ADHD in Emerging Adults Attending College

A. D. Anastopoulos et al., *CBT for College Students with ADHD*,
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Attention-Deficit Hyperactivity Disorder (ADHD; American Psychiatric Association [APA], 2013) is a mental health condition characterized by developmentally deviant levels of inattention, impulsivity, and hyperactivity that first arise in childhood, persist across the life span, and cause significant impairment in many domains of daily life functioning. Although much has been written about the impact of ADHD on young children, adolescents, and adults (Barkley, 2015), relatively less attention has been directed to its clinical presentation among individuals 18 to 25-years of age, transitioning through the developmental period known as emerging adulthood (Arnett, 2007). Recently, however, there has been a surge of research and clinical interest in this subgroup of the ADHD population, primarily focused on individuals attending college (Green & Rabiner, 2012; Prevatt, 2016; Weyandt & DuPaul, 2012).

Because up-to-date knowledge of ADHD is one of the keys to successful clinical management of this disorder, this chapter begins with an overview of ADHD, after which its clinical presentation, assessment issues, and co-occurring conditions are discussed. This is followed by a review of published research studies that have examined the therapeutic impact of various treatment approaches for college students with ADHD. The remainder of this chapter focuses on ACCESS – Accessing Campus Connections and Empowering Student Success - addressing our rationale for its development, the iterative steps taken to pilot test and refine it, a detailed description of the program's major treatment components, and a brief summary of research findings that our research team has generated attesting to its efficacy.

ADHD Overview

ADHD is a neurodevelopmental disorder with symptoms first presenting in childhood (APA, 2013). The two major symptom categories, inattention and hyperactivity-impulsivity, include behaviors such as forgetfulness, trouble sustaining attention,

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difficulties with organization, fidgeting, talking excessively, and interrupting others. Although anyone may display these behaviors at times, individuals with ADHD do so much more frequently, to a degree that exceeds what might reasonably be expected relative to those of the same age and gender (APA, 2013). The presence of ADHD symptoms reflects an overarching, brain-based deficit in the ability to self-regulate, leading to a host of problems in everyday life (Barkley, 2015). Commonly, individuals with ADHD also experience problems with executive functioning, which involves the ability to plan, organize and monitor one's own behavior in order to meet goals (Barkley & Murphy, 2011; see Solanto, 2015 for an in-depth discussion of this topic).

Epidemiology

Prevalence estimates suggest that from 3.5% to 7% of children meet criteria for ADHD (Polanczyk, Salum, Sugaya, Caye, & Rohde, 2015; Thomas, Sanders, Doust, Beller, & Glasziou, 2015; Willcutt, 2012). An estimated 65% of children and adolescents with ADHD continue to meet full diagnostic criteria for ADHD in adulthood (Barkley, Murphy, & Fischer, 2008), albeit at slightly lower prevalence rates (2.8–5%; Fayyad et al., 2017; Kessler et al., 2006; Matte et al., 2015). Consistent with these findings, prevalence estimates for ADHD among college students range from 5–8% (Eagan et al., 2014; Wolf, Simkowitz, & Carlson, 2009). Individuals with ADHD also represent a substantial percentage of the students requesting disability accommodations on college campuses (DuPaul, Weyandt, O'Dell, & Varejao, 2009).

Functional Impairment

The impairment that ADHD can cause is a serious matter, both to the student and to institutions concerned with graduation rates and retention issues. Compared to their peers, college students with ADHD demonstrate significantly lower grade point averages (GPA; DuPaul et al., 2018; Gormley, DuPaul, Weyandt, & Anastopoulos, 2016), are more likely to withdraw from courses (DuPaul et al., 2018), and are at increased risk for dropping out of college (Barkley et al., 2008; DuPaul et al., 2018; Hechtman, 2017). Even when students with ADHD remain in college, it is often the case that they take longer to complete their degrees compared to college students without ADHD (Hechtman, 2017). Moreover, the difficulties experienced by college students with ADHD are not limited to academics. Of additional clinical significance is the fact that college students with ADHD are at increased risk for displaying co-occurring mental health problems, including depression and anxiety disorders (Anastopoulos et al., 2018a), as well as histories of suicidal ideation and attempts (Eddy, Eadeh, Breaux, & Langberg, 2019). Students with higher levels of

ADHD symptoms also report more problems in their relationships with others (Sacchetti, & Lefler, 2017), such as trouble handling conflicts (McKee, 2017) and poor relationship quality (Bruner, Kuryluk, & Whitton, 2015). Deficits in the ability to regulate emotions occur at higher rates among children and adults with ADHD and are associated with more psychosocial difficulties in this group (Anastopoulos et al., 2011; Surman et al., 2013). Although rates of substance use are high within the general college student population (O'Malley & Johnston, 2002), college students with ADHD are even more likely than peers to engage in dangerous or problematic patterns of substance use (Baker, Prevatt, & Proctor, 2012; Rooney, Chronis-Tuscano, & Yoon, 2012). Given such challenges, it should come as no surprise that college students with ADHD also report an overall lower quality of life than their peers (Pinho, Manz, DuPaul, Anastopoulos, & Weyandt, 2019).

Conceptual Understanding

The fact that deficits in self-regulation are inherent in ADHD helps to explain why emerging adults with this condition are particularly prone to struggle in comparison with their college peers (Fleming & McMahon, 2012). This explanation stems in part from a consideration of a "perfect storm" of life circumstances that converge during this developmental period (Anastopoulos & King, 2015). For any individual, enrollment in college places increased demands for self-regulating a much wider range of responsibilities than was the case during high school, often encompassing academic, personal, social, health, and financial matters. For example, students arriving on a college campus for their first semester are expected to attend classes on time, successfully manage and prioritize the multiple academic assignments of each class, while at the same time also managing their money, doing laundry, taking charge of their meals, and making new friendships. For many if not most college students, this is the first time they have taken on this amount of responsibility without immediately available support from parents, and this adjustment can be quite challenging. For students with ADHD, this developmental challenge is even greater due to a diminished capacity for self-regulation that is inherent in having ADHD. Further complicating matters is that, as these demands for self-regulation increase, support from parents, academic accommodations, and other types of ADHD treatments (e.g., stimulant medication therapy) are often discontinued.

Summary

Even though many students with ADHD are successful enough during high school to be accepted into college, they are at increased risk for experiencing significant educational and psychosocial difficulties throughout their college years. The mismatch that exists between their diminished capacity for self-regulation and the

increased demands for self-regulation that arise during college sets the stage for these difficulties to occur. As parental support and other ADHD treatments are withdrawn, such problems intensify. Because large numbers of individuals with ADHD are currently attending college and these enrollments are continuing to grow (Wolf et al., 2009), there is much need for developing evidence-based interventions for this population.

Assessment Issues

Diagnosing ADHD

Although it may not be necessary for professionals providing treatment services to be responsible for conducting the initial assessment documenting the presence of ADHD, it nevertheless is important for them to be familiar with the process. Being aware of the assessment process allows them to share this information with students under their care, thereby helping them become more informed consumers of ADHD assessment services.

A "gold-standard" assessment for an adult with ADHD includes information gathered using multiple methods, from multiple informants (see Ramsay, 2015 for a thorough discussion of assessment of ADHD in adults). Clinicians conducting an assessment should aim to gather data on ADHD symptoms, co-occurring conditions, and functional impairment using clinical interviews, rating scales, and available records, such as prior evaluation reports. As much as possible, clinicians should also gather information from other informants, such as parents, significant others or even roommates, as the combination of information gathered via self-report and other-report has been shown to optimize the ability to accurately detect ADHD and avoid false positive diagnoses (Sibley et al., 2012).

The amount and type of clinical assessment data needs to be sufficient to thoroughly and accurately address the five major criteria for diagnosing ADHD that are listed in the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5; APA, 2013). An especially important criterion is whether there is current impairment in functioning associated with ADHD symptoms. DSM-5 also requires the frequent presence of at least 5 out of 9 inattention symptoms and/or 5 out of 9 hyperactive-impulsive symptoms, which deviate significantly from developmental expectations. Although it is not uncommon to use frequency counts to identify ADHD, research findings have clearly indicated that it is essential to assess for *both* impairment and symptoms, because the presence of one does not necessarily guarantee the presence of the other (DuPaul, Reid, Anastopoulos, & Power, 2014; Gathje, Lewandowski, & Gordon, 2008; Gordon et al., 2006). An equally important DSM-5 requirement is that the presence of other mental health and medical conditions must be ruled out, before a diagnosis of ADHD can be established. Thus, information about other conditions that might better account for observed impairments should be routinely collected. To establish a formal diagnosis, DSM-5 also

requires clear evidence that ADHD symptoms occur in 2 or more settings and that the onset of these symptoms first appeared prior to 12-years of age.

A commonly occurring assessment challenge arises when two or more mental health conditions are suspected of being present. To help make a differential diagnosis, it is important to consider the age at which symptoms of ADHD and the other conditions initially appeared. While ADHD symptoms typically present for the first time in childhood, the onset of depression and anxiety disorders, for example, generally occurs during adolescence (Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012). Thus, by examining the timeline for when ADHD and co-occurring disorders first arise, it becomes possible to get a clearer diagnostic picture. For example, in situations where there is compelling evidence that ADHD occurred years before the onset of clinically significant depression or anxiety issues, that would bolster the evidence in favor of establishing an ADHD diagnosis. In addition to timeline issues, considering whether symptoms are episodic or chronic can be helpful in making a differential diagnosis. To this point, in contrast with symptoms of ADHD that are chronic, symptoms of depression are most prevalent and impairing during distinct depressive episodes. Thus, for a college student who has difficulty concentrating only during periods of depression, one would be disinclined to attribute these symptoms to ADHD. Conversely, if concentration problems exist whether depression is present or not, this would be evidence pointing towards a possible ADHD diagnosis.

Co-occurring Conditions

After determining that other mental health conditions do not better account for the presence of ADHD symptoms and impairments, it then becomes necessary to consider whether other psychiatric disorders may be present in addition to ADHD. In combination with ADHD, co-occurring conditions can intensify the overall severity of an individual's psychosocial difficulties and therefore should also be addressed as part of an overall clinical management plan. Other mental health concerns commonly co-occur with ADHD across the life span (Pliszka, 2015) and emerging adulthood is no exception. In a recent study of first year college students, 55% of those with ADHD were also diagnosed with another mental health condition, most often Major Depressive Disorder or Generalized Anxiety Disorder (Anastopoulos et al., 2018a). Accordingly, comprehensive assessment of ADHD should routinely include an evaluation of co-occurring conditions.

Additional Assessment Considerations

College students with ADHD represent a unique group, due to their age and the distinctive aspects of the college environment. As part of the transition to college, students often move out of their parents' home for the first time. As a result, they

have less access to the major sources of support typically utilized to be successful in high school. College students must also balance long-term planning about careers, choosing a major, and meeting course requirements with day- to-day responsibilities. Of additional significance is that college students typically have irregular schedules (e.g., classes on some days but not on others, classes at different times each day) and varying workloads (e.g., light at the beginning and heavy at the end of the semester). This irregularity is particularly challenging in the presence of ADHD, as it requires students to adjust to a changing daily routine and interferes with coping techniques used to manage symptoms, such as consistent routines. Thus, the college environment can serve to exacerbate, or make it more difficult to manage, ADHD symptoms. Sometimes, ADHD symptoms that were present but subclinical during adolescence, move into the clinical range in college, due in part to the nature of the environment. For this reason, it is not uncommon for ADHD to be diagnosed for the first time during college.

Clinicians assessing ADHD in college students should also bear in mind that the assessment of this population relies primarily on information provided by the students themselves. This represents a change from the assessment process typically used to diagnose ADHD in childhood or adolescence, which relies primarily on information provided by others (e.g., parents, teachers). This shift in emphasis from an assessment approach that relies on other report to one that instead relies on self-report can also help explain why some individuals with ADHD come to clinical attention for the first time as young adults. In childhood and adolescence, parents and teachers initiate referrals for ADHD assessments when the behaviors displayed by a child are outwardly observable and sufficiently disruptive to the environment. In adulthood, individuals may seek out assessments and treatment due to concerns about ADHD symptoms that are primarily internal and harder for others to observe, such as restlessness and distractibility.

Another important assessment issue is the need for having historical information that can accurately document the onset, course, and associated impairments of ADHD from childhood to the present. Emerging adults are often not reliable reporters of this type of information, thereby highlighting the importance of obtaining reports from parents. Although most college students with ADHD are comfortable consenting to obtaining parental input, there can be many obstacles to this happening. For example, college students with ADHD frequently live away from home; thus, it may be difficult to collect rating scale information from parents. For a variety of reasons, some college students may not be willing to include their parents in the assessment process, or their parents may no longer be available. In the absence of parental input, getting information from an older sibling or someone else who knew the student as a child can sometimes suffice. It can also be very helpful to obtain information from a spouse, partner, close friend, or roommate to get a perspective on the individual's current functioning, in addition to that available from the individual's self-report.

Summary

Accurate identification of ADHD and its co-occurring features is an important first step that guides the selection and implementation of appropriate evidence-based treatments. Multi-method, multi-informant assessments are well suited to gathering the types of clinical evaluation data that allow for a determination of whether all DSM-5 criteria for ADHD have been met. Due to their age and the distinctive aspects of a college environment, emerging adults pose unique assessment challenges that need to be taken into consideration to ensure diagnostic accuracy.

Treatment

Disability Accommodations and Pharmacotherapy

On many college campuses, disability services are the primary mechanism by which students with ADHD receive assistance, most often in the form of extended time on tests and various other accommodations (Wolf et al., 2009). Unfortunately, many college students choose not to use such services (Fleming & McMahon, 2012). Of additional concern is that when used alone, accommodations appear to produce minimal long-term benefits (e.g., Lewandowski, Gathje, Lovett, & Gordon, 2013; Miller, Lewandowski, & Antshel, 2015; Pariseau, Fabiano, Massetti, Hart, & Pelham, 2010) and do not address co-occurring difficulties, such as executive functioning deficits (Antshel, Hier, & Barkley, 2014; Dvorsky & Langberg, 2014) and emotional distress (Anastopoulos et al., 2018a).

Although stimulant medications and other forms of pharmacotherapy have been shown to be effective and relatively safe for children and adults (Barkley, 2015; Faraone & Glatt, 2010), their use with emerging adults attending college has been understudied. To date, only one well-controlled stimulant medication trial has focused specifically on college students (DuPaul et al., 2012). The results of this study demonstrated that lisdexamfetamine dimesylate (e.g., Vyvanse) significantly reduced ADHD symptoms and improved executive functioning. Despite the promising nature of these findings, additional medication trials are necessary to address the efficacy and safety of these medications, as well as concerns regarding the risk for misuse, abuse, and diversion on college campuses (Benson, Flory, Humphreys, & Lee, 2015; Kaye & Darke, 2012; Rabiner et al., 2009). Future clinical trial researchers should also take into consideration the unique aspects of a college environment and how that might impact the way in which medications are prescribed. To this point, although most prescribers generally advise a daily medication regimen with medication administered at the same time each day, this schedule of treatment may be far less realistic for a college student who may not have classes every day, whose classes may start at different times each day, and who experiences fluctuating academic demands at different times in the semester (e.g., final exam week). In addition,

college students often face challenges with getting medication refilled and dosages changed as their primary care physician may be in a location far from campus. In sum, there are many unanswered questions about best practices for the use and prescription of stimulants and other medications for college students with ADHD.

Psychosocial Interventions

Although disability accommodations and pharmacotherapy have historically been the main forms of treatment available to college students with ADHD, their use with this population has not been well established empirically. Of further concern is that these treatments do not adequately address the broad range of co-occurring features and functional impairments displayed by college students with this condition. Such limitations make clear the need for additional treatment options.

In response to this situation, a small but growing number of studies has recently investigated the use of psychosocial interventions to treat ADHD in college students (see He & Antshel, 2016 for a review). One line of research has investigated a coaching approach, utilizing goal setting, organization, and time management (Field, Parker, Sawilowsky, & Rolands, 2013; Prevatt & Yelland, 2015; Swartz, Prevatt, & Proctor, 2005). Other research groups have tested interventions using cognitive-behavioral therapy (CBT; Eddy, Canu, Broman-Fulks, & Michael, 2015; LaCount, Hartung, Shelton, Clapp, & Clapp, 2015), dialectical behavior therapy (DBT, Fleming, McMahon, Moran, Peterson, & Dreessen, 2015), mindfulness-based cognitive therapy (Gu, Xu, & Zhu, 2018), self-monitoring (Scheithauer & Kelley, 2017), and organization, time management, and planning (OTMP) skills training (LaCount, Hartung, Shelton, & Stevens, 2018).

Findings from these initial psychosocial investigations revealed significant improvements in primary ADHD symptoms, most often related to reduced inattentiveness (Eddy et al. 2015; Gu et al., 2018; Fleming et al., 2015; LaCount et al., 2015; LaCount et al., 2018). Improvements in self-reported executive functioning have also been noted (Fleming et al., 2015). Although not routinely assessed, gains in self-reported learning strategies and educational functioning have been found (LaCount et al., 2015; LaCount et al., 2018; Prevatt & Yelland, 2015). Notably, corresponding increases in GPA have not been reliably demonstrated (Fleming et al., 2015; Gu et al., 2018; LaCount et al., 2018). Likewise, reduced levels of depression and anxiety symptoms have been reported in some (Gu et al., 2018) but not all studies (Fleming et al., 2015).

Critique of Psychosocial Treatment Literature

Results from this emerging literature offer much promise for the role that psychosocial interventions may ultimately play in the overall clinical management of college students with ADHD. At the same time, however, it is necessary to acknowledge

that findings have been inconsistent across extant studies, which limits conclusions about efficacy. Because programmatic research in this area has been lacking, many of these inconsistent findings are likely attributable to methodological and conceptual differences across studies (He & Antshel, 2016). This includes, for example, cross-study differences in the rigor used to identify ADHD and the degree to which comorbid psychiatric conditions were addressed. Additional cross-study differences are evident with respect to the conceptual underpinnings of treatment (e.g., CBT, DBT, coaching, OTMP), which can impact what is targeted for treatment. For example, DBT and mindfulness-based cognitive therapy approaches typically do not include a strong emphasis on the concrete academic skills needed to succeed in a college environment, such as planning a schedule, studying effectively, or managing long-term projects. Conversely, interventions focused on organization and time management skills, as well as coaching approaches, may not sufficiently address commonly occurring struggles associated with depression and anxiety (e.g., maladaptive thoughts and beliefs). These types of mental health concerns, which have been found to occur in up to 55% of first year college students with ADHD (Anastopoulos et al., 2018a), are associated with significant impairment, including lower graduation rates (Salzer, 2012). Moreover, they can interfere with the efficacy of traditional ADHD treatments if not directly addressed.

In most of the reported psychosocial treatment studies, the number of treatment sessions offered has been short-term in nature (i.e., 3–10 sessions across 1–3 months), which runs counter to the prevailing view that treatment of ADHD must be more intensive and sustained over longer periods of time to have lasting impact (Smith, Barkley, & Shapiro, 2006). Relatedly, in only one of the above studies was a follow-up outcome assessment included, 3 months after treatment was completed (Fleming et al., 2015). Thus, much remains to be learned about the persistence of therapeutic gains once participation in psychosocial treatment has been completed. Finally, in none of the above interventions was there a focus on accessing outside support and resources – e.g., disability offices, counseling centers, student health services – which are readily available on college campuses and can be used together with psychosocial interventions.

Summary

Although disability accommodations and stimulant medication are commonly used to treat ADHD in college students, empirical support for their use is minimal or lacking. For this reason and because these treatments do not address many of the co-occurring features and functional impairments that are often displayed by college students with ADHD, there has been a recent surge of research interest in developing psychosocial treatments to fill this void. Initial results from these investigations are promising but definitive conclusions about the efficacy of many of these psychosocial treatment approaches cannot be drawn at this time, due to conceptual differences, methodological limitations, and the dearth of programmatic

research addressing this topic. One exception to this situation is the ACCESS intervention, which was developed systematically and addresses many of the limitations in previously reported treatment programs.

ACCESS

Impetus for Developing ACCESS

The need for developing an evidence-based intervention for college students with ADHD initially came to our attention through our clinical services. Beginning in 2008, the ADHD Clinic at UNC Greensboro saw a steady increase in referrals requesting evaluations of college students for ADHD concerns. Although some of these referrals were initiated by the students themselves, the vast majority emanated from the disability services office, Student Health Services, and the Counseling Center, all of whom needed current documentation of the students' ADHD status before providing accommodations, medication, and counseling, respectively. It was through this ongoing process of conducting comprehensive diagnostic evaluations that we became keenly aware of the struggles that these emerging adults were experiencing in college. Particularly noteworthy were three important observations. For a substantial number of these students, their clinical presentations were seldom limited to ADHD; co-occurring depressive disorders, anxiety disorders, and other mental health conditions were quite common. Another prominent feature of their clinical presentations was the pervasive impact of their ADHD symptoms, interfering not only with their academic functioning, but also with their personal, social, emotional, and vocational functioning. Even though many of these students were receiving disability accommodations and other campus support services, they were continuing to struggle. Collectively, these observations suggested that something more was needed to address the clinical needs of the ADHD college population.

To address this issue, we first turned to the research literature for guidance. Consistent with reviews of this literature at that time (DuPaul & Weyandt, 2009; Green & Rabiner, 2012), we found very little to guide us, apart from a limited number of published findings regarding the use of coaching (Reaser, Prevatt, Petscher, & Proctor, 2007; Swartz et al., 2005). We then shifted our attention to the adult ADHD literature and identified two psychosocial treatment approaches with evidence of efficacy (Safren, Perlman, Sprich, & Otto, 2005; Solanto, 2011). Inherent in both approaches was an emphasis on the use of CBT strategies, including psychoeducation about ADHD, behavioral strategies, and cognitive therapy techniques. In the Safren protocol (Safren et al., 2005), treatment was delivered individually, whereas in the Solanto (2011) program, a group format was utilized. Although both approaches seemed promising, neither had been evaluated empirically in the context of an ADHD college student population.

College STAR Project

In the spring of 2011, we were very fortunate to become part of the College STAR (Supporting Transition, Access, & Retention) Project, which is a University of North Carolina (UNC) System project focused on meeting the needs of college students with learning challenges. During our involvement from 2011 through 2014, a total of three UNC System campuses comprised College STAR, including East Carolina University (ECU) as the lead institution and Appalachian State University (ASU). Funding for the project at that time was provided through the generous support of the Oak Foundation, the GlaxoSmithKline Foundation, and several Greensboro North Carolina private foundations, including the Bryan Foundation, Weaver Foundation, Cemala Foundation, Tannenbaum Sternberger Foundation, and Michel Family Foundation.

Across all three College STAR campuses, efforts were directed towards creating faculty development and student support programming to address the needs of college students with ADHD (UNCG), learning disabilities (ECU), and executive functioning difficulties (ASU). Our research team at UNC Greensboro was responsible for developing the student support piece, which is how ACCESS was initially conceptualized, developed, and pilot tested.

Although many elements of the Safren (Safren et al., 2005) and Solanto (2011) programs were appealing, we were not certain if they could be implemented in their current form to students with ADHD attending college, given the very different developmental needs of this population versus the adults for whom these approaches had been developed. In the summer of 2011, we devoted a great deal of time and energy to conceptualizing a more developmentally appropriate adaptation of these approaches. Based on our analysis of these adult CBT programs, we decided that it was important to include developmentally appropriate psychoeducation about ADHD, behavioral strategies, and cognitive therapy skills in ACCESS. Rather than make a forced choice between individual (Safren et al., 2005) versus group formats (Solanto, 2011), we opted to use both. In light of research showing that treatment of ADHD must be sustained over longer periods of time to have lasting impact (Smith et al., 2006), we also determined that it would be best to increase the length of ACCESS beyond the typical 8–12 weeks in which most treatments are delivered. To address this latter issue, we envisioned an initial active treatment phase, during which intensive treatment would be provided, followed by a maintenance phase that allowed for gradual withdrawal of treatment.

Although these general parameters of ACCESS were clear in our minds, the exact details of how they would take shape were not. We initially considered active treatment phases ranging from 6 to 10 weeks in length, as well as a maintenance phase spanning anywhere from one to three semesters. During our involvement in the College STAR Project from 2011–2014, we implemented and evaluated these options, along with many other treatment delivery details. This iterative process of reviewing and refining our treatment approach is what ultimately allowed us to optimize ACCESS for its current use with the ADHD college student population.

Description of the ACCESS Program

ACCESS incorporates elements of the empirically supported adult CBT programs (Safren et al., 2005; Solanto, 2011), adapted to the developmental needs of emerging adults with ADHD in college. As shown in Fig. 1.1, ACCESS is delivered across two consecutive semesters, the first of which is an intensive 8-week active phase, followed by a less intensive semester-long maintenance phase in which treatment is gradually faded. In each of these semesters, treatment is delivered in both a group and individual mentoring format. The active phase of the intervention includes eight

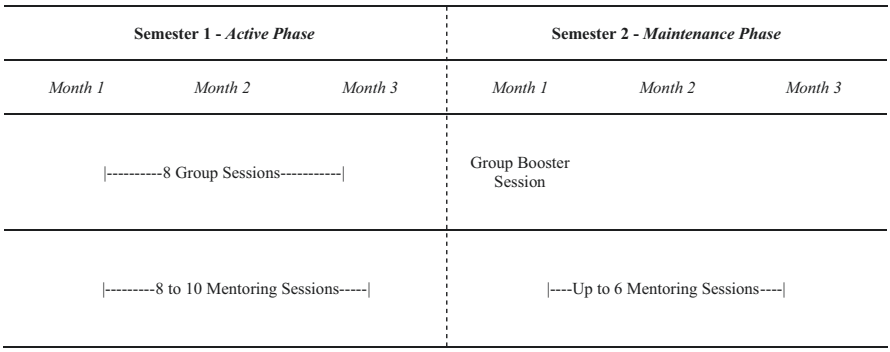

Fig. 1.1 ACCESS timeline

weekly group sessions, each of which is 90 minutes in length. Concurrent with these group sessions are weekly individual mentoring sessions, each of which is approximately 30 minutes in length. As part of the process of fading treatment, only one 90-minute booster group session is offered during the maintenance phase, along with up to six 30-minute individual mentoring sessions distributed across the semester. Both treatment delivery formats are used to address the overall purpose of the ACCESS program – namely, to give college students with ADHD the knowledge and skills necessary to be successful in their daily life functioning.

In line with the adult CBT programs (Safren et al., 2005; Solanto, 2011), ACCESS is designed to increase knowledge of ADHD; to improve organization, time management, and other behavioral skills that address executive functioning deficits; and to increase adaptive thinking skills via cognitive therapy strategies. The underlying premise of ACCESS is that treatment-induced changes in these three domains will facilitate improvements in multiple areas of daily life functioning that are commonly impacted by ADHD. As such, ADHD knowledge, behavioral strategies, and adaptive thinking skills are conceptualized as the clinical change mechanisms inherent in the ACCESS program.

Because ACCESS is fundamentally a CBT program, it has features in common with several of the other psychosocial treatment programs for adults and college students with ADHD. At the same time, however, built into the ACCESS program are many unique therapeutic elements (see Table 1.1). For example, in contrast with

Table 1.1 Unique Features of ACCESS

Unique Features of ACCESS
Includes both an active phase and maintenance phase – New material is presented in active phase – Maintenance phase provides opportunities for continued practice – Maintenance phase facilitates mastery of new material and skills
Both group and individual components – Group encourages social support and connections – Mentoring provides one-on-one attention and support
Therapeutic components delivered concurrently – Helps address needs of multiple group members – Helps address problems with attendance
Emphasis on psychoeducation (ADHD knowledge) – Greater knowledge leads to greater acceptance of ADHD diagnosis – Facilitates insight and use of treatment

the Safren (Safren et al., 2005) and Solanto (2011) programs that deliver their main treatment components sequentially – i.e., starting with an ADHD knowledge module, followed by a behavioral strategy module, and ending with an adaptive thinking skills module – ACCESS delivers these same treatment components concurrently. The decision to take this approach was inspired by clinical observations. Some students require more ADHD knowledge, others have great need for the behavioral strategies, while for still others, the adaptive thinking piece is critical. To maintain the interest and participation of every student in the group, each active phase group session (see Fig. 1.2) addresses ADHD knowledge, behavioral skills, and adaptive thinking skills in an integrated fashion, focused on a common theme (e.g., academic

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
ADHD Knowledge	Primary Symptoms	Causes	Assessment	School & Daily Functioning	Emotions and Risk-Taking	Medication Management	Psychosocial Treatment	Long-Term Outlook
Behavioral Strategies	Campus Resources	Planners and To-Do Lists	Getting Organized	Attending Classes	Effective Studying	Long-Term Projects	Social Relationships	Long-Term Goals
Adaptive Thinking	Basic Principles	Maladaptive Thinking	Adaptive Thinking	Managing Schoolwork	Handling Emotions	Adhering to Treatment	Social Relationships	Relapse Prevention

Fig. 1.2 Active phase content by week

functioning). In a complimentary fashion, concurrent mentoring sessions create opportunities for tailoring ACCESS to the needs of individual students by focusing on those components (i.e., knowledge, behavioral strategies, and adaptive thinking) discussed in group that are most relevant and meaningful for the student.

Another feature of ACCESS that distinguishes it from other CBT programs is the large amount of psychoeducation about ADHD that is provided. From clinical experience and our own research findings, we became aware of the fact that for many college students with ADHD, their knowledge and understanding of this disorder is extremely limited, often based on what their parents may have told them when they were first diagnosed as young children. For others, their acceptance and ownership of ADHD is limited due to a preference not to be publicly labeled with a diagnosis that can have negative social connotations. This is often the main reason why many college students with ADHD do not register with disability service offices, which require diagnostic disclosure. To address this apparent knowledge deficit, we incorporated a substantial ADHD psychoeducation component within ACCESS. Information about ADHD is discussed in every active phase group session. Our expectation was that by giving students a more developmentally appropriate understanding of their own ADHD, they would be more likely to accept the diagnosis, and therefore be more motivated to seek treatment and support services to help them cope. To facilitate their use of such services, time is also set aside in several active phase group sessions for guest speakers to provide information and to answer questions about campus units (e.g., disability services, counseling center) that may be of assistance to students.

Yet another distinctive feature of ACCESS is its simultaneous use of group treatment and individual mentoring. Although each of these formats is commonly used alone to deliver treatment, both have limitations. For example, in a group treatment format it is not always possible to ensure that a participant fully understands or properly uses presented clinical information. Missing from individual mentoring are opportunities for connecting with and receiving support from others facing similar life challenges. By using group treatment and individual mentoring together, we believed that the advantages of one would help offset the disadvantages of the other, thereby providing a more effective overall delivery of treatment.

The group portion of ACCESS is the primary vehicle for delivering new information during the active phase. The mentoring component of the active phase has three complimentary objectives: to monitor and fine-tune what the student learned in the group; to assess the student's need for disability accommodations and other campus support services; and to work collaboratively with the student to identify and monitor attainment of personal goals. During the maintenance phase, group leaders and mentors help students refine and master the knowledge and skills acquired during the active phase. In addition, they guide students through a gradual process of taking on increasingly greater responsibility to help prepare them for functioning on their own after their participation in ACCESS ends.

Empirical Support

During our involvement in the College STAR Project, we conducted an open clinical trial to begin the process of evaluating the therapeutic impact of ACCESS. Over a 4-year period, a total of 88 college students from UNC Greensboro with well-

defined ADHD received ACCESS. Outcome data were collected on three occasions – prior to the active phase, immediately after the active phase, and again at the completion of the maintenance phase.

The results of this open clinical trial revealed improvements in multiple domains of functioning (Anastopoulos & King, 2015; Anastopoulos et al., 2018b). Upon completion of the active phase, participants displayed statistically significant: reductions in the overall severity of their ADHD symptoms, encompassing both inattention and hyperactivity-impulsivity features; improvements in executive functioning; declines in the overall severity of anxiety and depression symptoms; increases in the number of semester credit hours attempted and earned; and increases in the use of both disability service accommodations and ADHD medications. Importantly, these improvements persisted throughout the maintenance phase of ACCESS, 5–7 months after active treatment ended. Our exploratory examination of the conceptual underpinnings of ACCESS further revealed significant increases in ADHD knowledge and behavioral strategies, along with reductions in maladaptive thinking. These results, while not confirmatory given the open clinical trial design, are nonetheless consistent with our hypothesis that knowledge of ADHD, behavioral strategies, and adaptive thinking skills are the mechanisms of clinical change within ACCESS.

Although promising, findings from our open clinical trial alone cannot be used to establish the efficacy of ACCESS for several reasons. Foremost among these is the absence of a control group against which therapeutic improvements among participants can be gauged. Also limiting conclusions are the limited scope of assessed outcomes, the absence of a follow-up assessment to determine the persistence of treatment-induced improvements following completion of ACCESS, and the use of a smaller than desirable number of participants in the sample.

To address efficacy more directly, we applied for and received a 4-year Goal 3 grant award (R305A150207) from the Institute of Education Sciences in the U.S. Department of Education. The purpose of this award was to conduct a multisite randomized controlled trial (RCT) in collaboration with Dr. Joshua M. Langberg and his research team at Virginia Commonwealth University (VCU). Recruitment for this study began in the fall of 2015 and data collection for all participants was completed in the spring of 2019.

Across five consecutive semesters, a total of 361 undergraduate students from UNC Greensboro and VCU were screened for the study. Of this number, 280 students met the study's rigorous eligibility requirements and were randomly assigned either to a group that received ACCESS immediately or to a delayed treatment control (DTC) group that received ACCESS on a one-year delayed basis. Because 30 of those assigned to the immediate ACCESS group could not attend required group meeting times due to scheduling conflicts with their classes or part-time employment, the final sample for the project included 250 participants, with 119 in the immediate ACCESS group and 131 in the DTC condition.

All participants met DSM-5 criteria for ADHD, determined on the basis of evaluation data drawn from a multi-method, multi-informant diagnostic assessment and confirmed by a panel of three ADHD experts. Approximately 58% of these students displayed an ADHD Combined presentation, with 42% meeting criteria for an

ADHD Predominantly Inattentive presentation. In addition to their ADHD, 60% exhibited co-occurring psychiatric diagnoses, most often characterized by clinically significant depression and anxiety features. In terms of demographic features, the sample ranged in age from 18 to 30 years and was predominantly female (60%), Caucasian (66.3%), and comprised of first-year college students (47.6%).

Participation in the group portion of active treatment was excellent: 83.2% of those who began ACCESS completed at least six of the eight weekly sessions; another 8.4% completed at least four. Participation in the mentoring portion of active treatment was equally strong, with 85.7% completing at least six of eight weekly sessions and another 7.6% completing at least four.

All group and mentoring sessions were audio-recorded, and 20% of these were randomly selected for review to assess treatment fidelity. Results for both treatment modalities were excellent, with group leaders and mentors displaying high overall levels of adherence to the content of the treatment protocol (96.4% and 95.6%, respectively).

Outcome data were collected at three time points for both groups – prior to the active phase, immediately after the active phase, and again at the completion of the maintenance phase. For the immediate ACCESS group, we also collected outcome data in a follow-up assessment that occurred 6 months after the maintenance phase ended. Initial statistical analyses of these outcome data have provided strong support for the efficacy of ACCESS. Relative to those in the DTC condition, participants in the immediate ACCESS group demonstrated significant post-active and post-maintenance phase improvements across multiple domains of functioning, including: ADHD (inattention) symptoms, executive functioning, academic learning and study strategies, general daily functioning, depression symptoms, anxiety symptoms, and use of campus-based disability service accommodations. Such changes were accompanied by improvements in the study's hypothesized clinical change mechanisms addressing ADHD knowledge, behavioral strategies (e.g., organization, planning), and adaptive thinking skills. Of additional clinical significance is that the immediate ACCESS group continued to display these improvements 6 months after their participation in the maintenance phase ended.

Finally, we also conducted a cost analysis that showed that implementation of the complete ACCESS program requires $1187 spent per student. Labor costs for all staff account for 83% of these expenses. Included in this total are per student costs of $367 for the group leader position and $419 for each mentor.

Summary & Conclusions

The transition to college can be a challenging adjustment for any individual, due to the increased demands for self-regulation that occur during this developmental period. For emerging adults with ADHD, this challenge can be substantially greater because of their diminished capacity for self-regulation and the fact that previously received treatments and support systems are often removed. In line with this conceptualization, research findings consistently show that, relative to those without

ADHD, college students with ADHD are at increased risk for co-occurring emotional difficulties, which together with ADHD, frequently impair performance in multiple domains of daily life functioning.

Such findings make clear the need for evidence-based treatment services for this population. Unfortunately, relatively little research has addressed this issue to date. As part of a growing interest in developing psychosocial treatments for college students with ADHD (He & Antshel, 2016), we created the ACCESS program. From the beginning, our approach has been guided by real world clinical experience, conceptual considerations, and a systematic approach to research that is consistent with recommendations for treatment development (Rounsaville, Carroll, & Onken, 2001; Weisz, Jenson, & McLeod, 2004). To this latter point, we first pilot tested ACCESS in an open clinical trial, after which we conducted a large-scale multi-site RCT. Results from both studies have consistently shown statistically significant improvements in functioning across multiple domains of functioning, thereby providing evidence of efficacy. Also noteworthy is the fact that these improvements in functioning continued 6 months after participation in ACCESS ended.

In conclusion, ACCESS is a practical, low cost, evidence-based CBT intervention that can be used in conjunction with other treatment services to address the multitude of needs of college students with ADHD. Our purpose in creating this treatment manual is to assist other professionals interested in implementing this approach, the details of which are described in the chapters that follow.

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