

College Readiness: Differences Between First-Year Undergraduates With and Without ADHD

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Abstract

Attention-deficit/hyperactivity disorder (ADHD) is characterized by inattentive, hyperactive, and impulsive behaviors. Impairment in individuals diagnosed with ADHD is significant; one such domain of impairment is achieving a college education. College students with ADHD tend to have lower grade point averages, take longer to graduate, and have higher dropout rates than individuals without ADHD. Those with ADHD may be inadequately prepared for college. College readiness can be broken into self-determination, academic skills, and daily living skills, all of which are possible areas of deficit for individuals with ADHD, given their common characteristics. In the current study, we examined differences in college readiness in undergraduates with and without ADHD. In general, students with ADHD were found to be less prepared for college than those without ADHD, and specific areas of unpreparedness were identified. The findings support the need for intervention for students with ADHD before or early in their college careers. Further research on specific skill deficits and ameliorative steps is needed.

Keywords

ADHD, college readiness, academic skills, daily living skills, self-determination

Attention-deficit/hyperactivity disorder (ADHD) is characterized by developmentally inappropriate inattentive, hyperactive, and impulsive behaviors (American Psychiatric Association [APA], 2013). ADHD was once believed to exclusively exist in children but is now understood to persist into adulthood in the majority of individuals (Barkley et al., 2008). Adults with ADHD report difficulty in workplace and occupational functioning, social functioning, dating or marital relations, community activities, and educational settings (Barkley et al., 2008). It is known that such individuals are at high risk of maladjustment in many areas of life including academic, social, and psychological domains. Research suggests that such impairments commonly include relational difficulties (Canu & Carlson, 2003; Canu et al., 2013), internalizing symptoms and poor stress management (Eddy et al., 2014; Rabiner et al., 2008; Weyandt & DuPaul, 2008), and lower quality of life (Combs et al., 2014; DuPaul et al., 2009; Fleming & McMahon, 2012).

Academic impairment for emerging adults (i.e., 18–25 years; Arnett, 2000) with ADHD can have particularly dire consequences. Indeed, everyone faces challenges in the transition from high school to independent living in

emerging adulthood, including the abrupt loss of parental support, having a still-immature neurological system (Casey et al., 2008), and increased demands for self-management. Given the characteristic impairments that occur in emerging adults with ADHD, the adjustment to college can be especially difficult. Approximately 2% to 8% of students in college have an ADHD diagnosis (DuPaul et al., 2009). College students with ADHD tend to have lower grade point averages (GPAs), take longer to graduate, and have higher dropout rates than those without ADHD (Weyandt & DuPaul, 2013). Given these sorts of outcomes, it seems reasonable to question whether high school students with ADHD are being adequately prepared for the transition to, and expectations for, college life.

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Adolescents with ADHD may experience academic impairment for several reasons, but clearly executive functioning deficits (e.g., organization, time management, planning) related to the disorder play a key role (Langberg et al., 2013). In fact, working memory, attention shifting, and response inhibition difficulties have been implicated in ADHD-related impairment in adolescents (Martel et al., 2007). Furthermore, without parental support to implement organization and time management skills (e.g., homework monitoring) and/or a behavioral treatment intervention, adolescents with ADHD may not fully engage in academic tasks in high school (Sibley et al., 2016). In addition, high school seniors with ADHD have reported spending more time socializing and playing video or computer games and less time doing homework compared with their nondiagnosed peers (DuPaul et al., 2017). Furthermore, comorbid mood and disruptive behavior disorders have shown to be detrimental to academic outcomes in adolescents with ADHD (Kessler et al., 2014). The combination of ADHD-related cognitive deficits, decreased time spent developing academic skills, and comorbid emotional and conduct problems may lead to decreased college readiness for those with ADHD.

Relatively few emerging adults with ADHD (~30%; Kuriyan et al., 2013) attend college as compared with the 69.1% of recent high school graduates in the general population of the United States (U.S. Department of Labor, 2019). Of those who begin college, they arrive with the expectation of decreased engagement with academic tasks (i.e., lower conscientiousness) compared with nondiagnosed peers (DuPaul et al., 2017). The average college student with ADHD, in addition to syndrome-related deficits, may have an inadequate set of skills and behavioral patterns to facilitate success. For example, high levels of procrastination, inadequate use of study skills, poor time management, and low motivation are linked to lower college GPA in students with ADHD (Advokat et al., 2011; Reaser et al., 2007). Although it is understood that ADHD and its related executive functioning deficits are associated with academic impairment, it is unclear exactly *how* this is manifested in college students. In particular, it is unknown whether a relative lack of *college readiness* (e.g., goal setting, academic self-efficacy, daily living skills) exists in students with ADHD that could account for some of these negative outcomes, in addition to other factors (e.g., interference of actual ADHD symptoms).

There are many aspects of cognitive, behavioral, and emotional development that can pertain to a student's college readiness. Based on a review of the literature and their joint experience working with hundreds of high school and college students with learning disabilities (and their parents) across the transition to college (T. E. L. Maitland, personal communication, April 22, 2020), Maitland and Quinn (2011) propose three critical, overarching domains that

pertain closely to readiness and successful adaptation to higher education, particularly for students with ADHD. These include (a) self-determination, (b) academic skills, and (c) daily living skills. What follows below is a review of theoretical and empirical evidence that supports these proposed domains and suggests that individuals with ADHD are likely to have deficits therein.

Self-Determination

Self-determined behavior reflects certain key characteristics, including autonomy (independent activity guided by one's preferences and interests), self-regulation (choice, reflection upon, and revision of behavior to fit goals and needs), psychological empowerment (acting with belief in one's own self-efficacy), and self-realization (reflecting an accurate understanding of one's own strengths and limitations; Wehmeyer, 1996; Wehmeyer & Field, 2007). It follows that a self-determined individual is able to set personal goals and make plans to achieve those goals, which includes finding any required resources to do so. Goal setting involves the ability to initiate new concepts, consider and plan actions in advance, and approach tasks in a strategic, efficient manner, all with appropriate realism (Anderson, 2002; Wigfield et al., 2011), and is a key aspect of self-regulated learning and metacognition (Winne, 2011) necessary for academic success. In sum, self-determined people understand their own strengths and weaknesses, can solve problems, regulate their behavior, and effectively make decisions (Maitland & Quinn, 2011). A substantial literature base exists regarding the validity of the self-determination construct; in individuals with learning and/or intellectual disabilities, higher self-determination has been associated with more positive employment and quality of life outcomes in young adulthood (see Chambers et al., 2007). Self-determination has also been positively associated with GPA in college students with learning disabilities (Sarver, 2000), and self-determination interventions for students with learning disabilities and ADHD have been associated with gains in specific academic skills (Konrad et al., 2007).

Unfortunately, individuals with ADHD tend to have characteristics that could impede various facets of self-determination. For instance, executive functioning, which is a broad neurocognitive construct that involves several cognitive processes (e.g., planning, problem solving, response inhibition, working memory; Seidman, 2006), and self-evaluation (Barkley, 1997) are integral to self-determination, and yet those with ADHD can have difficulty with both (Barkley et al., 2008; Bourchtein et al., 2017; Knouse & Mitchell, 2015). Adults with ADHD have notably been found to have deficits in response inhibition and working memory (Boonstra et al., 2005; Hervey et al., 2004; Holmes et al., 2010; Nyman et al., 2010), as well, both important to goal-directed behavior. Behavioral

inhibition and self-regulation are also problematic in the case of ADHD (Boonstra et al., 2005; Burns & Martin, 2014; Hervey et al., 2004), further complicating goal completion. Those with ADHD may routinely be unable to inhibit responding to distracting stimuli in the college environment (e.g., roommates, social activities in a dormitory), leading them to lose focus while working on academic tasks (see Fleming & McMahon, 2012, for full discussion on ADHD-related deficits in the college context). Finally, recent research suggests the possibility that typical classroom instruction may not adequately encourage self-determination in children with ADHD (Rogers & Tannock, 2018).

Daily Living Skills

Daily living skills, which correspond elsewhere to “life skills” or “functional skills” (Cronin, 1996), pertain to tasks such as doing laundry, getting enough sleep, arriving on time, exercising, preparing meals, refilling medication when needed, and keeping track of important items (Maitland & Quinn, 2011)—in other words, the things that adults do that allow them to independently meet basic biological and psychosocial needs. Difficulties with organization, planning ahead, and failure to notice and learn from mistakes will likely exacerbate challenges with activities such as laundry, grocery shopping, and keeping appointments (Maitland & Quinn, 2011), as it would for academic work, too. Deficits in daily living skills, no matter how simple this seems, have the potential to *significantly* hinder college students’ achievement of independence and academic success. Just to note two examples, it is established that sleep debt affects academic performance of students (e.g., Fallone et al., 2005), and, clearly, an ADHD medication prescription does not help with schoolwork if it goes unfilled.

To complete these tasks appropriately, planning and organization must occur, which involves executive functioning. As noted above, executive functioning deficits have been shown to be common in those with ADHD. It is no surprise, then, that Canu et al. (2016) noted that impairment in general life skills is positively associated with ADHD’s cardinal symptoms of hyperactivity–impulsivity and inattention. In qualitative research, both parents and their emerging adult children with ADHD nominate skills such as money management, being responsible at a job, and organization of one’s living space as important for successful transition to college (Sibley & Yeguez, 2018). More broadly, it has long been recognized that individuals with learning and other disabilities often do not have adequate chance to learn daily living skills in typical secondary education (Cronin, 1996; Kingsnorth et al., 2007), and parents of adolescents with ADHD, who tend to experience high degrees of conflict and stress in their parent–child

relationships (e.g., Barkley et al., 1991), may be less likely to engage in mentoring of nonacademic activities (i.e., those without immediate contingencies).

Academic Skills

Academic skills are, at face value, vital to college success. Course work at a university can be challenging for all first-year students; however, it is often *especially* challenging for individuals with ADHD. Students with ADHD who are accepted to college have likely found ways to compensate for their deficits in the past, but often those strategies fall short for college-level coursework (Maitland & Quinn, 2011). This may be due equally to different expectations of professors and the structural differences of the college curriculum, as compared with high school. For instance, in college, much less course material is presented in class (~340–500 hr classroom time/academic year, lecture uncommonly matches textbook) as compared with high school (~1,080 hr classroom time/academic year, lecture often matches textbook; Field et al., 2003), which places an emphasis on autonomous-learning skills that may be less well developed in even successful students with ADHD, whose academic achievement may have been bolstered by support and monitoring by parents (particularly mothers) at home and teachers at school (Langberg et al., 2011; Rogers et al., 2009). Critical reading, note taking, study skills, and awareness of optimal environments for studying and schoolwork are all among the competencies that are important to the adjustment of students with ADHD in their college pursuits (Maitland & Quinn, 2011). Academic impairments in children with ADHD have been well documented (see review in Evans et al., 2014), and, unfortunately, it is clear that ADHD symptoms are related to poorer academic performance in college, as well (Norwalk et al., 2009).

Other Potential Influences on College Readiness

There are, of course, many other factors that theoretically (and actually) contribute to college readiness besides ADHD status. Two that are particularly relevant when considering the population of affected college students are treatment (i.e., psychosocial or psychopharmacological intervention) and prior academic achievement (i.e., performance in high school). Double-blind, placebo-controlled studies of ADHD medication efficacy in older teens and college students are limited, but the available evidence suggests that stimulant medication can reduce ADHD symptoms and related executive dysfunction (e.g., DuPaul et al., 2012), which could facilitate the acquisition and use of college readiness skills. Furthermore, it is clear that some psychosocial treatments for adolescents (e.g., Evans et al., 2016), teens (e.g., Sibley et al., 2016), and adults

with ADHD (e.g., Safren et al., 2010) are efficacious, and when adapted in therapy might foster skills that relate to college readiness. Next, whether affected by ADHD or not, high school students who enthusiastically pursue mastery of their coursework (and thereby earn a good GPA) will likely practice academic skills that may give them a “leg up” when it comes to readiness for higher education. Thus, it is important to examine whether ADHD status is linked to college readiness independent of such contextual factors, and with a focus on the domains of self-determination, academic skills, and daily living skills.

Current Study

In the current study, we examined the differences in college preparation on the *College Readiness Scale* (CRS; Maitland & Quinn, 2011) for first-year students with ADHD compared with their non-ADHD peers (as determined by self-report of diagnosis as well as symptom and impairment expression on validated diagnostic questionnaires). The CRS examines many behaviors that pertain to the construct of readiness for college. It is hypothesized that first-year university students with ADHD will report lower readiness in the domains of (a) self-determination, (b) daily living skills, and (c) academic skills, as compared with their peers without ADHD. It is also hypothesized that these differences will be detectable even when considering the effects of treatment and prior academic achievement. In addition, demographic (e.g., race/ethnicity, biological sex) variables were assessed to describe the sample and serve as covariates in planned group comparisons, if warranted. Exploratory analyses were conducted to examine possible differences by race/ethnicity and/or biological sex.

Method

Participants

The sample was recruited from four universities representing the Southeast, Midwest, and Mountain West regions of the United States.¹ There were 2,893 (83.3% White, 63.8% biological females) participants in their first year of college included. Within this community sample of targeted first-year students, 347 participants (12.0% of total sample; 56.8% biological female) were identified as having ADHD. This was accomplished by at least one of (a) self-reported past diagnosis and/or (b) symptoms and impairment consistent with a diagnosis in childhood or currently (i.e., in line with *Diagnostic and Statistical Manual of Mental Disorders* [5th ed., *DSM-5*]; APA, 2013; standards and as per method used in Fedele et al., 2010), leaving a nonidentified control group of 2,543 participants (65.4% biological female, one declining to report biological sex). Of those in the former group, 113 (32.6%) participants met current ADHD symptom criteria for hyperactivity/impulsivity and/or inattention

and had a previous diagnosis, 182 (52.4%) indicated a previous diagnosis but had subthreshold current symptoms, and 52 (15%) reported current symptoms meeting or exceeding the *DSM-5* threshold and impairment in two or more domains but no previous diagnosis.

Participants with comorbid conditions were included. Within the ADHD group, participants reported comorbidities including specific learning disorder in reading ($n = 26$, 7.5%), specific learning disorder in math ($n = 13$, 3.7%), and mood or anxiety disorders ($n = 145$, 41.8%). Several participants within the non-ADHD group reported a mental health or psychoeducational diagnosis as well; these included specific learning disorders in reading ($n = 60$, 2.4%) and math ($n = 16$, 0.6%), and mood and anxiety disorders ($n = 380$, 14.9%). Within the ADHD group, many participants reported having received medication at some point for a mental health problem ($n = 255$, 77.3%) and currently taking a stimulant medication for ADHD ($n = 175$, 50.4%), with a relatively few reporting current antidepressant use ($n = 49$, 14.1%; endorsement in the non-ADHD group was generally much lower, $n = 236$, 9.3%; $n = 16$, 0.6%; and $n = 151$, 5.9%, respectively, with $n = 87$, 3.4% reporting use of an anxiolytic medication, too). Within the ADHD group, many participants reported participating in psychosocial treatment at some point in their lifetime ($n = 139$, 40.1% vs. non-ADHD $n = 248$, 9.7%), with fewer specifying current engagement in some form of psychotherapy ($n = 35$, 10.1% vs. non-ADHD $n = 167$, 6.6%).

The ADHD group was composed of different presentations, as follows: inattentive ($n = 81$, 23.3%), hyperactive/impulsive or combined ($n = 122$, 35.2%), or not otherwise specified (NOS; $n = 144$, 41.5%). This categorization was based on direct self-report and/or self-reported symptoms on the *Current Symptoms Scale* (CSS; Barkley & Murphy, 2006) and *Childhood Symptoms Scale* (ChSS; Barkley & Murphy, 2006). The NOS group consisted of participants who reported an ADHD diagnosis made by a psychologist or general practitioner and engaged in some type of treatment (e.g., medication and/or psychosocial), but self-reported subthreshold symptoms on both the CSS and ChSS. Finally, in terms of ethnic representation, the vast majority indicated being White (84.4%), with others endorsing in declining order of frequency, Hispanic/Latino (5.9%), Asian American (4.5%), Native American (3.3%), African American (1.3%), and Other (0.6%); 1.1% of the sample declined to specify ethnicity. As such, the sample is clearly disparate from the general population of the United States, yet it is typical of the universities that participated in the study.

Measures

Demographics form. This self-report demographics form included biological sex, age, race/ethnicity, hometown,

years of education completed, high school GPA (reported on an 8-point scale corresponding to half-point increments from 0.0 to 4.0), mental health treatment history, and ADHD-related information.

Current Symptoms Scale–Self-Report. This self-report form (CSS; Barkley & Murphy, 2006) contains 18 ADHD symptoms as indexed in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; APA, 2000). Participants were asked to rate the frequency of the behaviors within the last 6 months. Responses are on a 4-point scale (0 = *never/rarely*, 1 = *sometimes*, 2 = *often*, or 3 = *very often*), with a score of 2 or 3 converting into positive symptom presence (APA, 2013). Psychometric properties have been shown to be satisfactory, with a Cronbach's alpha of .86 and .84 for inattention and hyperactivity–impulsivity, respectively (Fedele et al., 2012). In addition, the measure had good internal reliability in the current study ($\alpha = .92$), and has norms available for ages 18 to 89.

Childhood Symptoms Scale–Self-Report. This form (ChSS; Barkley & Murphy, 2006) asks participants to report on externalizing behaviors in childhood (i.e., 5–12 years of age) and includes 18 *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; APA, 1994) ADHD items. The scaling of items is as per the CSS. The internal consistency is excellent with a Cronbach's alpha of .95 for inattention, .93 for hyperactivity/impulsivity, and .96 total (Barkley, 2013). The measure was found to have superior internal reliability herein ($\alpha = .95$), and is normed as per the CSS (above).

Weiss Functional Impairment Rating Scale (WFIRS). This measure (WFIRS; Weiss, 2000), described by its authors as appropriate for adolescents and adults, captures impairment across several life domains that are relevant to adults, and has seven subscales (a) family (eight items), (b) work (11 items), (c) school (11 items), (d) life skills (12 items), (e) self-concept (five items), (f) social (nine items), and (g) risk (14 items). Participants are asked to evaluate the presence of specific behavioral indicators of impairment in these domains referring to a 4-point scale (0 = *never/not at all*, 1 = *sometimes or somewhat*, 2 = *often or much*, and 3 = *very often or very much*). A domain is considered to show impairment if two items are endorsed as a 2 or if one item is endorsed as a 3. Psychometric properties are considered good, with internal consistency coefficients of about .80 for the measure and for each domain (Weiss et al., 2007). Canu et al. (2016) found the WFIRS demonstrated concurrent validity and strong internal reliability. In addition, the measure had good internal reliability in the current study ($\alpha = .97$).

CRS. This self-report measure (CRS; Maitland & Quinn, 2011) has 43 total items that address different aspects of an

undergraduate's readiness for college, and to our knowledge has been used exclusively in this population. There are three subscales: *self-determination* (15 items), *daily living skills* (13 items), and *academic skills* (15 items). Self-determination contains items regarding self-knowledge (e.g., about personal challenges and what works best), self-advocacy/communication skills (e.g., ability to interact and express oneself well with others), and self-management (e.g., creating and sticking to plans). Daily living skills is made up of self-care (e.g., effectively managing medication), organization (e.g., maintaining order at home), and time management related to daily activity (e.g., getting going on time in morning) items. Academic skills contains self-knowledge (e.g., where and when it is best to study), study skills (e.g., how to take notes on readings), and time management of academic tasks (e.g., setting a study schedule) components. Participants are asked to evaluate how applicable the items are to them using a 4-point Likert-type scale (0 = *never/not at all*, 1 = *sometimes or somewhat*, 2 = *often or true*, and 3 = *very often or very true*). Scores are reported as item means for all scales and subscales.

The CRS showed excellent internal reliability in the overall measure and scales noted above ($\alpha = .96$ total scale, .95 self-determination, .91 daily living skills, .95 academic skills). Statistically significant correlations between the CRS and both the WFIRS (CRS-Self-Determination and WFIRS-Self-Concept $r = -.42$, CRS-Daily Living and WFIRS-Life Skills $r = -.53$, CRS-Academic and WFIRS-School $r = -.53$, all $p < .001$) and current college GPA (CRS-Total and college GPA $r = .23$, $p < .001$) supported its construct validity. This reliability and validity information represents the first published empirical psychometric data for the instrument, to the authors' knowledge.

Procedure

College student participants were recruited through the psychology research subject pools at each institution. After completing informed consent, participants were directed to an online survey that was housed on SurveyMonkey.com and which typically took 45 to 60 min to complete. Questionnaires were presented in a standardized order, which corresponds to their presentation in the "Measures" section, above. Participants typically received course research credit for their time and effort. The study was approved by one of the participating university's institutional review board (IRB), which served as the IRB of record for all sites.

Results

Data Preparation

Chi-square tests showed differences between the ADHD and non-ADHD groups on biological sex, $\chi^2(1, N = 2,890)$

= 10.18, $p = .001$, and race/ethnicity, $\chi^2(1, N = 2,893) = 6.53, p = .01$, with the ADHD group having fewer females (56.8% vs. 65.5%) and more White participants (89% vs. 83.7%). An independent samples t -test revealed no differences between the ADHD and non-ADHD groups on age, $t(2,886) = 0.71, p = .48$. Accordingly, follow-up analyses of covariance (ANCOVAs) were conducted that examined whether the results of the primary analyses held true with males and females and across ethnicity (dichotomized as White or racial minority due to statistical power concerns; see below).

Next, independent samples t -tests were used to examine whether those identified in the ADHD group differed on dependent variables (i.e., readiness scales) based on whether they were included due to (a) reported prior diagnosis or (b) meeting current symptom and impairment criteria. No significant differences were found, and thus these subgroups were merged into a single ADHD group. Finally, current medication use, current psychosocial treatment, and high school GPA were also used as covariates, given the possibility that these contextual factors could possibly relate to college readiness skills in the sample, and particularly among those in the ADHD group.

Primary Analyses

Analyses of overall CRS scores. An ANCOVA test, with lifetime and current medication use, lifetime and current psychosocial treatment, and high school GPA entered as covariates, demonstrated significant differences between the ADHD ($M = 1.55, SD = 0.56$) and comparison ($M = 1.82, SD = 0.62$) groups on overall CRS score, with the corrected model, $F(6, 2,614) = 20.98, p < .001, \eta_p^2 = .05$, high school GPA, $F(1, 2,614) = 61.2, p < .001, \eta_p^2 = .02$, ADHD status, $F(1, 2,614) = 13.0, p < .001, \eta_p^2 = .01$, and current psychotropic medication use, $F(1, 2,614) = 4.07, p = .04, \eta_p^2 = .002$, emerging as significant predictors. The direction of these effects was as expected (i.e., higher high school GPA, non-ADHD status, and ADHD-NOS were associated with better preparedness). The raw score mean difference effect size between the ADHD and non-ADHD groups on the overall CRS was found to be quite near Cohen's (1992) standard for medium ($d = 0.5$), with the ADHD group scoring significantly lower than the non-ADHD group ($d = 0.46$).

Analyses of self-determination, daily living, and academic scale scores. Follow-up ANCOVA tests were run to investigate possible ADHD versus non-ADHD differences in the three specific CRS domains. The ADHD group ($M = 1.51, SD = 0.60$) scored significantly lower than the non-ADHD group ($M = 1.73, SD = 0.66$) on self-determination. With lifetime and current medication use, lifetime and current psychosocial treatment, and high school GPA

entered as covariates, the corrected model, $F(6, 2,612) = 12.3, p < .001, \eta_p^2 = .03$, high school GPA, $F(1, 2,612) = 30.2, p < .001, \eta_p^2 = .01$, current psychotropic medication use, $F(1, 2,612) = 5.28, p = .02, \eta_p^2 = .002$, and ADHD status, $F(1, 2,612) = 4.7, p = .03, \eta_p^2 = .002$, were found to be significant independent predictors. The effect size for ADHD and non-ADHD group differences on Self-Determination ($d = 0.33$) was between small ($d = 0.2$) and medium (Cohen, 1992).

The ADHD group ($M = 1.65, SD = 0.65$) also scored significantly lower than non-ADHD peers ($M = 1.99, SD = 0.65$) on the *Daily Living Scale* ($d = 0.52$). With lifetime and current medication use, lifetime and current psychosocial treatment, and high school GPA entered as covariates, the corrected model was significant, $F(6, 2,612) = 21.73, p < .001, \eta_p^2 = .05$, ADHD status, $F(1, 2,612) = 24.16, p < .001, \eta_p^2 = .01$, and high school GPA, $F(1, 2,612) = 19.22, p < .001, \eta_p^2 = .02$, emerged as significant independent predictors.

Regarding academic readiness, the ADHD group scored significantly lower ($M = 1.56, SD = 0.65$) than the non-ADHD group ($M = 1.85, SD = 0.7$). With lifetime and current medication use, lifetime and current psychosocial treatment, and high school GPA entered as covariates, the corrected model was significant $F(6, 2,613) = 24.02, p < .001, \eta_p^2 = .05$, high school GPA, $F(1, 2,613) = 88.28, p < .001, \eta_p^2 = .03$, and ADHD status, $F(1, 2,613) = 13.6, p < .001, \eta_p^2 = .01$, emerged as independent predictors. The size of the difference between the ADHD and non-ADHD groups ($d = 0.42$) again approached Cohen's (1992) convention for a medium effect. Table 1 presents the descriptive data regarding the dependent, CRS variables in the full sample and across subgroups that are represented in the exploratory analyses; see Table 2 for further details on the analytic results.

Exploratory Analyses

Exploratory ANCOVAs were conducted by sampling (a) only biological males or females and (b) only White or students from racial minority groups. These examined the predictive value of the set of independent variables (i.e., lifetime medication, current medication, lifetime psychosocial treatment, current psychosocial treatment, high school GPA, and ADHD group status) on CRS total, daily living, self-determination, and academic scores in each subgroup (see Table 2). For biological females, lower high school GPA and being in the ADHD group emerged as predictors of lower CRS total, daily living, and academic skills. High school GPA was the only significant predictor of self-determination; lower high school GPA was associated with lower self-determination. For biological males, high school GPA significantly predicted CRS total, self-determination, daily living, and academic skills in the expected direction (i.e.,

Table 1. Descriptive Statistics for College Readiness Scores by ADHD Group, Sex, and Ethnicity.

CRS Variable	ADHD (n = 313)		Non-ADHD (n = 2,314)		Total (N = 2,627)	
CRS total	1.55 (0.56)		1.83 (0.62)		1.79 (0.62)	
Self-determination	1.51 (0.60)		1.74 (0.67)		1.71 (0.66)	
Daily living	1.65 (0.65)		2.00 (0.65)		1.95 (0.66)	
Academic	1.55 (0.65)		1.86 (0.70)		1.82 (0.70)	
	Men (n = 138)	Women (n = 175)	Men (n = 783)	Women (n = 1,531)	Men (n = 921)	Women (n = 1,706)
CRS total	1.54 (0.53)	1.56 (0.59)	1.75 (0.66)	1.88 (0.59)	1.72 (0.64)	1.83 (0.60)
Self-determination	1.51 (0.57)	1.51 (0.63)	1.70 (0.70)	1.76 (0.65)	1.67 (0.69)	1.73 (0.65)
Daily living	1.67 (0.62)	1.64 (0.67)	1.92 (0.69)	2.04 (0.63)	1.88 (0.69)	2.00 (0.64)
Academic	1.51 (0.61)	1.59 (0.68)	1.75 (0.73)	1.91 (0.68)	1.71 (0.72)	1.88 (0.69)
	White (n = 278)	Non-White (n = 35)	White (n = 1,942)	Non-White (n = 375)	White (n = 2,220)	Non-White (n = 410)
CRS total	1.53 (0.55)	1.70 (0.62)	1.85 (0.60)	1.71 (0.66)	1.81 (0.61)	1.71 (0.66)
Self-determination	1.49 (0.59)	1.72 (0.70)	1.75 (0.66)	1.65 (0.71)	1.72 (0.66)	1.65 (0.71)
Daily living	1.64 (0.64)	1.78 (0.70)	2.02 (0.64)	1.88 (0.70)	1.97 (0.65)	1.87 (0.70)
Academic	1.54 (0.65)	1.69 (0.68)	1.88 (0.69)	1.72 (0.75)	1.84 (0.69)	1.72 (74)

Note. Values noted are *M* (*SD*). ADHD = attention-deficit/hyperactivity disorder; CRS = College Readiness Scale.

Table 2. Summary of GLM Analyses.

CRS Variable	Current medication				Current psychosocial treatment			High school GPA			ADHD group status		
	<i>R</i> ²	<i>F</i>	<i>p</i>	η^2_p	<i>F</i>	<i>p</i>	η^2_p	<i>F</i>	<i>p</i>	η^2_p	<i>F</i>	<i>p</i>	η^2_p
Total group													
CRS total	.046	4.07	.044	.00	0.03	.873	.00	61.20	<.001	0.02	13.00	<.001	0.01
Self-determination	.027	5.28	.022	.00	0.05	.831	.00	30.20	<.001	0.01	4.70	.030	.00
Daily living	.048	3.86	.050	.00	0.11	.739	.00	46.04	<.001	0.02	24.16	<.001	0.01
Academic	.052	1.95	.162	.00	0.15	.704	.00	88.28	<.001	0.03	13.60	<.001	0.01
Women only													
CRS total	.046	3.00	.083	.00	3.66	.056	.00	25.64	<.001	0.02	11.61	.001	0.01
Self-determination	.027	2.61	.106	.00	1.19	.275	.00	12.58	<.001	0.01	5.54	.019	.00
Daily living	.052	3.73	.054	.00	2.10	.148	.00	16.04	<.001	0.01	23.15	<.001	0.01
Academic	.053	1.56	.211	.00	4.94	.026	.00	44.25	<.001	0.03	9.57	.002	0.01
Men only													
CRS total	.045	0.91	.342	.00	3.02	.083	.00	24.29	<.001	0.03	2.15	.143	.00
Self-determination	.031	2.62	.106	.00	2.04	.154	.00	13.66	<.001	0.02	0.14	.707	.00
Daily living	.046	0.34	.561	.00	3.81	.051	.00	21.54	<.001	0.02	3.91	.048	.00
Academic	.048	0.30	.587	.00	3.40	.065	.00	28.38	<.001	0.03	3.89	.049	.00
White only													
CRS total	.052	2.35	.126	.00	1.24	.265	.00	45.54	<.001	0.02	18.63	<.001	0.01
Self-determination	.030	2.48	.116	.00	0.25	.620	.00	20.36	<.001	0.01	9.79	.002	.00
Daily living	.055	2.81	.094	.00	1.09	.296	.00	33.76	<.001	0.02	26.84	<.001	0.01
Academic	.059	1.30	.255	.00	1.39	.239	.00	72.18	<.001	0.03	18.04	<.001	0.01
Racial minorities only													
CRS total	.046	2.23	.136	0.01	3.80	.052	0.01	7.92	.005	0.02	1.27	.260	.00
Self-determination	.048	4.31	.038	0.01	2.70	.101	0.01	4.95	.027	0.01	3.81	.052	0.01
Daily living	.044	1.08	.300	.00	7.91	.005	0.02	5.95	.015	0.02	.00	.980	.00
Academic	.040	0.84	.359	.00	2.65	.104	0.01	8.98	.003	0.02	0.71	.402	.00

Note. η^2_p effect sizes: .01 = small, .06 = medium (Cohen, 1992). GLM = general linear model; GPA = grade point average; ADHD = attention-deficit/hyperactivity disorder; CRS = College Readiness Scale.

lower high school GPA was related to lower CRS scores), but ADHD status was not a significant predictor of CRS scores.

When examining differences across ethnicity, non-European American students were grouped together to provide adequate power for the analyses. *For White students*, lower high school GPA and being in the ADHD group predicted a lower CRS total score. High school GPA was the only significant predictor of self-determination, in the expected direction (lower high school GPA was associated with lower self-determination). *For students from racial minority groups*, current medication, current psychosocial treatment, and high school GPA significantly and positively predicted CRS total scores. Current medication, current psychosocial treatment, high school GPA, and non-ADHD status positively predicted self-determination scores. Finally, current psychosocial treatment participation and higher high school GPA were linked with higher academic skills scores.

Discussion

Deficits in College Readiness for Students With ADHD

Self-determination skills. Evident deficits (i.e., between small and medium effect) emerged for the college students with ADHD in the readiness area of self-determination, in comparison with their unaffected peers. Maitland and Quinn (2011) described how these skills are critical for first-year college students, in that, they will be required to perform tasks such as picking a major or contacting financial aid, which require self-knowledge. Although this situation may not be unique to students with ADHD, it nonetheless may be a factor contributing to fewer than half of them receiving academic accommodations in college (D. W. Murray et al., 2014). Furthermore, students will, likely for the first time, be responsible for arranging and following through on their own accommodations, prescriptions, psychosocial treatment, and overall scheduling, which all rely on effective self-management. This may be especially problematic for students with ADHD because they are likely to have less accurate perceptions about what they perform well at (Prevatt et al., 2012), engage in overly optimistic thinking (e.g., overestimate ability to complete work without assistance; Knouse & Mitchell, 2015), and may be impulsive during conversations with campus staff who provide accommodations and other resources (Robin & Payson, 2002). In general, a lack of self-knowledge and self-management could impede students with ADHD from arranging and following through with services that would likely benefit them.

Although the current data do not allow conclusions to be drawn regarding the etiology of the self-determination deficits noted in college students with ADHD herein,

reasonable conjecture suggests several possibilities. As noted, those with ADHD tend to have deficits in executive functioning (Barkley et al., 2008), which negatively affect goal-directed behavior and task persistence and might interfere with satisfactory self-management (e.g., making and keeping an appointment with financial aid). Individuals with ADHD also tend to exhibit a positive illusory bias (e.g., Hoza et al., 2004; Prevatt et al., 2012), in which they overestimate their abilities. In addition, students who lack sufficient self-determination may not have been encouraged to take on tasks such as leading their own Individualized Education Program (IEP) meetings (Martin et al., 1997) or focusing on their long-term goals or interests in high school (Wehmeyer et al., 2004), which would foster self-knowledge and advocacy skills.

Daily living skills. Even more distinct deficits in readiness (i.e., medium effect) were noted for college students with ADHD in the daily living area. This aspect of readiness evinced the greatest divergence between affected and unaffected students. These skills are crucial for success in the first year of college, so that the student can, for example, find the items they need, have an effective study space, or not have to stay up all night to “cram” or complete an academic assignment.

Students with ADHD may again be at especially high risk of falling into maladaptive daily routines due to their characteristic executive skill deficits (e.g., judgment, planning, organization, impulse control) and an impaired ability to accurately judge the passing of time (e.g., Toplak et al., 2006). Alternatively, it may be that the parents and teachers of many “successful” high schoolers with ADHD are highly involved in providing structure and assistance for daily living tasks in the home and school settings, more so than parents whose children do not have significant ADHD traits. Although such scaffolding may be adaptive in high school, too much assistance might limit the opportunity for affected students to learn how to organize their possessions and manage their time, and the relative lack of such supervision in a traditional (i.e., boarding) college may prove to be quite problematic for the success of students with ADHD (Maitland & Quinn, 2011). It could also be that parents of high schoolers with ADHD might expend their available energy merely focusing on supporting their child’s academic success (Barkley et al., 1991), at the expense of providing mentoring for daily living skills.

Academic readiness skills. Notable deficits (i.e., nearly medium effects) on the part of students with ADHD were also found in the academic readiness area, seeming particularly present on study skills (i.e., managing assignments, taking notes, preparing for tests, and writing papers) and time management (i.e., completing daily assignments and planning for long-term assignments). This is problematic

because first-year college students are challenged enough by the new, higher standards set for independent thought and analysis and depth of knowledge, without a lack of the basic skills necessary for the timely and accurate completion of assignments. Academic success may be more of a challenge for students with ADHD because they usually have more difficulty breaking down tasks and creating a plan when they feel overwhelmed by schoolwork, likely related to executive functioning deficits (e.g., Barkley et al., 2008). This can be related to higher emotional reactivity and difficulties in problem solving, as well, which are also characteristic of the disorder.

Additional Findings Regarding the Nature of College Readiness

Precollege scholastic achievement. It is well documented that students with ADHD tend to have lower precollege academic achievement than their nondiagnosed peers (DuPaul & Langberg, 2015; Evans et al., 2014), a trend that is clearly reflected in this sample. If a student has not fully developed their study skills before arriving at college, as seen in those with ADHD (Boyer et al., 2018), it would make sense that their struggles would only be exacerbated by the higher academic expectations associated with college-level work. Generally speaking, high school GPA, which was, overall, the strongest predictor of college readiness, might represent the development of robust general organizational/motivational skills. After all, the latter are needed to excel in high school (e.g., Lotz et al., 2018; Neigel et al., 2017), and also relate to things such as self-advocacy, and awareness of and completing daily tasks. Elsewhere, in thorough reviews of the predictors of college success (e.g., Bowen et al., 2009), high school GPA is shown to be one of the most robust. It is, therefore, not particularly surprising that high school GPA emerges in our sample, too, as a significant and consistent predictor of college readiness, across domains. Furthermore, the data suggest that lower high school academic achievement appears to pertain to at least a portion of the readiness gap between those with and without ADHD.

Sex differences. The most striking finding with regard to biological sex differences, clearly, is that inclusion in the ADHD group was directly associated with lower college readiness *only* in biological females in this sample. Although this would seem to converge with findings that female college students with ADHD may experience somewhat higher degrees of impairment than their male counterparts (Fedele et al., 2012), this is not necessarily inconsistent with recent literature that suggests that adult women with ADHD may suffer a *similar* degree of impairment when compared with affected men (Jaconis et al., 2016; Rucklidge, 2010); the relative difference between the ADHD and non-ADHD groups across sexes was the key. Whereas men and women

with ADHD seemed roughly comparable on raw CRS total and scale scores, examination of the descriptive statistics (see Table 1) show that women without ADHD fairly consistently reported higher college readiness than their non-ADHD male counterparts. In other words, there may be a larger decrement in what might rightly be labeled *expected* college readiness for the women in the ADHD group, even though the mean levels (i.e., scaled deficits) of college readiness were basically equivalent in affected men and women.

Race and ethnicity. Differences emerged between students from racial minority groups (i.e., Hispanic/Latino, Asian American, American Indian, African American, and Other) and their White peers, characterized primarily by current treatment for ADHD being predictive of college readiness in the former and not in the latter. Generally speaking, the scope of existent research on ADHD in children, adolescents, and adults from racial minority groups is scant (Lefler et al., 2015), and as such it is not surprising that this is the first study to document differences by race/ethnicity in predictors of college readiness in the ADHD population. That current engagement in either medication or psychosocial treatment for ADHD was more robustly predictive of readiness in students from racial minority groups may also be somewhat unsurprising, given the existent literature. For instance, research suggests that African American and Hispanic children who have ADHD can be perceived as more symptomatic than their White counterparts (Arnold et al., 2003; Hinojosa et al., 2012; Martel, 2013), and yet racial minority groups have been shown to have lower rates of diagnosis and treatment (Miller et al., 2009; Rowland et al., 2002). These trends may be driven just as much by socioeconomic disparities—such as having adequate insurance, easy access to mental health providers, and English-language proficiency and education—as they are by intrinsic group differences (Hinojosa et al., 2012; Lefler et al., 2015; Martel, 2013; Miller et al., 2009; J. Stevens et al., 2005). Although the sample size herein did not allow for analysis across different racial minority groups, the pattern of results reinforces that access to, and follow-through with, treatment for ADHD in college—and, presumably, beforehand—is particularly important to bolstering the self-determination and academic readiness skills of college students of racial minority backgrounds, including those with and without ADHD.

Other factors. When interpreting the overall set of results, it is apparent that still other factors affected college readiness. Having received treatment for ADHD was associated with better college readiness. Medication use is typically associated with ADHD symptom reduction, but evidence for reduction in impairment is mixed (Weyandt et al., 2014). However, it is possible that families that sought medication treatment provided an environment that helped students to

be more college ready. Perhaps treatment-seeking parents were more aware of their children's ADHD symptoms and the need to mitigate these impairments. Such awareness may have facilitated learning better ways to manage their symptoms, including via development of skills and organizational systems that translate into college readiness. In addition, if medication reduced ADHD symptoms, it may have been easier for these treated students to focus and develop key academically and life-oriented skills. Weyandt et al. (2017) found that stimulant medication was associated with greater impulse control and greater vigilance, specifically when investigating college students with ADHD. If taking medication leads to improvements in impulse control and vigilance, then it is possible that these students had more opportunities to learn more skills because they were more alert and less impulsive.

Clinical and Educational Implications

Clearly, the deficits reported by the students with ADHD in this study suggest they face an uphill battle in college, even beyond their challenges related to the core deficits inherent to the disorder. Just as clearly, these findings suggest that additional intervention is warranted before (e.g., in senior year of high school or the transition summer afterward) or early in college to rectify this imbalance and to help level the playing field in higher education for affected individuals.

One way of addressing possible college readiness deficits in students with ADHD is to emphasize intervention at home or school prior to the end of high school. Behavior therapy, which typically includes parent training, teacher-delivered behavioral interventions, and peer relation interventions, is shown to reduce ADHD symptoms along with some degree of impairment (Sibley et al., 2014). More behavioral therapy interventions for adolescents with ADHD, such as the Challenging Horizons Program (CHiP; Evans et al., 2011) and the Summer Treatment Program (STP; Fabiano et al., 2014), are needed to facilitate better outcomes for a larger number of adolescents and emerging adults with ADHD. When looking to inform new precollege interventions, evidence should be pulled from what we do know of these programs. However, it has yet to be established whether such evidence-based interventions for adolescents with ADHD help a student be college ready. Maitland and Quinn (2011) and others (e.g., Sarkis, 2008) outline steps for college preparation and success in college (e.g., Nadeau, 2010), but such advice, similarly, has not been empirically tested.

Some (e.g., Martin et al., 2010) have suggested that students with learning disabilities can master key self-determination skills in high school by being coached to lead their own IEP meetings, and evidence supports that this can instill certain self-determination skills, such as the practice of articulating and tracking progress toward goals and

adaptive problem solving when goal attainment is thwarted (Martin et al., 1997). Other, more intensive school-based interventions, such as the *Whose Future Is It Anyway?* curriculum (Wehmeyer et al., 2004), also focus on self-knowledge and self-advocacy with regard to the transition from high school and into adulthood. Skills and awareness developed through such activities, if generalized to higher education, may help students with ADHD to better adapt.

Overall, when looking for interventions to inform precollege psychosocial treatment, we suggest that evidence from research involving adolescents (e.g., Evans et al., 2011; Sibley et al., 2011, 2016), college students (e.g., Anastopoulos et al., 2020; DuPaul et al., 2017; Eddy et al., 2014; He & Antshel, 2016; LaCount et al., 2015, 2018; Parker et al., 2013), and adults (e.g., Safren et al. 2005, 2010; Solanto et al., 2010) should be combed in an effort to identify developmentally appropriate techniques for adaptation. For instance, developing and utilizing skills and tools that can prompt important self-determination behaviors (e.g., via organization, time-management, and planning [OTMP] training, as in Eddy et al., 2014; Safren et al., 2005; A. E. Stevens et al., 2018) may be one productive direction. For those already in college, another direction may be to actively utilize on-campus consultation (e.g., via career development offices, academic advising, meetings with professors, as in DuPaul et al., 2017) to identify personal strengths and values that may foster self-knowledge and effective choices with regard to direction of major and professional development. Focal interventions to develop specific learning skills (e.g., test taking, note taking, study skills; Allsopp et al., 2005; Holzer et al., 2009) and executive functions (e.g., self-awareness, school-life balance; Parker & Boutelle, 2009) address another aspects of college readiness, and have been shown to improve the academic adjustment of undergraduates with learning disabilities and ADHD.

More generally, there is evidence that the more parents collaborate with their child, instead of being uninvolved or overly controlling, the better the student performs academically (Pomerantz et al., 2007). However, parents may guide and functionally assist students with ADHD more than unaffected offspring, which has been suggested to not only be beneficial in the short term but also potentially take away skill-learning opportunities and associated long-term benefits (Maitland & Quinn, 2011). The current findings similarly suggest that parents should promote experiences that can lead to readiness skill development as opposed to simply scaffolding the completion of their child's tasks. Coaching parents to manage experiences instead of completing tasks for the student could be incorporated into existing, effective parent training psychosocial interventions for adolescents, such as those documented by Sibley et al. (2013) that improved some current academic functioning and ADHD symptoms. This might include developmentally appropriate shifting of tasks around the home to enhance readiness for daily living challenges, so that young teenagers are taught to

wash their own clothing, cook occasional, nutritious meals, and set their own alarms, progressing to older teenagers learning about and managing their own appointments and bank account.

Although many individuals with ADHD may need to rely on others for assistance as they navigate the rigors of college, they also bring certain strengths that might offset some of the challenges that low college readiness poses. Qualitative research by Mahdi et al. (2017) suggests that people with ADHD may have high energy and drive that actually facilitates task and goal completion, creativity that might help them to juggle competing interests, “hyperfocus” (p. 1226) that, when directed as it needs to be, could help them to persist in high-intensity hours of study or other activity, and agreeable natures that could help them navigate academic interactions and tasks with peers and professors. Professionally successful adults with ADHD nominated the first three of these as strengths, as well, and notably added courage (i.e., nonconformity, adventurousness, bravery, integrity, persistence) to the mix (Sedgwick et al., 2019), which may speak to the potential of affected college students finding such inner strength and utilizing it to persevere through difficult periods and to find faith in their path being one to success, no matter its differences. Generally, people with ADHD may feel that others overfocus on their difficulties and underappreciate their personal competencies (Schrevel et al., 2015); as such, educators, counselors, and administrators are all encouraged to better understand each individual student that they serve and to help each to realize and capitalize on their personal strengths while providing appropriate support to address their weaknesses.

Limitations and Future Directions

The current study examined self-reports of ADHD symptoms, impairment, and college readiness. Future research should consider collateral reports to bolster the accuracy and confidence in such data and related findings. The CRS (Maitland & Quinn, 2011), itself, did not have previously published psychometric data, although it had been described and utilized by its authors in published work; fortunately, the internal reliability and statistical relations with academic achievement and specific domains of impairment noted herein (see “Measures” section) bolster confidence in the instrument. Further research is still warranted, however, to better establish the validity and utility of this measure. Until that is accomplished, other measures that are better established and that tap facets of the college readiness domains measured herein (e.g., the *Arc’s Self-Determination Scale*; Wehmeyer & Kelchner, 1995) are available and indicated for use. In addition, the presence of ADHD in participants was not confirmed beyond self-reported diagnosis and symptoms, although there was evidence for participants with ADHD meeting diagnostic criteria based on these

available measures. This approach is not as ideal as having multiple informants’ perspectives; however, there is evidence that adults’ self-reports of ADHD symptoms are reliable and have acceptable agreement with those of other informants (Dias et al., 2008; Kooij et al., 2008). As such, the current sample is still likely to inform the reader of trends in the broad population of college students with ADHD.

College readiness was measured during these students’ first year in their university curriculum, but gathering data before arriving to college may portray a more accurate representation of the readiness of beginning college students. However, there is relatively little evidence suggesting an increase in adjustment as students advance in college years that could be attributable to the development of new, adaptive skills. For instance, Blase et al. (2009) found that the difficulties college students with ADHD experience are present early on in their college careers and tend to be stable over time for those who remain in college. Additional longitudinal studies tracking students from high school until college graduation are needed to better understand the impacts of college readiness on later higher education and then into “independent” adulthood and employment.

In addition, it is important to note possible procedural shortcomings. Although participants were recruited from four universities, the majority of them were White, and so generalization to students of Other racial backgrounds should be considered with caution. The current study was underpowered to examine college readiness and ADHD status within specific racial minority groups (e.g., Black, Hispanic/Latino), so a combined non-White group was used in analyses. Based on the current study, it appears that participation in treatment for ADHD (i.e., psychosocial treatment or medication) may have a greater benefit for students from racial minority groups on some aspects of college readiness. Future studies should explore how the various characteristics of such students, including their specific minority identification (e.g., African American, Hispanic/Latino, Native American, mixed ethnicity), may relate to college readiness skills.

In addition, the sample included more females than males. This, in itself, is not very surprising, given trends in the demographics of students interested in psychology (e.g., Bui, 2014), who were recruited for the study. However, it clearly would be ideal to have an equal distribution of women and men in the sample. Studies show that more males than females are diagnosed with ADHD early in life; however, the occurrence across sexes is more even as individuals age (Rucklidge, 2010; Willcutt, 2012), suggesting that the current sex distribution may not be extremely unusual, especially in college students where females are overrepresented (U.S. Census Bureau, 2018). Evidence supports females who *are* diagnosed being equally impaired as male counterparts, and there is similar consistency in response to treatment (Rucklidge, 2010). Therefore,

findings from the current study are likely still equally applicable to male and female college students.

One construct that was not tapped in this study but that may affect the relationship between ADHD status and college readiness—and, by extension, adjustment and success in college—is socioeconomic status (SES). For instance, Gormley et al. (2018) found that college students with ADHD with at least one parent who had completed a master's degree (or higher) did not suffer a decrement to GPA as others with less educated parents did. Furthermore, relative mastery of study skills in the former group did not influence their GPA, either. Longitudinal research has also indicated that, at least for boys with ADHD, parental education and occupational status is a predictor of educational outcome later in adulthood (Ramos-Olazagasti et al., 2018). As such, future research on college readiness in students with ADHD should include examination of how SES may relate to variability within this population.

Finally, independent research is needed to replicate these findings to bolster confidence and encourage application in clinical and other settings. Individuals with ADHD are often found to have executive functioning deficits, and these deficits likely play a role in the degree of college readiness as many items on the CRS address executive functioning (e.g., “I can organize my room and possessions with few or no reminders”). Therefore, executive functioning as a possible mediator for college readiness should also be examined.

Conclusion

The current study examined college readiness, which has elsewhere been defined in terms of skills in self-determination, daily living, and academic domains (Maitland & Quinn, 2011), for students with ADHD as compared with their nondiagnosed peers. Results indicated that first-year students with ADHD reported significantly lower readiness for college in all of these broad areas, and that in females, the specific influence of ADHD (relative to high school-aged preparation indexed by GPA) is particularly robust. Overall, the findings suggest that specific intervention is needed for students with ADHD in high school or earlier to address such deficits, and such future programs should be informed by the results reported here as well as other relevant programs that have been implemented for other at-risk populations.

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Note

1. These universities are public masters comprehensive or doctoral institutions, ranging in size from approximately 11,000 to nearly 37,000 students, classified as “selective” or “more selective” (U.S. News & World Report, 2019). Two of the universities were located in a suburban area, one in an urban area, and the last is in a rural area. First-generation students are fairly well represented on these campuses (20%–28%), and many students take out loans to help pay for their education (40%–69%). The most recent data available from the U.S. Department of Education (National Center for Education Statistics, 2020) indicate that at these universities, in fall 2018, the percentage of women enrolled as undergraduates was 45% to 58%. Likewise, representation of non-White students (including international students and those where race was not reported) was 17% to 33%, and 82% to 94% of students across campuses were younger than 25 years old.

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