Academic Accommodations and Functioning in College Students with Attention-Deficit/Hyperactivity Disorder: Limitations, Barriers, and Suggestions for Collaborators

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Abstract

One method for addressing barriers disabled college students face is by increasing access to academic accommodations. However, for college students with ADHD, little is known about the associations between receipt of accommodations and academic performance, behavioral functioning, and mood status. Considering college students with ADHD are at a higher risk of experiencing academic difficulties and internalizing symptoms compared to their peers without ADHD, further research into these relations is warranted. To address the existing knowledge gap, we compared academic, behavioral, and mood functioning among college student drinkers with ADHD who self-reported having been granted academic accommodations (n = 23) to those who denied ever receiving academic accommodations (n = 88). The present study also explored reasons college students with ADHD receiving academic accommodations may not utilize their provided accommodations consistently. Results indicated that self-reported use of accommodations was not associated with college grade point average (GPA), self-reported symptoms of ADHD, executive dysfunction, depression, emotion dysregulation, or overall functional impairment. Common reasons for not using academic accommodations (e.g., not feeling they were needed, being too difficult to obtain) highlight the salience of cognitive and systemic barriers to utilization. The results broadly imply that academic accommodations may be perceived as beneficial by college students with ADHD, but not sufficient to improve academic performance or indirectly impact mood- and behavior-related concerns.

Keywords: college, ADHD, accommodations, academics, mental health

Introduction

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder that broadly impacts executive functioning, including attention, working memory, and impulse control (American Psychiatric Association, 2022). ADHD is prevalent in approximately 9% of youth, making ADHD one of the most common neurodevelopmental disabilities nationally (Danielson et al., 2018). In addition to high prevalence rates, the majority of children diagnosed with ADHD continue to display impairment into adulthood (Sibley et al., 2012; Wilens et al., 2002). Although a significant body of research has examined ADHD among children and adolescents, there is considerably less attention dedicated to understanding the experiences of young adults with ADHD (age 18-25) enrolled in higher education (Stevens, Abu-Ramadan, & Hartung, 2020). Considering 2-8% of college students have a diagnosis of ADHD (DuPaul et al., 2012), further investigation is warranted to understand this demographic's unique experiences and challenges in higher education. The limited existing research suggests that college students diagnosed with ADHD

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typically are at a greater risk of academic difficulties and have higher rates of co-occurring mental health concerns (e.g., depression, substance-related negative consequences) relative to peers without ADHD (Rooney et al., 2012; Weyandt & DuPaul, 2008). The vast majority of sampled degree-granting public and private institutions reported enrolling students with ADHD (Raue & Lewis, 2011) suggesting that further attempts to characterize these students' service use on campus is needed (Green & Rabiner, 2012).

One method of supporting college students with ADHD has been through the use of academic accommodations, typically provided through a university's disability services office (Stevens, Abu-Ramadan, & Hartung, 2020). Conceptually, "disability" has been defined as limited or restricted abilities to complete activities within an average range of performance (Oliver, 2017). The Association on Higher Education and Disability (AHEAD) emphasizes the importance of clarifying that the impact of a disorder, such as ADHD, constitutes a disability rather than the condition itself (AHEAD, 2012). At the collegiate level, academic accommodations intend to reduce barriers disabled students face while attending postsecondary education, such as increased academic rigor and higher interpersonal demands (Raue & Lewis, 2011; Stodden & Roberts, 2013; Wolf, 2001). Accommodations are categorized as protected access legislation as established by the 1973 Rehabilitation Act (Section 504) and the 1990 Americans with Disabilities Act (Raue & Lewis, 2011). Common examples of academic accommodations that aim to mitigate disability-related impairments include, but are not limited to, preferred seating arrangements, audio recordings of lectures, and extended time on course-related material (Costello-Harris, 2019).

Studies investigating outcomes of academic accommodation use among college students with ADHD currently present mixed findings. College students with ADHD have reported in qualitative studies that they find accommodations (e.g., extra test-taking time, testing in different locations, and early registration) helpful though not sufficient (Farley, 2022). However, despite the positive views regarding academic accommodations, a majority of studies have not found positive effects for accommodations among students with ADHD.

Studies have shown that use of accommodations is not significantly associated with grade point average (GPA) improvements (Chew et al., 2009) or improved test performance (Jansen et al., 2019). Additionally, there are no significant group differences between college students with ADHD on reading comprehension measures when allotted standard time when compared to those without ADHD (Miller et al., 2015). These findings do not support the interaction theory that posits: (a) performance among disabled students should be lower than those of non-affected peers given standard time and (b) performance of non-disabled students will not improve with extended time (Sireci et al., 2005). Further, Lovett et al. (2019) similarly found no significant group differences amongst college students with and without ADHD on reading comprehension measures when controlling the testing environment (e.g., a private, quiet testing room versus a classroom with students). Taken together, these results suggest that common accommodations offered to college students with ADHD (e.g., extended time, distraction-free testing environment) may not be uniquely beneficial to college students with ADHD. The decreased utility of accommodations may also be due to inappropriate and generic services offered to college students with ADHD (Wadley & Liljequist, 2013). For example, a student who is easily distracted may benefit from a private and distraction-free test taking environment and not extended examination duration, whereas a student with lower or below average processing speed may not need a separate test-taking environment but may benefit from extended time on examinations. However, to our knowledge, there have not been any studies that have examined academic associations among students diagnosed with ADHD who have been granted accommodations or who have not pursued them.

In addition to academic impairment, little is known about the association among academic accommodation use and emotional well-being among college students with ADHD. Studies have previously reported an increased prevalence of internalizing experiences (e.g., depressive, anxiety symptoms; Achenbach et al., 2016), among college students with ADHD when compared to their non-ADHD counterparts (Eddy et al., 2018; Rabiner et al., 2008). However, research has yet to explicitly investigate differences in mood impairments by accommodation use status. Biederman and colleagues (2006) have posited that academic achievement differences among individuals with ADHD may be attributed, in part, to longstanding demoralization and feelings of ineffectiveness, often reinforced by teachers and parents in childhood. It may be the case that accommodations use among college students with ADHD mitigates the risk of demoralization by attempting to address well-documented academic disparities between college students with ADHD and those without (Green & Rabiner, 2012). However, academic accommodations do not teach the compensatory skills needed to circumvent difficulties associated with ADHD (e.g., disorganization,

difficulties with time management, inefficient study skills) and thus may not be associated with depression symptoms. Taken together, there appears to be a discrepancy between empirical findings on the effectiveness of accommodations and students' perception of their utility.

One potential explanation for the equivocality with academic accommodations is access and consistent use. Despite systematic efforts to improve the connection of students to academic accommodations, barriers to engagement with services are prevalent. Marshak et al. (2010) explored various reasons why students who may benefit from accommodations ultimately do not access these supports, including identity-related issues surrounding perceptions of their disability, a lack of access to information on accommodations, doubts regarding the perceived utility of services, and general fears regarding possible outcomes of requesting accommodations (e.g., stigma, discrimination) from both faculty and peers. More recent research, including Newman and Madaus (2015) further corroborated Marshak and colleagues' (2010) findings and identified additional barriers, including conceptualizing the self as not having a disability/needing academic accommodations and a dearth of institutional preparation for the transition to college at the secondary level. College students with ADHD have previously described a lack of awareness regarding their eligibility for accommodations, viewing the enrollment process with their university's disability resource center as too cumbersome, and perceiving utilizing accommodations as "an advantage over" other students as reasons for not pursuing accommodation services (Lefler et al., 2016). These reported cognitive and systemic barriers may explain why only 21-32% of disabled college students report receiving academic accommodations (Dong & Lucas, 2016; Edwards et al., 2022, Newman & Madaus). While limited research suggests this percentage may be slightly higher among college students with ADHD at 32-40% (Chew et al., 2009; Sparks et al., 2004), investigators have yet to explicitly examine the unique challenges students with ADHD encounter when attempting to utilize accommodations. A deeper understanding of these barriers is necessary considering the majority of universities admit students with ADHD (Raue & Lewis, 2011). While previous research has examined the barriers to *accessing* accommodations, investigators have yet to explore reasons why students who have obtained accommodations *do not use* these services. Access ideally serves as the first step towards eventual utilization and further investigation into this component in the sequence of service use may shed light on our continual understanding of how to best support college students with ADHD. Considering the lack of significant findings in previous studies, it is possible that barriers to utilization, as opposed to (or in conjunction with), barriers to access may function as an explanation for these existing conclusions.

To address these gaps in the research, a secondary data analysis was conducted using pre-treatment data from a recent randomized controlled trial (RCT) (Meinzer et al., 2021) aimed at reducing problem drinking amongst college students with ADHD. The goal of the present study was to further characterize college students with ADHD who are registered for academic accommodations and those who are not to address existing ambiguity in the literature. Specifically, we aimed to investigate two main research questions:

1. Is being granted academic accommodations cross-sectionally associated with academic, behavioral, and mood functioning among college student drinkers diagnosed with ADHD?
2. What barriers exist to utilizing academic accommodations, despite being provided these resources, among our sample?

Method

Participants

The current secondary data analysis study utilized pre-treatment data from a randomized controlled trial (RCT) that evaluated a novel psychosocial intervention aimed at reducing problem alcohol use in college student drinkers with ADHD (Meinzer et al., 2021). Participants were recruited via physical flyers, referrals from campus organizations, including a disability resource center, and campus listservs. Online participant management websites (e.g., SONA) were also utilized to recruit eligible undergraduate students. All participants were required to meet diagnostic criteria for ADHD established by the Diagnostic and Statistical Manual of Mental Disorders-5th edition (DSM-5) (American Psychiatric Association, 2013) as assessed by the Adult ADHD Clinical Diagnostic Scale (ACDS) (Kessler et al., 2012). The ACDS was administered at the baseline assessment by advanced undergraduates, master's-level, doctoral-level, and postdoctoral trainees under the supervision of a licensed clinical psychologist. Additionally, all students must have met the threshold for "elevated" drinking, as indicated by a score greater than or equal to 5 for females and 7 for males on the Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993), due to the aims of the larger study. Past month drinking has been endorsed by 65-85% of college students (DeMartini & Carey, 2009; Johnston, 2004),

with 53% of the general student population scoring an 8 or higher on the AUDIT (DeMartini & Carey, 2009). Of note, only 20% of participants screened for the larger study did not meet inclusion criterion based on not drinking above the aforementioned level (Meinzer et al., 2021), suggesting that the vast majority of college students with ADHD engage in elevated levels of drinking. Additional inclusion criteria for the RCT were: (a) residing away from their parents either on-campus or off-campus and (b) not currently participating in psychotherapy for ADHD that would interfere with the study (or willingness to suspend such treatment until the end of the study). Exclusionary criteria included the presence of bipolar disorder, psychosis, suicidal thoughts/behaviors considered to be high risk, or other psychopathology that would require immediate or more intensive treatment.

The sample for the current study included 111 college students with ADHD with elevated levels of drinking and was approximately evenly divided by sex (49.1% identified as male). Study participants were predominantly White (85.7% White, 8.0% Asian, 3.6% African American, 2.7% other) and non-Latino ethnicity (88.4%). Average participant age was 19.87 years (*SD* = 1.44). Among participants, 28.60% and 24.10% reported a previous diagnosis of anxiety and depression, respectively.

Measures

Independent Variables and Potential Covariates

Academic Accommodations. Students were administered the Services for College Students Interview (SCSI; Gormley et al., 2019). In this study, interview questions concerning current obtainment of academic accommodations, frequency of use, perceptions of utility, as well as barriers to use were administered.

Barkley Adult ADHD Self Report Scale (BAARS-IV). The BAARS-IV (Barkley, 2011) assesses the 18 DSM-5 symptoms of ADHD on a 4-point Likert scale. Scores for current inattentive, hyperactive/impulsive, and total symptoms were as a measure of ADHD symptom severity. The internal consistency was .84 in the current study.

Demographic Information.

Wechsler Test of Adult Reading (WTAR). The WTAR (Holdnack, 2001) is a word-reading test that, when converted to a standard score (used in current study), has a strong relationship with full scale IQ (*r* = .75) (Spreen & Strauss, 2006).

Outcome Measures

Barkley Deficits in Executive Functioning Scale (BDEFS). The BDEFS (Barkley, 2011) total score measured executive functioning deficits in the past 6 months. The BDEFS asks participants to rate 93 items on a 4-point Likert scale. The internal consistency was .98.

Barkley Functional Impairment Scale (BFIS). The BFIS (Barkley, 2011) measures ADHD-related impairment across 15 domains (e.g., social relationships, education). The overall impairment score was used in this study. The internal consistency was .88.

Beck Depression Inventory-Second Edition (BDI-II). The BDI-II (Beck, Steer, & Brown, 1996) assesses depressive symptoms during the past two weeks by asking participants to complete 21 items on a 4-point Likert scale. In the current study, internal consistency was .92.

Grade Point Average (GPA). Cumulative GPAs were provided via university transcripts. Mean GPA for students receiving academic accommodations was 3.21 (*SD* = .48) and 3.09 (*SD* = .65) for students not receiving academic accommodations.

Data Analysis

Levene's tests evaluated homogeneity of variances for both groups. Equal variances were assumed for all outcome variables. Data were analyzed using analysis of variance (ANOVA) to investigate group differences in all outcome variables.

Results

Within the current sample, 20.7% of the sample endorsed currently receiving academic accommodations in college (*n* = 23). Whether students were receiving academic accommodations did not significantly differ by age, gender, race/ethnicity, WTAR performance, or year in school. Additionally, ADHD symptom severity was not associated with whether or not a student received academic accommodations ($t(104) = -1.7$, $p = .09$).

Among students who indicated receiving academic accommodations, the average percentage of classes in which students employed their academic accommodations was 61.7% (*SD* = 36.2). The reasons for not using accommodations were: not thinking the accommodations were needed (34.8%), being too difficult/time-consuming to use (26.1%), not liking approaching instructors (13.0%), and not knowing how to use the accommodations (4.3%). The accommodations that were endorsed by students as being most often used in their classes were: extended exam time (72.7%), reduced distraction and testing in private spaces (13.6%), recording lectures (4.5%), priority registration (4.5%), and flexible attendance (4.5%). Students reported these accommodations as being either moderately helpful (40.9%) or very helpful (59.1%).

Despite students' reporting that accommodations were moderately or very helpful, there were no significant differences between students who received academic accommodations and those that do not in regards to their academics, depression symptoms, executive functioning, or functional impairment (see Table 1). Effect sizes ranged from -.30 to -.39. Additionally, among those receiving accommodations, there were no significant relations between outcome variables and the percent of classes in which students used their accommodations ($p >$. 05).

Discussion

In this study, we explored associations between academic accommodations and academic and mental health outcomes in college drinkers with ADHD who self-reported receiving formal academic accommodations versus those who had not. Results indicated that there were no significant differences in academic, behavioral, and mood status among college drinkers with ADHD who had obtained academic accommodations and those who did not. Among the present sample, 20.7% received accommodations, which is slightly lower than the 32-40% documented in previous reports on college students with ADHD (Chew et al., 2009; Sparks et al., 2004). Additionally, ADHD symptom severity was not associated with receipt of academic accommodations among this sample. The data suggest that obtaining accommodations is not associated with differential self-reported symptoms of ADHD (which ranged from the 96th-97th percentile across both groups), GPA, depressive symptoms, emotional regulation, or overall functional impairment in this sample. This is consistent with prior research findings showing that academic service use among college students with ADHD is not associated with differences in outcomes, such as GPA (Gormley et al., 2019). There were also no significant correlations between academic and psychological variables (i.e., GPA, attentional and executive functioning, functional impairment, and depression symptoms) and the percentage of classes in which accommodations were reportedly used.

Despite not finding significant associations between accommodations and outcomes, over half of participants (59.1%) who obtained academic accommodations reported these services as being "very

Table 1

Effects of Academic Accommodations on College Academic and Functional Outcomes

	Academic Accommodations *n* = 23	Academic Accommodations *n* = 88
Gender (Female)	53.4%	43.5%
Race	91.3% Caucasian 4.3% Asian 4.3% Black	84.1% Caucasian 9.1% Asian 3.4% Black 3.4% Multiracial
Ethnicity	13.04% Hispanic	11.36% Hispanic
Age, years	19.87 (*SD* = 1.22)	19.84 (*SD* = 1.49)
WTAR Standard Score	42.05 (*SD* = 5.59)	41.57 (*SD* = 5.31)
GPA (cumulative)	3.21 (*SD* =.48)	3.09 *(SD* =.65)
Attentional/Executive		
BDEFS Total	205.00 (*SD* = 53.06)	189.74 (*SD* = 45.67)
BFIS Mean Impairment	3.51 *(SD* = 1.90)	2.95 (*SD* = 1.68)
BFIS Academic Impairment	5.91 (*SD* = 2.56)	4.90 (*SD* =2.61)
Mood		
BDI-II Total	16.14 (*SD* = 14.40)	12.82 (*SD* = 10.12)

Note. WTAR = Wechsler Test of Adult Reading; GPA = grade point average; BDEFS = Barkley Deficits in Executive Functioning Scale; BFIS = Barkley Functional Impairment Scale; BDI-II = Beck Depression Inventory, 2nd Edition; No significant differences among groups by outcome variables ($p <$ .05).

helpful." This finding suggests a possible disconnect between the perceived utility of accommodations and the actual benefits, both academic and psychological, they provide to the students in this study, and is consistent with qualitative work conducted with college students with ADHD regarding their perceptions of accommodations (Lefler et al., 2016). Alternatively. it is possible that receipt of academic accommodations is indicative of more severe impairment and suggests a higher need for services. Longitudinal studies would be helpful to examine the directionality of this association. Additional research on the function and mechanisms of receiving accommodations should also be explored. It may be that traditional methods of measuring the benefits of academic accommodations (e.g., GPAs, test performance) are not accurately or fully capturing the breadth of their utility. Future studies should consider also examining variables directly related to accommodations (opposed to academic achievement), including class attendance, number of missing assignments, and reported satisfaction with faculty communications.

It is possible that there are no differential associations observed among the two groups in this sample because accommodations are not adequate to address the breadth of symptoms and areas of challenges associated with ADHD in college student drinkers. Further, academic accommodations are conceptualized as access legislation, not an evidence-based treatment. For example, typical academic accommodations (e.g., providing a distraction free environment, allowing for extensions on assignments, having a peer notetaker) do not support skill acquisition and have little empirical support (Jansen et al., 2017; Wadley & Liljequist, 2013). Thus, they may not produce significant differences in executive functioning, time management, and organization among college students with ADHD who receive accommodations compared to their counterparts who do not receive these services. Harrison and colleagues (2020) examined this notion empirically among middle school students with ADHD and found that those who completed an organizational skills and note-taking intervention outperformed their peers in who received academic accommodations only (e.g., copy of teacher's notes, extended time). It may be necessary to target specific symptoms, such as difficulties with organization, time management, task completion, attention redirection, and avoidance of difficult or long assignments, in an individualized way that matches their impairment.

Enrollment in empirically supported skills-based programs (Anastopoulos et al., 2021; Meinzer et al., 2021; Solanto & Scheres, 2021) before or during college may be more promising alternatives to increase success in college students with ADHD. These programs and other interventions that employ cognitive or behavioral elements such as organizational, planning, and time management skills demonstrate promising results with regard to improved ADHD symptoms, executive functioning skills, and GPA (Anastopoulos et al., 2021; Meinzer et al., 2021; Solanto & Scheres, 2021). Research should continue to explore ways to provide skills-based programming for college students with ADHD on campus to increase their likelihood of success. Future studies should also consider evaluating the relationships among study variables in a prospective design (e.g., via a randomized controlled trial) to evaluate the effect of academic accommodations on academic and mental health outcomes. This may further address a common methodological limitation of previous studies (i.e., utilization of cross-sectional and/or correlational designs).

In addition to examining the best ways to support college students with ADHD, it is important to understand barriers to consistent use of accommodations, which may impact their effectiveness. Students reported, on average, using their accommodations in only 62% of their classes. Perceptual or logistic barriers may be reasons for inconsistent use. Among students who obtained accommodations, common barriers to frequently using these services were not feeling as though they were needed, being too difficult to obtain, and hesitancy to approach an instructor about needing accommodations. The limited effectiveness noted in our study, and previous research, may be a function of inconsistent use and/or reported barriers, rather than inherent inadequacy of service offerings. It is also important to highlight how no significant differences were found between groups on measures of emotional functioning or GPA, yet, students overwhelmingly reported academic accommodations as helpful. The perceived student-reported benefit of these services should not be ignored but rather, understood within the context of potential explanations for this discrepancy (e.g., current measurement approaches, barriers to utilization). Given students' positive perception of the usefulness of academic accommodations, suggestions for securing accommodations may still be warranted. However, future research should examine why students are finding accommodations helpful despite little empirical evidence of their effectiveness.

Our results are in line with previous research (Gormley et al., 2019) in that the most commonly used academic accommodation among this sample was extended time on examinations followed by distraction

reductions and testing in private spaces. However, it may be important for colleges to provide (a) more tailored accommodation offerings to students needs and (b) further explanation of why specific accommodations were chosen for a given student as a possible method improving their effectiveness/perceived utility in light of our findings. Additionally, clinicians may want to work with patients with ADHD and/or their parents to increase their knowledge of what accommodations may be helpful given their specific impairments and increasing advocacy skills to ensure students have what they need to be successful in college.

From a student-centered perspective, it may be useful for clinicians (or university academic support staff) to engage in conversations (within a motivational interviewing framework) regarding why accommodations may offer structural support (e.g., helping to ensure students with ADHD are provided similar access to postsecondary education as their peers). Given that one significant barrier to accommodation use was fear of negative reactions from instructors, clinicians may want to consider role-playing discussions or constructing emails to professors regarding accommodations with college students with ADHD. Further advocacy from the University to encourage faculty to help students use accommodations may be beneficial to avoid placing the totality of the burden on students who may experience uncertainty related to a potential reaction from a professor. A study by Lefler and colleagues (2023) indicated that, conversely to what college students with ADHD may believe, professors in general have positive perceptions of students who seek academic accommodations. It may be important for these findings to be disseminated and discussed with students to dispel this belief and destigmatize accommodation utilization.

From an administrative perspective, these findings, in combination with existing literature (Costello-Harris, 2019; Jansen et al., 2017), suggest that universities may need to (a) increase the ease with which students can seek out and obtain academic accommodations, (b) reduce stigma of accommodation use, (c) provide more tailored services to students' specific learning needs in order to improve academic and psychological outcomes, and (d) find alternative measurement approaches to assess accommodation efficacy (as mentioned above). To increase the ease with which students can obtain accommodations, universities may want to consider how to best disseminate information (e.g., through orientation) and reduce the barriers to receiving accommodations (e.g., outlining clear directions for how to obtain accommodations, allowing online submission of materials). Regarding stigma, though research would suggest that instructors have positive views of accommodation use, that is not what students perceive (Lefler et al., 2023). Faculty of higher education may not be universally equipped (or willing) to provide reasonable academic accommodations or understand the rationale of for academic accommodations, which suggests that universities may need to enhance faculty members' personal beliefs about academic accommodations and how to best support disabled students (Zhang et al., 2010). Lastly, universities may want to consider supporting and implementing skills building intervention for college students with ADHD (or executive functioning difficulties) to augment accommodations offered. This type of intervention may help to address the possible mismatch between academic accommodations offered for the needs of college students with ADHD.

The results of this study add to a growing body of literature suggesting that academic accommodations for college students with ADHD may be perceived as beneficial but eligibility for academic accommodations is not necessarily sufficient or effective in ensuring academic success and maintenance of internalizing symptoms, especially for students who are at greater risk given co-occurring impairments (e.g., high risk drinking). Our work complements existing research in earlier developmental periods that suggests academic accommodations amongst elementary and middle school students with ADHD were not associated with improved standardized test scores (Harrison et al., 2020; Pritchard et al., 2016). However, to our knowledge, this is the first study to examine associations between academic accommodations and academic and mental health functioning among college student drinkers with ADHD, highlighting the need for more tailored services for this population. To our knowledge, this study is also the first to examine barriers to utilizing provided services among students who have previously obtained accommodations, further exploring an important, but understudied, component in the sequence to service use.

Limitations

These findings should be considered in light of the limitations of our study. The current study utilized cross-sectional, self-report data. Future research would benefit from prospective designs to examine the relation between academic accommodation use and longer-term outcomes (e.g., years to graduation, retention). Further, work should examine how the consistency of accommodation use could translate to more adaptive outcomes. The current study examined accommodations broadly as the sample was not large enough to examine specific accommodations

separately (e.g., extended time vs. distraction-free testing). Future studies should investigate accommodations separately in order to determine if any specific accommodations might individually impact academic achievement and mental health symptomology. Research may benefit from examining the effectiveness of "fitting" academic accommodations to individual student needs, as this was not explored in the present analysis. The current study was also limited in its ability to examine the impact of pre-college or current psychosocial interventions, an area that may confound these results and should be evaluated in future research.

Regarding demographics, this study sample was comprised of college students with a diagnosis of ADHD, who reported elevated levels of alcohol use from one 4-year college with stringent admissions standards. The presence of high risk drinking in this sample may independently impact variables such as GPA and psychological functioning. In the present study, participants were selected on the basis of drinking habits and these criteria may impact the generalizability of resulting data to college students who either do not drink or endorse lower levels of problematic drinking behaviors. This may be due to the unique impact of high-risk alcohol use on the outcomes of interest in the present study. Among college students, prior research has demonstrated significant correlations between alcohol use and GPA (Singleton & Wolfson, 2009), internalizing symptoms (Homman et al., 2017), and functional impairment (Langberg et al., 2014). However, drinking among college students is common, with recent research suggesting 65-85% of students report past month alcohol use (DeMartini & Carey, 2009; Johnston, 2004). Further, 53% of sampled college students (N = 462) scored an 8 or higher on the AUDIT in a recent study, indicating "hazardous" drinking (DeMartini & Carey, 2009). Although high rates of drinking have been reported on college campuses, not all students engage in alcohol use. As a result, these findings may not generalize to college students with ADHD who do not engage in any drinking. However, prevalence rates of alcohol use in college is increasing and college students drink at significantly higher frequencies than their non college student counterparts (Schepis et al., 2021, Schulenberg et al. 2017; Xiao et al., 2017). Further, students with ADHD endorse more alcohol-related problems (including alcohol use disorders; Rooney et al., 2015) and are at a higher risk for dropping-out of college (DuPaul et al, 2009; Weyandt & DuPaul, 2008). Therefore, this is a sample that disability services offices will need to familiarize themselves with given the adverse outcomes associated with this comorbidity.

Participants' standard scores on the WTAR (ranging from 41.57 to 42.05) indicated high levels of cognitive functioning. General intellectual capacity may have confounded the reported impact of academic accommodations on GPA. Therefore, results may not generalize to the entire population of college students with ADHD (e.g., 2-year college students or those who do not use alcohol). These associations should be explored within broader samples of college students with ADHD. Future studies should also include more racially and ethnically diverse samples, as the vast majority of participants (85.7%) in the present study identified as White.

Conclusion

The current cross-sectional study of college student drinkers with ADHD examines the associations between academic performance, behavioral functioning, mood status, and academic accommodation use. The most commonly used accommodation was extended time on examinations and the majority of participants ranked the academic services they received as very helpful. Despite the perceived benefit reported by students, no significant differences were found between college student drinkers diagnosed with ADHD who received academic accommodations and those who did not on measures assessing GPA, attentional and executive functioning, and symptoms of depression. This finding suggests that academic accommodations may not be used consistently or may not be sufficient for addressing academic difficulties among college students with ADHD. Future research should continue to examine the utility of academic accommodations among college students with ADHD through qualitative and quantitative designs, and further evaluate behavioral skills-based programming options to maximize academic success and psychological functioning.

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