PRACTICE BRIEF Voices of University Students with ADHD About Test-taking: Behaviors, Needs, and Strategies

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Abstract

In order to understand the test-taking behavior, needs, and strategies of postsecondary students with Attention Deficit Hyperactivity Disorder (ADHD), focus group comments from 17 university students with ADHD were analyzed. These comments formed the basis for a series of research studies that are in progress regarding test-taking and individuals with ADHD. The overarching goal of the current research agenda is to identify methods and instruments that disability service providers (DSP) can use in order to support decisions about test accommodations for students with ADHD. To accomplish this goal it is necessary to first identify specific test-taking behaviors that postsecondary students with, and without, ADHD demonstrate. This practice brief describes those test-taking behaviors that were self-reported during focus groups and is intended to raise awareness about the test-taking characteristics of postsecondary students with ADHD.

Keywords: ADHD, test-taking, test accommodations, postsecondary, extended time

The population of students with Attention Deficit Hyperactivity Disorder (ADHD) is on the rise in postsecondary settings (Kessler et al., 2006). Some of these students request test accommodations in order to ameliorate the functional impact associated with ADHD. The most commonly requested test accommodations for students with ADHD are extended time (Gregg & Nelson, 2012), a private room or distraction-reduced environment, and test breaks (Wagner, Newman, Cameto, Garza, & Levine, 2005). Individuals with ADHD, and the professionals who evaluate them, suggest test accommodations as a way to reduce the interference of ADHD symptomology in the test-taking environment. However, there appears to be minimal clarity about how the functional limitations of ADHD manifest in a test-taking situation and, subsequently, what constitutes reasonable accommodations. Results of one study suggest that students with ADHD do not differ significantly from their peers in terms of cer-

tain reading or test-taking variables (Lewandowski, Gathje, Lovett, & Gordon, 2013), but some students with ADHD self-report time limits as an impediment to test-taking performance (Fox, 2013; Lewandowski, Lovett, Codding, & Gordon, 2008).

Therefore, if the functional limitations associated with ADHD may not be, for example, reading rate or task completion, what are they? A review of the literature on postsecondary students with ADHD indicated that individuals with and without ADHD perform similarly on many neuropsychological test instruments but differ in terms of inattention, inadequate coping strategies (e.g., organizational skills), and higher levels of internal restlessness and intrusive thoughts (Weyandt & DuPaul, 2006). Given these characteristics, we have attempted to understand how ADHD symptomology impacts test-taking and why some students with ADHD believe additional test time is an important accommodation.

Use of Psychoeducational Evaluations for Decisions About Accommodations

Researchers have documented the widespread use of psychoeducational report data to make decisions about service delivery in postsecondary settings (Madaus, Banerjee, & Hamblet, 2010; Ofiesh & McAfee, 2000). Reports written for students with ADHD and learning disabilities typically include standardized measures of cognition, academic achievement, behavior, and in some cases, measures of executive functioning (EF). Part of the challenge in addressing the needs of postsecondary students with ADHD is that they present in as complicated a manner as students with learning disabilities. Simply stated, both populations of students with ADHD and learning disabilities are highly heterogeneous. Furthermore, not only are both categories of disability multifaceted, students with ADHD do not and cannot be expected to present with the same functional limitations as students with learning disabilities.

Therefore, if a disability service provider (DSP) seeks to find evidence of functional impact for a student with ADHD through, for example, fluency, decoding, or processing speed measures, as one may for a student with a learning disability, they can be stymied when the psychometric test data from the student's psychoeducational evaluation does not suggest weaknesses in these areas. There may be little information from standardized tests of achievement to suggest that the individual with ADHD would have difficulty completing a test within a standard time frame or need an accommodation such as a distraction-reduced environment or test breaks. Uncertainty about the functional impact may, for example, continue if the DSP and student with ADHD meet and the student emphasizes that extended time and a separate test room is indeed needed during test-taking because of his or her ADHD.

These diverging observations and research findings leave unanswered the questions, "What about having ADHD necessitates the need for test accommodations, especially more test time, which is so commonly requested?" and "What actually happens for a student with ADHD before and during a test, and is this significantly different from students without ADHD?" Unfortunately, there is a paucity of research on test-taking behavior and students with ADHD as well as on student perceptions of test accommodations. Further investigation in the area of test-taking behavior among college students with ADHD is critical in order to help those charged with making decisions about test accommodations do so in a professional manner.

ADHD and Test-taking

A literature review on test-taking and postsecondary students with ADHD was conducted. Lee et al. (2008) investigated the effects of pacing on the academic test performance of 21 students with ADHD. The researchers speculated that a computer-paced presentation would enhance the performance of students with ADHD by regulating their attention. In this study, students with ADHD were randomly assigned to one of two computer-based test situations. One test provided controlled timing (i.e., computer paced) and the other provided a student-paced testing condition within a computer-based environment. No score differences were found between the two environments, but students reported that the computer-paced testing environment, in and of itself, positively provided structure for them. Qualitatively, of the 21 students, 15 reported that the open spatial layout of the text on the test enhanced their performance as they could better focus on the content of the passage. Many students felt pressured with the time limits despite the structure. Additionally, most endorsed preference for a distraction-reduced environment and believed it enhanced their performance.

In a study that included information about testtaking concerns, Lewandowski et al. (2008) compared academic complaints of students with (n = 38)and without (n = 496) ADHD. Results indicated that 67.7% of students with ADHD, as compared to 45.4% of students without ADHD, felt they did not perform well on standardized tests. More students with ADHD (64.9%) than without (28.6%) felt they had trouble finishing timed tests. Similar results between the two groups (78.4% among ADHD vs. 30% without ADHD) were observed regarding self-perceptions about length of time to complete assignments compared to others. The researchers concluded that students with ADHD are more likely to perceive academic or test-taking problems, although these self-reported concerns are not specific to those with ADHD. In order to further investigate test-taking and postsecondary students with ADHD, focus groups were held to better understand the experience of these students. The results of these focus groups are discussed in this practice brief and form the basis for preliminary findings about how students with ADHD perceive their disability interacting with test-taking. The results informed the development of a survey (Nassar-McMillan & Borders, 2002) and interview protocol about test-taking behavior for a qualitative study that is in progress (Ofiesh, Bisagno, & Moniz, 2015).

Focus Groups

Focus group participants were comprised of ten female and seven male postsecondary students. Fifteen were diagnosed with ADHD and two were diagnosed with ADHD and a Specific Learning Disability: Reading Disorder, according to the guidelines for each of the universities' office for students with disabilities or one University's medical center. The students were enrolled at three institutions of higher education: two private (n=15) and one public institution (n=2). The students represented five graduate students and twelve undergraduates.

Twenty questions served as the interview guide, with four categories of questions: (a) impact of ADHD on test-taking, (b) test study strategies that work and do not work, (c) use of extended test time, and (d) medication and test-taking. Only the questions that pertained to test-taking are included in this analysis. Four focus groups were held with participation ranging from two to six participants per focus group. Conversations were recorded and transcribed with MSWord Notebook View. The primary investigator and one research assistant served as the moderators in order to maintain the focus of the discussion (Nassar-McMillan & Borders, 2002). Themes were organized using NVIVO10 (QSR International).

Discussion

This paper reports the results of focus groups that were held to inform the development of studies on ADHD and test-taking. The results are presented in order to inform professional practice for service delivery to support the academic success of postsecondary students with ADHD; it is not intended to suggest that offices of disability services should conduct research or hold focus groups as part of their mission or responsibilities. Several distinct themes emerged from the collected data; direct quotes are listed in Appendix A. These themes clustered around four main topics: the impact of ADHD on test-taking, study strategies, use of extended test time, and medication issues. The comments and themes that emerged from the focus groups suggest that DSPs may be able to use observational, formative, summative, and executive functioning data from a student's psychoeducational evaluation to make more effective decisions about test accommodations for students with ADHD. Additionally, DSPs may find the comments students made regarding test study strategies and medication useful when talking to students about campus resources and the challenges they face in school.

ADHD and Test-taking

Four main issues were raised with respect to how ADHD generally impacts test-taking: attention and focus, distractibility/switching or shifting, movement, time management and perception. The set of diagnostic criteria for ADHD includes inattention, inattentive or hyperactive-impulsive features before age 12, symptomology present across two or more settings, clear evidence that the symptoms interfere with functioning, and do not occur during the course of another mental disorder (American Psychiatric Association [APA], 2013). It is not surprising, therefore, that many focus group respondents commented that having ADHD impacts test-taking through inattention, lack of focus, distractibility, and the need for movement. Indeed, several students stated that self-imposed breaks were utilized to "zone out" or engage in movement/physical activity during a test session where extended time was granted. These behaviors are not primary characteristics of learning disabilities and help to illustrate the difference in functional limitations between students with learning disabilities and students with ADHD.

Study Strategies

In response to questions about test study strategies that did and did not work, six major themes emerged, with engagement in movement and the need to reduce distractions described as positive strategies. Seeking outside support, taking breaks, and self-managing time were seen as negative strategies. There was mixed support for working with others in groups as some participants found it to be a useful strategy, whereas others did not find it useful. Some students with ADHD seem eager to study in groups but may feel their time management difficulties make it hard to actually get to the study group or because they feel too far behind in course material to participate.

With respect to study breaks, it is noteworthy that many practitioners recommend a "time on-time off" approach to help allocate study time productively, with some practitioners recommending the use of timers and alarms. Participants' comments, however, suggest students need practice with time management before implementing a "scheduled break" approach in studying. Scheduled or not, students feel that frequent breaks and movement are critical to address the symptomology of ADHD while studying. Therefore, disability service providers may want to ask students about their need for support with time management, ability to manage breaks, as well as use and effectiveness of timers and alarms.

Extended Time

Participants who had experience taking a test with extended time were asked how they actually used the additional test time. Five major themes emerged including: attention and focus, speed, movement/ breaks, (lack of) perception of time/pacing, and shifting thought processes. Focus group students with ADHD indicated a desire for extended test time for different reasons than focus group students with ADHD and learning disabilities. Rather than a need to ameliorate a slow reading rate or inaccurate decoding as the students with a co-existing learning disability stated, students with ADHD said extended time was used to give them more time to focus or take a break as a result of difficulty maintaining attention, distractibility, executive functioning issues, the need to move around, self-monitor time, or a combination of these.

Given these comments, breaks may be a more appropriate and reasonable accommodation than extended time for some students, but this will take retraining of DSPs and students regarding the purpose of breaks as compared to extended time. Some students with ADHD appear to need "stop the clock" breaks to simply take a mental break or engage in movement (Barkley, 2011). Initial findings from the study by Ofiesh, Moniz, and Bisagno (2015) have found that some students with ADHD are actually resistant to stop the clock breaks because they are unaware of periods of inattention thus don't know when to stop the clock appropriately.

These comments are important given that many accommodation decisions are based on the functional impact noted in academic diagnostic tests. In reality, the areas of functional limitation noted by students with ADHD are not well captured by diagnostic academic assessments. This is important because it is the diagnostic academic assessments that professionals in the field are encouraged to look at in order to identify how the disability impacts learning. Furthermore, diagnostic academic tests are designed to slice out how an individual performs on different aspects of reading, writing, and math tasks. These aspects usually fall into the categories of basic skills, fluency, and application. Students with ADHD often fall short on application and fluency measures, but the diagnostic academic tests are so short in length the weakness that appears on a test does not correspond to the real life tasks of a college student. The two respondents with co-existing reading disorders were the only ones who indicated extended test time would help with answering more of the test.

Students' comments about how they use extended time and how it is related to their ADHD suggest a more refined use of the psychoeducational evaluation should consider comments about observations of movement and distractibility, executive functioning, and awareness of medication use in addition to performance on timed tasks. If executive functioning instruments are included in evaluations of students with ADHD, the results should be closely evaluated but with the caveat that some specialists question the ecological validity of those tests (Barkley, 2011; Meltzer, 2007). In general, if clinically significant ratings of these behaviors are noted, the use of a solo room as a way to reduce distractions, allow for externalizing behaviors (e.g., positive self talk), and breaks for physical activity may be reasonable accommodations.

Finally, strategy use and coaching may be needed in the area of time management for some students. For example, students who have difficulty with time management may need to learn how to manage time within the test-taking environment, especially if they will use other accommodations as well (Parker & Boutelle, 2009).

Medication

Participants were asked about medication use in the treatment of their ADHD. Those who did take medication were asked if the time of day they took the medication impacted their ability to take a test. Several participants reported changing the time in order to accommodate a scheduled exam. Some students who use medication for ADHD seem to adjust their medication based on when a test is scheduled. Comments suggest this may have negative side effects with respect to sleep patterns. Additionally, the adjustment of medication could have an impact on the ability to perform well on other tasks later in the day or the following day.

Summary

Focus group comments about test-taking from postsecondary students with ADHD were analyzed. The results provide insight into how the test-taking environment intersects with the symptomology and functional limitations of ADHD for college students. Most of the functional limitations (i.e., behaviors) described by students with ADHD indeed capture the diagnostic criteria of ADHD, as well as executive functioning deficits. The findings of these focus groups are in the process of validation in a series of research studies. In the meantime, DSPs are encouraged to look for observational data noted in the student's psychoeducational evaluations as well as to rely on the evaluator's comments in order to make accommodations.

References

- American Psychiatric Association (2013). Diagnostic and Statistical Manual of Mental Disorders (Fifth ed.). Arlington, VA: American Psychiatric Publishing.
- Barkley, R. A. (2011). Executive functions: What they are, how they work, and why they evolved. New York, NY: The Guilford Press.
- Fox, L. (2013). Success factors 40 years later: The pioneer postsecondary program for students with learning disabilities, attention deficit hyperactivity disorder, and executive function. Learning Disabilities: A Multidisciplinary Journal, 18 (3), 18-28.
- Gregg, N., & Nelson, J. M. (2012). Meta-analysis on the effectiveness of extra time as a test accommodation for transitioning adolescents with learning disabilities: More questions than answers. Journal of Learning Disabilities, 45, 128-138.
- Kessler, R., Adler, L., Barkley, R., Biederman, J., Conners, K., Demler, O., Greenhill, L., Howes, M., Secnik, K., Spencer, T., Ustun, T., Walters, E. E., & Zaslavsky, A. M. (2006). The prevalence and correlates of adult ADHD in the United States: Results from the national comorbidity survey replication. American Journal of Psychiatry, 163, 716-723.
- Lee, K. S., Osborne, R. E., Hayes, K. A., & Simoes, R. A. (2008). The effects of pacing on the academic testing performance of college students with ADHD: A mixed methods study. Journal of Educational Computing Research, 39(2), 123-141.
- Lewandowski, L. J., Lovett, B. J., Codding, R. S., & Gordon, M. (2008). Symptoms of ADHD and academic concerns in college students with and without ADHD diagnoses. Journal of Attention Disorders, 12, 156-161.
- Lewandowski, L., Gathje, R. A, Lovett, B. J., & Gordon, M. (2013). Test-taking skills in college students with and without ADHD. Journal of Psychoeducational Assessment, 31(1), 41-52.
- Madaus, J. W., Banerjee, M., & Hamblet, E. C. (2010). Learning disability documentation decision making at the postsecondary level. Career Development and Transition for Exceptional Individuals, 33, 68-79. doi: 10.1177/0885728810368057.
- Meltzer, L. M. (2007). Executive function in education: From theory to practice. New York, NY: The Guilford Press.
- Nassar-McMillan, S. C., & Borders, L. D. (2002). Use of focus groups in survey item development. The Qualitative Report, 7.

- Ofiesh, N. S., Bisagno, J., & Moniz, E. (2015). University students with and without attention deficit/hyperactivity disorder (AD/HD): Test behavior and strategy use. Manuscript in preparation.
- Offiesh, N. S., & McAfee, J. K. (2000). Evaluation practices for college students with LD. Journal of Learning Disabilities, 33, 14-25.
- Parker, D. R., & Boutelle, K. (2009). Executive function coaching for college students with learning disabilities and ADHD: A new approach for fostering self-determination. Learning Disabilities Research & Practice, 24, 204-215.
- Wagner, M., Newman, L., Cameto, R., Garza, N., & Levine, P. (2005). After high school: A first look at the postschool experiences of youth with disabilities. A report from the National Longitudinal Transition Study-2. (NLTS2). Menlo Park, CA: SRI International.
- Weyandt, L. L., & DuPaul, G. J. (2006). ADHD in college students: A review of the literature. Journal of Attention Disorders, 10, 9-19.

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Appendix A

Focus Group Questions

Please Indicate: ADHD Combined Type/Hyperactive/Inattentive/Don't Know/Also LD

- 1. What is ADHD?
- 2. How does having ADHD impact your ability to take a test?
- 3. What is something that you do to help you study for a test, which students without ADHD probably do not do?
- 4. Why do you think that helps you?
- 5. What is something that you have tried, because of your ADHD, in order to help you study for a test that did not work?
- 6. Why do you think that didn't work?
- 7. What is your understanding of why the disability service office on your campus provides test accommodations?
- 8. What kinds of test accommodations are available to university students with ADHD?
- 9. What are some reasons students with ADHD need test accommodations?
- 10. What are some reasons students with ADHD do NOT need test accommodations?
- 11. What stops some students with ADHD from asking for test accommodations?
- 12. What kinds of test accommodations do you request?
- 13. Do you ever use extended time?
- 14. If yes, how much time? 50% more (time and a half) or 100% (double time)
- 15. How do you use the extra time?
- 16. What do you do with the extra time that you are provided?
- 17. If you take medication for ADHD, does the time you take your medication impact your ability to take tests?
- 18. What do you want faculty to know about having ADHD?
- 19. What do you want those of us who work in the disability service office know about having ADHD?
- 20. What do you want your classmates to know about having ADHD?

ADHD and Test-taking Comments				
Impact of ADHD on Test-taking	Attention & Focus	"I can forget that I'm taking a test and my mind can just go somewhere and I just end up daydreaming and staring off and I don't realize that I'm doing it during a test and time goes by." "I start zoning out and I can no longer focus on the material." "My focus is all the way zoomed in or all the way zoomed out."		
	Distractibility / Switching	"I am a fast test-taker so I actually give myself time to check everything out before I get started, so that I don't get distracted during the test." "I think it takes me longer to take a test, especially when it comes to writing. I know I am not a good writer, and I persist to make a written answer what I want it to be, and that can be a distraction in itself. All the different ways you can express a thought or an idea or get distracted by all the little things and maybe lose track of time." "I hyper-focus, so the problem is really when people move around or proctors are moving around and I get focused on all that." "Suddenly I'll notice everything and the test is secondary to everything that's going on. So it's switching between those two things. You can focus for so long, then that just stops." "When people are walking around the room it's really distracting and I can't get back to a problem."		
	Movement	"I just can't sit down and study for a long period of time without moving." "I just can't focus. I can't actually make myself sit there for that long."		
	Time Management and Perception	"I'll run out of steam, or I just lose my pace, and not do any work for 10 minutes and just feel tired." "I don't have the ability to perceive time when I'm working; I just have no internal clock."		

ADHD and Test-taking Comments				
Test study strategies that work and don't work	Engage in movement	"I like to have an area where I can walk around. If I cannot sit there any longer I can stand up, and walk" "When I notice I get zoned out, I can't get myself to zone back in unless I do something physical, so I just like, do push-ups in my room or something, when walking around no longer does it." "I have to break up my assignments; not do them all at once. I need breaks. I have trouble sitting down."		
	Reduce distractions	"I am very inflexible. I can actually only study in the library, and only specific places in the library. I can't study in small places. I have to be in the right place, in the right frame of mind, and then it takes all that to, like, even study." "I need to be away from distractions."		
	Work with others	"I want to study with others, but I don't study with other people because I don't feel prepared enough to study with anyone else, because I feel I am so behind; it's kind of embarrassing." "I fidget all the time while I'm studying. I know sign language so I sign while I'm reading and my friends say you're really distracting me." "I like working in a group." "I procrastinate on studying until I get enough adrenaline to actually focus. The costs of not studying have to outweigh the benefits of working on projects or other things like that, um, in order for me to study. If I'm working on something with a group then I prioritize that." "I like to interact with people. I can write on boards, I can sit, I can walk around, rather than sit and look at a textbook. Somehow textbooks can make interesting problems sound really boring. Professors can do that too."		
	Seek outside support	"I work best when I'm working with other people, but oftentimes, and the same thing applies to preparing for tests, I don't make it to office hours because I feel like I'm too behind [I haven't done the reading]." "I want to get help for a class, but the problem begins with the process of getting to the tutoryou know, actually signing up, then getting the correct date, all those things are exactly what I struggle with (with ADHD) so it doesn't become a tool I use regularly." "You know, I'm already behind on everything, and adding an appointment with a tutor, and getting that appointment before a test is, you know, hard."		

ADHD and Test-taking Comments				
Test study strategies that work and don't work	Breaks as related to transitions and shifting	"I have been told to take frequent breaks, but that's too hard. It's hard to get back to studying; the transitions are hard and by the time I'm studying I'm already pressured and I just want to focus on my work and I get to the point where I don't want to do anything else." "I need to have activity and I need to do something that's not what I was doing while I was studying. Mostly it's taking a break and doing something physical and coming back. I have to come back and do something different. If I was working on math I'll work on reading or doing other things completely different. I can shift gears, but it's really hard for me to zone out and zone right back in."		
	Self-manage time	"I always have three different text books open and I'm like, alright, I'm going to read a few pagesoh, I'm bored with that, I'm going to do this oneso I have a giant checklist on my computer of every topic I have to do, and I don't have to do it all at once." "I was told to use a timer. That did not work because I don't get it done." "Someone told me I should study like every day for the week leading to a test or project. That didn't work. I just could not remember something I studied a week ago. Especially if I am studying a lot of foreign language stuff." "I don't write out my answers to essays ahead of time for practice, because writing is just too hard; I just memorize more."		

ADHD and Test-taking Comments				
How extended test time is actually used	Attention and focus	"For me, with Italian, I have to start thinking in Italian, which takes so much longer to get focused to think in another language." "I take some time to get focused, look at the number of questions on the test and sort of plan out how long I want to spend on each one so I make sure I'm covering the material, and I guess for each question I might make some notes, just off the top of my head in the margins." "I have a poor memory and there's just a lack of time. I need time to remember things. I takes me longer to memorize and to remember." "I find myself getting distracted I just go with it, and give myself time to look around the room and check everything out and then I am able to get back to the test." "Sometimes I give myself permission to just 'space out' and then get back to work." "I need time to zone out or space out, and get back to work."		
	Speed	"To finish the test, I need more time to respond to more of the test. [Person with coexisting reading disorder]." "I can't finish the test without extended time. I mean, I just can't. I read slow. It's literally me finishing the test. [Person with coexisting reading disorder]."		
	Movement/Breaks	"I need to get up and walk around or take a break." "I need to just stop and take a break and move around." "I need time to move around the test and just space out."		
	Perception of time/pacing	"I go through the test and decide what I know and don't know. I skip around a lot, 'cause it keeps me going. Sometimes I lose track of time and then I'm all messed up." "I just can't pay attention that long and all of a sudden time is out."		
	Shifting	"It's hard to shift gears between things and I lose track of time."		

ADHD and Test-taking Comments			
Medication and Test-taking	Change medication to accommodate test time	"I always take my medication in the morning and my tests have typically been in the morning. For study and test-taking my medication helps. It does help me to keep myself on track if I take medication before a test, but I also get pretty juiced up with adrenaline so maybe I don't really need it on test days." "For me, short-acting medication is like firing on all pistons. It helps a lot. I'm taking it more times than I should. I've done that sometimes and it's intense how much work I get done." "I was taking medication, but it never worked out."	
	Changes to medication to accommodate test time with impact on sleep patterns	"I've tried many different types of medication; they're all different. But I think a lot of them require you to take them early in the day so if you have a later test, by that time it's started to wear off. If I have a test I plan my medicine around the test so that I will be at my best performance during the test. But that can affect my sleep sometimes, for the nightor the day before, so I have to plan it out in advance, not just one day. It almost always affects the day before and the day after." "I change when I take my medication according to when the test is, but sometimes it messes up my sleep pattern, especially if the test is late in the day."	