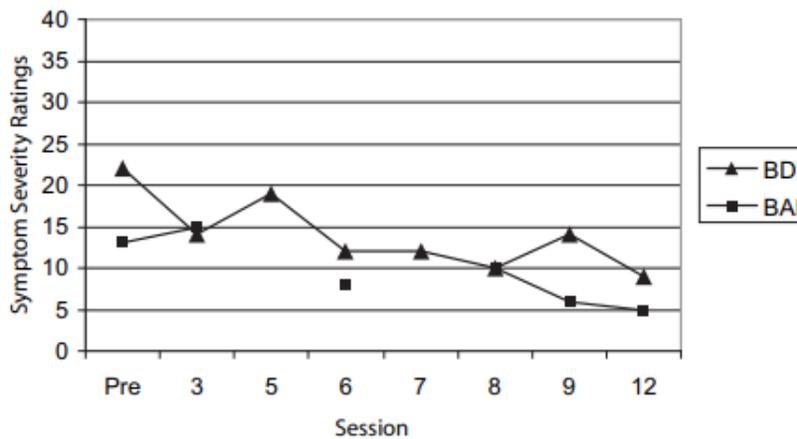
A final complication in Aaron’s treatment was attendance. Early on, Aaron attended most sessions on a weekly basis. However, toward the conclusion of therapy, he would attend therapy approximately once per month. Based on our monitoring of Aaron’s ADHD, depressive, and anxious symptoms, he was experiencing improvement in these symptoms just as his attendance began to become sparse. One explanation could be that Aaron began to experience the immediate benefits of therapy and, in response to this short-term consequence, felt that he no longer needed such a large dose of therapy. This would be characteristic of impulsive decision making in which the delayed, long-term contingencies are discounted in exchange for being over responsive to the immediate short-term benefits. However, this is just one hypothesis. Regardless, attendance was likely a complicating factor in Aaron’s case that may have negatively affected his progress.

Figure 3. A summary of ADHD symptom endorsements for Case Study 2



Note: IA = Inattentive ADHD symptoms; HI = Hyperactive-Impulsive ADHD symptoms.

Figure 4. A summary of depressive and anxiety symptoms for Case Study 2



Note: BAI = Beck Anxiety Inventory scores; BDI = Beck Inventory scores

## 17 Follow-Up: Case Study 2

Given Aaron's move out-of-state, a follow-up relapse prevention session was not completed. However, about 1 month after his move, Aaron called to report that he had continuously used the cognitive therapy techniques in response to any depressive thoughts regarding the separation. Aaron himself was surprised at how well he had maintained a *functional mood* and his composure throughout the entire ordeal. Consistent with our hypothesis, Aaron reported that the cognitive therapy module may have played a preventive role. He also reported that he was applying organizational and distractibility reduction techniques to coordinate the shared custody of his son and to seek employment. Regarding the latter, he reported that he had managed to send out some resumes to employers and was using prioritizing and filing techniques introduced in therapy.

## 18 Treatment Implications of Case Studies 1 and 2

The current case studies involved implementing the Mastering Your Adult ADHD (Safren, Perlman, et al., 2005) treatment program to two adults diagnosed with ADHD in individual therapy settings. One implication of these two case studies is that CBT can be an effective approach for medicated adults with ADHD. Both clients learned behavioral techniques and cognitive strategies to cope with their primary ADHD symptoms and secondary complicating factors. A data-based monitoring approach indicated that symptoms associated with hyperactivity-impulsivity, depression, and anxiety improved for both clients. Inattentive symptoms improved for Jake but appeared to become more noticeable to Aaron later on in treatment. Of course, given the nature of case studies, it is difficult to conclusively attribute outcome to treatment. However, these conclusions are strengthened by our data-based monitoring approach and consistent report of both clients applying these CBT techniques. Whereas Jake saw improved behavior in areas such as academic functioning and social functioning, Aaron saw improvement in terms of how he maintained his behavior during his separation.

Another implication from these two case studies is that although ADHD does not result from simple environmental factors or cognitive distortions (Barkley, 2006d; Nigg, 2006), the developmental course of this disorder into adulthood results in frequent failures and comorbid complications that need to be addressed in addition to ADHD symptoms. For Jake, his self-injurious behavior was a focus, whereas Aaron's previous depressive episodes were considered. In both cases, these comorbid complicating factors were likely developmental consequences of ADHD symptoms. As illustrated by these cases, the treatment of adults with ADHD involves not just addressing this primary diagnosis, but also secondary symptoms that develop as poor coping strategies (e.g., self-injury for Jake) or as comorbid diagnoses (e.g., depression for Aaron). As a result of this developmental course, multimodal treatment is a promising avenue for future research of adults diagnosed with ADHD. Also, this developmental process of ADHD provides a rationale for the co-occurrence of different disorders or symptom clusters. Consideration of this process should guide treatment recommendations as opposed to treating comorbid diagnoses or symptom clusters as separate from one another. These implications also highlight the importance of assessment and accurate diagnosis of ADHD prior to treatment (Anastopoulos & Shelton, 2001).

Another implication of these case studies involves the cognitive portion of CBT for adults with ADHD. The manualized approach we implemented includes a cognitive therapy module that was primarily concerned with depressive and anxious cognitions. This is a necessary component of treatment given the high comorbidity between ADHD and these internalizing features (Barkley, 2006c); however, cognitions that appeared to be characteristic of ADHD (e.g., I perform best when I wait until the last minute) may complement this focus and be added to the manualized treatment. Indeed, we discovered that one of our case studies in particular exhibited this type of cognitive distortion. To our knowledge, there is no research assessing cognitive distortion profiles among adults with ADHD. Such research would inform this treatment implication.

Modifications of the manualized CBT approach to meet the individual needs of adults diagnosed with ADHD were also important in these two case studies. In one case, techniques from Linehan's (1993) dialectical behavior therapy were adapted to address problematic self-injurious behaviors associated with topographical borderline personality disorder features. In the second case, techniques from Kohlenberg and Tsai's (1991) FAP decreased a problematic in-session behavior (i.e., tangential speech) that would have interfered with introducing CBT skills. This is consistent with other researchers who have modified other treatment approaches for adults with ADHD (e.g., Hesslinger et al., 2002).

## **19 Recommendations to Clinicians and Students**

Careful assessment of adults presenting with ADHD symptoms prior to implementing treatment is critical. This assessment should consider alternative explanations, reasons a client is seeking treatment at the present time, collateral reporters, and how comorbid features have emerged along with, prior to, or following ADHD symptoms. In the current examples, comorbid features that emerged following ADHD symptoms in childhood were important in treatment conceptualization. As mentioned above, a client's reason for seeking treatment at a particular point in time is also important to consider prior to initiating treatment. For both case studies, they presented for treatment to address immediate concerns (i.e., primarily academic concerns for Jake, and occupational and marital concerns for Aaron). However, how these immediate concerns fit within a developmental context, including the development of comorbid features, were important to consider as well. Simply taking a coaching approach would likely have addressed these immediate issues but may have potentially overlooked deficient skills in organization, distractibility, and coping with maladaptive cognitions. Also, psychopharmacological treatments were implemented in these two cases as well. As a recommendation, close interaction with prescribing physicians and psychiatrists may improve treatment outcome.

An additional recommendation based on the current case studies involves the effect of ADHD symptoms on interpersonal relationships. Specifically, clinicians should consider how ADHD symptoms in adulthood affect significant others and the quality of these interpersonal interactions. In one of our case studies, poor marital functioning was one of the primary reasons for seeking treatment. As treatment progressed, the client's persistent pattern of poor attentiveness and disorganization associated with ADHD was identified as the ultimate reason for ending the relationship. Clinicians should consider not just deficits and poor adaptive coping strategies associated with adult ADHD at the individual level. They should also consider the effect of ADHD symptoms on significant others and make this dyad a more explicit component

of treatment. Also, such consideration may not just serve a preventive role in treatment (e.g., preventing a divorce), but may also provide significant others with adaptive coping skills that help them interact more effectively with their adult ADHD counterparts.

Finally, a thorough functional and diagnostic assessment is important, as well as the selection of an intervention based on empirically supported treatments or in this case what we consider an emerging empirically supported treatment. Such continued empirically guided development and refinement of these approaches (e.g., component analysis of CBT, adapting other therapeutic approaches such as dialectical behavior therapy) are central to treating ADHD symptoms and complicating comorbid conditions among adults. In addition, although an individual therapy framework is discussed here, applying cognitive behavioral techniques in a group setting for adults with ADHD appears to be a promising avenue for future research as well (i.e., Solanto, Marks, Mitchell, Wasserstein, & Kofman, in press). In sum, the treatment of adults diagnosed with ADHD is a field that requires more randomized controlled outcome studies. The current case studies are two examples that illustrate the complexity that is involved in treating these adults and the promising effects of a cognitive-behavioral intervention.

## Notes

1. The name and all identifying information for both clients in this case study report have been changed to protect the clients' identity.
2. This self-monitoring form is not part of the original Mastering Your Adult ADHD treatment but is available on request from the first author. This form was provided to both case study clients after each session to remind them to track their fidelity to the homework assignments.
3. Aaron's report at another clinic did not indicate the number of symptom counts for any of the raters.

## References

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Anastopoulos, A. D., & Shelton, T. L. (2001). *Assessing attention-deficit/hyperactivity disorder*. New York: Kluwer Academic/Plenum.
- Barkley, R. A. (1997). *ADHD and the nature of self control*. New York: Guilford.
- Barkley, R. A. (2006a). Primary symptoms, diagnostic criteria, prevalence, and gender differences. In R. A. Barkley (Ed.), *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (3rd ed., pp. 76-121). New York: Guilford.
- Barkley, R. A. (2006b). ADHD in adults: Developmental course and outcome of children with ADHD, and ADHD in clinic-referred adults. In R. A. Barkley (Ed.), *Attention-Deficit Hyperactivity Disorder: A handbook for diagnosis and treatment* (3rd ed., pp. 248-298). New York: Guilford.
- Barkley, R. A. (2006c). Comorbid disorders, social and family adjustment, and subtyping. In R. A. Barkley (Ed.), *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (3rd ed., pp. 184- 218). New York: Guilford.

- Barkley, R. A. (2006d). Etiologies. In R. A. Barkley (Ed.), *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (3rd ed., pp. 219-247). New York: Guilford.
- Barkley, R. A., Fischer, M., Smallish, L., & Fletcher, K. (2002). The persistence of attention-deficit/hyperactivity disorder into young adulthood as a function of reporting source and definition of disorder. *Journal of Abnormal Psychology*, 111, 279-289.
- Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Clinical and Consulting Psychology*, 56, 893-897.
- Beck, A. T., Rush, A. J., Shaw, B. F., & Emory, G. (1979). *Cognitive therapy of depression*. New York: Guilford.
- Conners, C. K., Erhardt, D., & Sparrow, E. (2000). *Conners Adult ADHD Rating Scales*. North Tonawanda, NY: Multi-Health Systems.
- Conners, C. K., & Multi-Health Systems Staff. (2002). *Manual for the Conners' Continuous Performance Test II*. Toronto, Canada: Multi-Health Systems.
- Derogatis, L. R. (1975). *Symptom Checklist-90-R*. Bloomington, MN: Pearson Assessments.
- DuPaul, G. J., Power, T. J., Anastopoulos, A. D., & Reid, R. (1998). *ADHD Rating Scale-IV: Checklists, norms, and clinical interpretation*. New York: Guilford.
- Faraone, S. V., Biederman, J., Spencer, T., Wilens, T., Seidman, L. J., Mick, E., et al. (2000). Attention deficit/hyperactivity disorder in adults: An overview. *Biological Psychiatry*, 48, 9-20.
- First, M. B., Gibbon, M., Spitzer, R. L., Williams, J. B. W., & Benjamin, L. S. (1997). *Structured clinical interview for DSM-IV Axis II personality disorders (SCID-II)*. Washington, DC: American Psychiatric Press.
- First, M. B., Robert, L., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1997). *Structured clinical interview for DSM-IV Axis I personality disorders (SCID-I)*. Washington, DC: American Psychiatric Press.
- Hathaway, S. R., & McKinley, J. C. (1989). *Minnesota Multiphasic Personality Inventory-2 (MMPI-2): Manual for administration and scoring*. Minneapolis: University of Minnesota Press.
- Hesslinger, B., van Elst, L. T., Nyberg, E., Dykier, P., Richter, H., Berner, M., et al. (2002). Psychotherapy of attention deficit hyperactivity disorder in adults: A pilot study using a structured skills training program. *European Archives of Psychiatry and Clinical Neuroscience*, 252, 117-184.
- Kohlenberg, R. J., & Tsai, M. (1991). *Functional analytic psychotherapy: Creating intense and curative therapeutic relationships*. New York: Plenum.
- Linehan, M. M. (1993). *Skills training manual for treating borderline personality disorder*. New York: Guilford.
- Mannuzza, S., & Klein, R. G. (1999). Adolescent and adult outcomes in attention-deficit/hyperactivity disorder. In H. C. Quay & A. E. Hogan (Eds.), *Handbook of disruptive behavior disorders* (pp. 279-294). New York: Kluwer/Plenum.
- McDermott, S. P. (2000). Cognitive therapy for adults with attention-deficit/hyperactivity disorder. In T. E. Brown (Ed.), *Attention deficit disorders and comorbidities in children, adolescents, and adults* (pp. 569-606). Washington, DC: American Psychiatric.

- Murphy, K. R. (2006). Psychological counseling of adults with ADHD. In R. A. Barkley (Ed.), *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (3rd ed., pp. 692-703). New York: Guilford.
- National Institutes of Mental Health. (1997). *Diagnostic Interview Schedule for Children-IV (DISC-IV)*. New York: Columbia University.
- Nigg, J. T. (2006). *What causes ADHD? Understanding what goes wrong and why*. New York: Guilford.
- Prince, J. B., Wilens, T. E., Spencer, T. J., & Biederman, J. (2006). Pharmacology of ADHD in adults. In R. A. Barkley (Ed.), *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (3rd ed., pp. 704-736). New York: Guilford.
- Psychological Corporation. (1999). *Wechsler abbreviated scale of intelligence manual*. San Antonio, TX: Author.
- Ramsay, J. R. (2002). A cognitive therapy approach for treating chronic procrastination and avoidance: Behavioral activation interventions. *Journal of Group Psychotherapy, Psychodrama, and Sociometry*, 55, 79-92.
- Ramsay, J. R., & Rostain, A. L. (2003). A cognitive therapy approach for adult attention deficit/hyperactivity disorder. *Journal of Cognitive Psychotherapy: An International Quarterly*, 17, 319-334.
- Ramsay, J. R., & Rostain, A. L. (2005a). Adapting psychotherapy to meet the needs of adults with attentiondeficit/hyperactivity disorder. *Psychotherapy: Theory, Research, Practice, Training*, 42, 72-84.
- Ramsay, J. R., & Rostain, A. L. (2005b). Cognitive therapy for adult ADHD. In L. VandeCreek (Ed.), *Innovations in clinical practice: Focus on adults* (pp. 53-63). Sarasota, FL: Professional Resource Press/Professional Resource Exchange.
- Ramsay, J. R., & Rostain, A. L. (2005c). Girl, repeatedly interrupted: The case of a young adult woman with ADHD. *Clinical Case Studies*, 4, 329-346.
- Rostain, A. L., & Ramsay, J. R. (2006). A combined treatment approach for adults with ADHD—Results of an open study of 43 patients. *Journal of Attention Disorders*, 10, 150-159.
- Safren, S. A., Otto, M. W., Sprich, S., Winett, C. L., Wilens, T. E., & Biederman, J. (2005). Cognitive-behavioral therapy for ADHD in medication-treated adults with continued symptoms. *Behaviour Research and Therapy*, 43, 831-842.
- Safren, S. A., Perlman, C. A., Sprich, S., & Otto, M. W. (2005). *Mastering your adult ADHD: A cognitive behavioral treatment program*. New York: Oxford University Press.
- Safren, S. A., Sprich, S., Chulvick, S., & Otto, M. W. (2004). Psychosocial treatments for adults with attentiondeficit/hyperactivity disorder. *Psychiatric Clinics of North America*, 27, 349-360.
- Shekim, W., Asarnow, R. F., Hess, E., Zaucha, K., & Wheeler, N. (1990). An evaluation of attention-deficit disorder—residual type. *Comprehensive Psychiatry*, 31, 416-425.
- Solanto, M. V., Marks, D. J., Mitchell, K. J., Wasserstein, J., & Kofman, M. D. (in press). Development of a new psychosocial treatment for adult ADHD. *Journal of Attention Disorders*.
- Stevenson, C. S., Whitmont, S., Bornholt, L., Livesay, D., & Stevenson, R. J. (2002). A cognitive remediation programme for adults with attention deficit hyperactivity disorder. *Australian and New Zealand Journal of Psychiatry*, 36, 610-616.

- Wechsler, D. (1997). Wechsler Adult Intelligence Scale—Third edition. San Antonio, TX: The Psychological Corporation.
- Weiss, G., & Hechtman, L. (1993). Hyperactive children grow up. New York: Guilford.
- Wilens, T. E., Biederman, J., & Spencer, T. J. (2002). Attention deficit/hyperactivity disorder across the lifespan. *Annual Review of Medicine*, 53, 113-131.
- Wilens, T. E., McDermott, S. P., Biederman, J., Abrantes, A., Haheys, A., & Spencer, T. J. (1999). Cognitive therapy in the treatment of adults with ADHD: A systematic chart review of 26 cases. *Journal of Cognitive Psychotherapy: An International Quarterly*, 13, 215-226.
- Woodcock, R. W., McGrew, K., & Mather, N. (2001). Woodcock-Johnson III Tests of Achievement. Riverside, CA: Riverside Publishing.
- Young, S. (2002). A model of psychotherapy for adults with ADHD. In S. Goldstein & A. Teeter Ellison (Eds.), *Clinicians' guide to adult ADHD: Assessment and intervention* (pp. 147-163). New York: Academic Press.

**John T. Mitchell**, MA, earned his BS from the University of North Carolina at Charlotte and his MA from the University of North Carolina at Greensboro (UNCG). He is currently a doctoral candidate in clinical psychology at UNCG and is completing a predoctoral internship at Duke University Medical Center. His research interests include impulsivity and appetitive motivation, ADHD in adulthood, and issues related to comorbidity.

**Rosemary O. Nelson-Gray**, PhD, is a professor of psychology at the University of North Carolina at Greensboro and also served as director of clinical training for many years. She earned her PhD in clinical psychology at the State University of New York at Stony Brook in 1972, after studying under Hans Eysenck in London on a Fulbright Scholarship. She has published numerous empirical and theoretical articles, many book chapters, and four books on the topics of behavioral assessment and adult psychopathology.

**Arthur D. Anastopoulos**, PhD, received his PhD in clinical psychology from Purdue University. He is currently a professor in the Department of Psychology at the University of North Carolina at Greensboro, where he directs an ADHD clinic for children, adolescents, and adults.