Université de Montréal

# Efficacy and Perceptions of Academic Accommodations for University Students with ADHD

*Par*

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Essai doctoral présenté en vue de l'obtention du grade de Doctorat en psychologie (D. Psy)

en psychologie clinique

Août 2022

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Université de Montréal

Unité académique : département de psychologie, Faculté des arts et des sciences

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*Cet essai doctoral intitulé*

**Efficacy and Perceptions of Academic Accommodations for University Students with ADHD**

*Présenté par*

**Mélodie Lemay-Gaulin**

*A été évalué par un jury composé des personnes suivantes*

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# Résumé

L'enseignement supérieur présente des défis uniques pour les personnes qui vivent avec un trouble de déficit de l'attention/hyperactivité (TDAH). Il est d'ailleurs bien établi que les étudiants atteints du TDAH ont généralement des niveaux de performance académique inférieurs à ceux de leurs pairs dans TDAH. Une stratégie courante pour aider les étudiants atteints du TDAH et d'autres handicaps à réussir à l'université consiste à leur offrir des mesures d'accommodement destinées à pallier les difficultés particulières liées à leur condition. Il est surprenant de constater que très peu d'études ont été menées pour déterminer l'impact des mesures d'accommodement sur la réussite des étudiants universitaires vivant avec le TDAH. De plus, une partie des données disponibles suscite des doutes importants quant à l'utilité des mesures d'accommodement les plus couramment offertes aux individus atteints du TDAH en milieu universitaire, soit la prolongation du temps pour les examens et l'utilisation d'un local à part. À l'aide d'un échantillon d'étudiants universitaires au Canada, nous avons cherché à examiner l'association entre l'utilisation de mesures d'accommodement pour le TDAH et la performance académique. Nous avons comparé les résultats cumulatifs d'étudiants atteints du TDAH ayant utilisé des mesures d'accommodement à ceux d'étudiants avec un TDAH qui n'ont pas utilisé d'accommodement et à ceux d'étudiants sans TDAH. Nous avons également cherché à examiner les perceptions qu'ont les étudiants avec un TDAH des accommodements qui leur sont offerts. Nous n'avons pas été en mesure de générer des données appuyant l'hypothèse selon laquelle les mesures d'accommodement constituent un moyen efficace de soutenir les étudiants universitaires atteints du TDAH. Cependant, nous avons constaté que les étudiants qui avaient utilisé des accommodements les considéraient généralement comme efficaces. Nous avons également compilé les réponses des participants atteints du TDAH décrivant leurs souhaits et leurs besoins en matière de services et de soutien pour les aider à réussir. Dans notre discussion, nous soulignons plusieurs lacunes dans la littérature concernant les accommodements et le soutien des étudiants atteints du TDAH en contexte d'enseignement postsecondaire.

**Mots-clés** : trouble déficit d'attention/hyperactivité, TDAH, mesures d'accommodement, étudiants en situation de handicap, services aux étudiants

# Abstract

Higher education presents unique challenges and struggles for individuals living with attention deficit/hyperactivity disorder (ADHD). As a result, it is well established that students with ADHD generally have lower levels of academic performance and educational achievement than their peers without ADHD. A common strategy to help students with ADHD and other disabilities succeed in university is to offer them academic accommodations meant to palliate the particular challenges associated with their condition. Surprisingly, very little research has been conducted to determine the impact of academic accommodations on the performance of university students with ADHD. Moreover, some of the available data cast significant doubt on the usefulness of the most commonly offered academic accommodations, extended time for tests and separate test-taking rooms, for individuals with ADHD. Using a sample of university students in Canada, we aimed to examine the effectiveness of academic accommodations for ADHD by comparing the cumulative scores of students with ADHD who were accommodation users to those of students with ADHD who did not use accommodations and to those of students without ADHD. We also sought to examine the perceptions that students with ADHD have of the accommodations they use. We were unable to provide evidence to support the assumption that academic accommodations are an effective way to support the academic success of university students with ADHD. However, we found that students who had used accommodations generally considered them to be effective. We also compiled responses from participants with ADHD that describe their wishes and needs for campaigns, services and supports to help them succeed. In our discussion, we highlight several gaps that remain in the literature regarding academic accommodations and the support of students with ADHD in postsecondary education.



**Keywords** : Attention deficit/hyperactivity disorder, ADHD, Academic accommodations, Students with disabilities, student services

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# Acknowledgements

I would like to thank my research director, Dr. Christopher M Earls, for his patience, guidance and reassurance throughout my doctoral program. I would also like to thank everyone who shared my online questionnaire with others and, most importantly, all of the participants who made this study possible.

I am infinitely grateful for the many amazing people who stood by me through the many steps leading to this essay, and through my program more generally. It took all of you to support and motivate me to get through the past few years.

Some special thanks –

To Flo and Meta for your help with various parts of this project at various points in time. I don't know how I would have manage to meet many of the deadlines without your help, peer pressure, and food.

To my parents and lovely sibling, who are my unfailing cheerleaders and forever a safe place to land when I need it. I can't begin to enumerate all the ways in which you contributed to my success.

To Val, my beloved partner, for putting up with me in my most stressful moments, for literally keeping me alive when I get lost in my work, for anchoring me through my highs and my lows and for encouraging me to be, and become, my best self in every way.

To Idéfix, the dog of my life, for keeping me company throughout and for making every step of this journey sweeter with your cuddles and kisses.

# Chapter 1 – Introduction

## 1.1 Attention Deficit/Hyperactivity Disorder in Adults

Attention deficit/hyperactivity disorder (ADHD) is a condition classified under developmental disorders (APA, 2013). It is primarily defined by ongoing patterns of inattention and/or of hyperactivity-impulsivity. The inattentive cluster of ADHD symptoms is marked by difficulties related to attentional control, organization and forgetfulness among others while the hyperactive-impulsive cluster is associated with excess motor activity and an inability to control impulses. This chronic disorder is known to be associated with differences in an individual's cognitive functioning relative to the general population. The presence of ADHD appears to negatively impact executive and regulatory functions such as response inhibition, planning of action sequences and attentional processes, as well as processing speed (Nigg et al., 2002; Nigg et al., 2005; Stavro et al., 2007; L. L. Weyandt & DuPaul, 2008).

Though ADHD was once thought to affect children exclusively, it has been shown over the past decades that although a large percentage of individuals see an improvement in their symptoms with age, many of the characteristics and impairments associated with the condition tend to persist throughout the lifespan. In fact, approximately 5% of children and an estimated 2-4% of adults meet diagnostic criteria for the condition (Weibel et al., 2020). While the presentation of ADHD symptoms is known to change as the individual matures (Stavro et al., 2007; Weiss et al., 2001), the diagnostic criteria used to this day were primarily developed to identify the condition in children (L. L. Weyandt & DuPaul, 2008). As a result of the historical focus on childhood ADHD, relatively little research has been conducted on the disorder in adults as compared to children. Nonetheless, difficulties in many spheres of life have been linked to adult ADHD. These individuals have been shown to be at increased risk of psychopathology (Murphy et al., 2002), substance abuse (Klein et al., 2012), as well as dangerous driving and motor accidents (Murphy & Barkley, 1996). They also report difficulties in managing finances, keeping a tidy house, managing the responsibilities of parenthood and maintaining stable social relationships (Klein et al., 2012; Weiss et al., 2001; Weiss & Murray, 2003). Moreover, adults with ADHD have been shown to generally

have lower levels of educational and occupational attainment (DuPaul et al., 2009; Gjervan et al., 2012; Klein et al., 2012; Kuriyan et al., 2013; Weiss & Murray, 2003).

## 1.2 Students With ADHD in Post-Secondary Education

In recent years, a large increase in the number of students with ADHD has been recorded in post-secondary educational settings, making them both the fastest-growing and largest group of students with disabilities (Landry & Goupil, 2010; Pautel, 2017; Wolf, 2001). The ADHD population has been estimated to represent approximately 25% of students with disabilities (DuPaul et al., 2009). Actual prevalence rates are difficult to obtain, in part because students are not required to disclose their disability status to their institution (DuPaul et al., 2009; L. L. Weyandt & DuPaul, 2008); however, it has been estimated that between 2 and 8% of college-level students have ADHD (DuPaul et al., 2009; Green & Rabiner, 2012).

Perhaps unsurprisingly given the far-reaching effects of deficits associated with ADHD in different spheres of an individual's life, university may be a particularly taxing time for students with this disorder. Post-secondary education places particularly heavy demands on abilities and skills that are affected by the disorder such as task management, time management and sustained mental effort (Landry & Goupil, 2010; Reaser et al., 2007; L. Weyandt et al., 2013; L. L. Weyandt & DuPaul, 2008). The grading system places great emphasis on test-taking abilities which present particular challenges for individuals with ADHD (Frazier et al., 2007; Reaser et al., 2007). Indeed, studies have repeatedly shown that these students tend to have poorer grades in a university setting as compared with their non-ADHD peers (Advokat et al., 2011; Blase et al., 2009; Gormley et al., 2019; Green & Rabiner, 2012; Heiligenstein et al., 1999; Norwalk et al., 2009; Schwanz et al., 2007). Students with a diagnosis of ADHD have also been shown to be less likely than their peers to complete postsecondary education and to obtain a graduate degree (Kuriyan et al., 2013; Murphy et al., 2002). Furthermore, students with a diagnosis of ADHD have been found to report elevated levels of psychological distress, of substance abuse and of depressive symptoms (Green & Rabiner, 2012; Rabiner et al., 2008). Despite the particular struggles they face, it has been noted

that university-level students remain an understudied group within the field of ADHD (Frazier et al., 2007).

Although ADHD is often studied alongside specific learning disabilities in the context of higher education, important differences have been identified between these two populations of students. Reaser et al. (2007) investigated the experiences of students with ADHD and students with learning disabilities and found that the two groups experience similar struggles related to motivation, anxiety, information processing and self-testing. However, when compared to their peers with specific learning disabilities, ADHD students presented significantly greater impairments in the areas of concentration, time management, test strategies and selecting main ideas. Thus, it is important that the population of university students with ADHD be studied specifically.

## 1.3 Academic Accommodations for Students With ADHD

As with individuals of other age groups with ADHD, medication is considered the first line and most common treatment for university students (DuPaul et al., 2009; Landry & Goupil, 2010). However, research has failed to show an effect of psychopharmacological treatment on academic performance and other measures of adjustment to post-secondary studies in students with ADHD (Advokat et al., 2011; Blase et al., 2009; Rabiner et al., 2008). Findings to date suggest that medication alone is likely not sufficient to palliate the difficulties encountered by university students with ADHD.

In an effort to assist students with a diagnosis of ADHD or learning disabilities, universities and colleges throughout North America have developed programs of academic accommodations. Accommodations consist of modifications to the requirements or format of programs and courses that are meant to reduce or eliminate the impact of a student's disability on their academic performance. Though the measures offered vary between institutions, the accommodations offered to students with ADHD in higher-learning settings generally include time extensions for tests and assignments, note-taking services, lecture recordings, quiet test-taking spaces and the strategic use of technological tools (L. L. Weyandt & DuPaul, 2008; Wolf, 2001; Wolforth, Roberts,

et al., 2010). Surprisingly, despite the prevalence of academic accommodations for the post-secondary ADHD population, their effectiveness has received very little attention from researchers (DuPaul et al., 2009; Green & Rabiner, 2012; Jansen et al., 2017; Maće & Landry, 2012; L. L. Weyandt & DuPaul, 2008).

## 1.4 Impact of Accommodations on Grades

What little data is available on the effectiveness of accommodations for students with ADHD in post-secondary settings fails to paint a clear picture of their actual effect on academic performance. In a study comparing the experiences of students university students with and without ADHD, Gormley et al. (2019) did not find a relationship between service use, including accommodations, and students' grade point average (GPA), thus replicating findings by Wallace et al. (1999), who showed that use of supportive services is unrelated to college success. However, in both studies, accommodations were grouped with other types of services, such as career counselling and speaking with course instructors, into a single variable. Gormley et al. (2019) noted the possibility that grouping together a range of services may mask the effect of individual services such as academic accommodations.

Only one study attempted to more specifically examine whether the use of academic accommodations had a significant impact on the grades post-secondary of students living with ADHD and other learning disabilities (Trammell, 2003). Trammell recruited students from a private college in the United States who qualified for one or more academic accommodations following the disclosure of a disability. The students included in the study had been diagnosed with ADHD, a learning disability (which in this study included visual deficits, auditory deficits, numerical processing issues and dyslexia), or ADHD as well as a learning disability. In this study, students' scores on the Scholastic Assessment Test (SAT), a standardised test considered for admission to most universities in the United States, were used as a proxy for baseline GPA. The final course grades of all participants were collected at the end of an academic semester and compared to their SAT scores to investigate the effects of four accommodations on their performance: extended time to complete tests, recording classes, taking exams in a separate

room and audiobooks. The results showed that students with ADHD, with or without a comorbid learning disability, experienced a significant boost in final course grades when using each type of accommodation studied. Although the numerical values of the grade boosts reported are not included in the published article, visual inspection of the figures reveals that two of the accommodations, namely class recordings and books on tape, appear to have a greater positive impact on the final grades of students with ADHD than extended exam time and separate test-taking rooms. These results are in line with previously mentioned findings that time extensions may not be the most appropriate accommodation for students with ADHD. The results also call into question the relative effectiveness of separate testing rooms, another common academic accommodation.

It should be noted that the results of Trammell's study are limited by two important methodological weaknesses. Firstly, the findings are limited by a small sample size (n = 61) of students recruited from a single post-secondary institution, less than half of whom used accommodations in at least one of their classes. Of these 61 participants, the numbers of individuals with ADHD only and of individuals with learning disabilities and no diagnosis of ADHD are not specified, though the authors state that 11 of the participants had a dual diagnosis of ADHD and one or more learning disability. The second weakness of this study is the use of SAT scores as a baseline estimation for the outcome measure of GPA. Though the author indicated that verbal SAT scores were a reliable predictor of students' grades, there is evidence from a larger-scale study of university students with ADHD that suggests that SAT scores may not be strong predictors of GPA (Gormley et al., 2019). In theory, SAT scores could be expected to be especially poor predictors of university GPA for individuals with ADHD given that the particular demands of post-secondary settings place a heavy emphasis on abilities that are affected by the symptoms of ADHD. The method used to obtain SAT scores also was not reported, which is problematic given that self-reported SAT scores have been shown to be significantly less accurate than self-reports of GPA, and to be especially inaccurate for low-scoring individuals (Cassady, 2000). Although Trammell's study provides some evidence regarding the effectiveness of accommodations for university students with ADHD, further research using larger samples and more robust methods is needed.

## 1.5 Research on Specific Accommodations

A few studies have investigated the pertinence of commonly offered academic accommodations for postsecondary students with ADHD, while others have proposed alternative measures that may be more helpful to this student population. While more studies of academic accommodations for ADHD have been conducted with students in primary and secondary school, only studies of university-level subjects will be considered in the present review. University students necessarily represent a distinctive subset of individuals with any given condition as they must possess sufficient intellectual resources and motivation pursue higher learning. As such, findings of accommodations in other educational settings may not generalize to this specific population.

### 1.5.1 Extended time on tests

Time extensions for exams appears to be the most commonly offered academic accommodation for students with ADHD. Jansen et al. (2017) asked students with ADHD and neurotypical controls enrolled in higher education to take parallel versions of a simulated test with arithmetic, matrix reasoning and reading comprehension components, in three different time conditions: normal duration, with 33% additional time and with 50% additional time. They found that, when ADHD and control students were granted time extensions, they used the additional time, but their performance did not increase. The researchers also observed that extended time had no impact on students' use of effective test-tasking strategies such as marking key words. Similarly, in a study of college students with ADHD, extended time did not have a significant effect on the scores obtained on a math test (Wadley & Liljequist, 2013). Furthermore, a study of American college students found that the severity of ADHD symptoms was negatively correlated with the ability to benefit from extended time on a reading comprehension test (Lovett & Leja, 2015). On the other hand, other researchers found a small but non-significant positive effect of extended time on the performance university students with ADHD on a short, multiple-choice test of psychology knowledge (Lee et al., 2010).

The conclusions that can be drawn from the collection of studies cited above are limited by small sample sizes and questionable ecological validity. The controlled test-taking conditions used in many studies may also not be representative of university students' usual testing contexts where they often are evaluated on their understanding and comprehension of complex concepts acquired over several months and where learning can be influenced by a wide variety of factors from different spheres of life. Nonetheless, these studies call into question the effectiveness and appropriateness of the most commonly offered accommodation as a measure for individuals with ADHD.

### 1.5.2 Separate test-taking rooms

Two recent studies examined the effects of separate, quieter test-taking rooms, another common accommodation, on the performance of postsecondary students with ADHD. In a study by Lewandowski et al. (2021), college students with ADHD had to take a math tests in three different testing conditions: in a private room, in a group classroom setting, and in a "high-distraction" group setting in which the research team sought to create an especially high level of visual and auditory distractions. The researchers found that the high-distraction setting negatively impacted the performance of half of the students relative to the private room setting. However, they observed no significant impact of the private room setting on performance relative to the normal group setting for any of the participants. Thus, the researchers noted that higher levels of distractions than are likely to be encountered in a real classroom setting are needed to have a measurable impact on the test performance of students with ADHD. Similarly, Baeyens (2021) conducted a study in which higher education students with and without ADHD took simulated exams with math, matrix reasoning and reading components in a group setting and in a separate room setting. Results showed no added value of the separate test-taking room for participants with ADHD. The authors added that the scores of students with ADHD were lower when they took the exam in the separate room, though this difference did not reach statistical significance.

Research on separate rooms for exams as an academic accommodation fail to conclusively show this accommodation as being helpful for university-level students with ADHD. However,

Lewandowski et al. (2021) noted that there is interindividual variability in distractibility. This could mean that separate test-taking spaces may be beneficial for some students with ADHD. More research is needed in order to establish the pertinence of this academic accommodation.

### 1.5.3 Alternative accommodations

A study of another potential accommodation for ADHD, preferential seating, showed that the final grade of university students with ADHD enrolled in a psychology course was significantly higher the closer they were seated to the instructor (Clifton, 2007). Another research study showed that students with ADHD performed better on a multiple-choice test when the test was administered in a computerized format than in the usual paper-and pencil format, thus providing evidence in favor of the use of computers for exams as an accommodation (Lee et al., 2010). These findings suggest that other, more seldom used measures may be more helpful to students with ADHD who experience academic difficulties and highlight the need to investigate the effectiveness of accommodation measures offered to this population in ecologically valid settings.

## 1.6 Perceptions of Available Accommodations

As with the effectiveness of academic accommodations, little data is available concerning students' satisfaction with the accommodation measures that are available to them. However, there is evidence that less than half of students with ADHD make use of available accommodations (Chew et al., 2009; Sparks et al., 2004). When Chew et al. (2009) asked university students with a diagnosis of ADHD why they didn't make use of available accommodations, a common response was that they viewed many of them as unnecessary. A Belgian study asking higher education students with a diagnosis of ADHD to rate the perceived efficacy of a variety of academic accommodations reported that all of the accommodation measures investigated were deemed effective (Jansen et al., 2017). In Jansen et al.'s study, however, a wide range of ratings were observed for individual measures, which seems to indicate disagreement between participants as to the effectiveness of academic accommodations. Furthermore, mean ratings for different accommodations varied significantly from each other,

which suggests that all accommodations are not perceived by students as equally effective. In a survey of a broader population of students with disabilities, most students rated the accommodations offered to them as being effective, though many of the accommodations offered were rated as ineffective by 25% or more of respondents (Kurth & Mellard, 2006). In a qualitative study of the college experiences of individuals with ADHD, participants indicated that they viewed some common accommodations as beneficial; however they also noted that the accommodations offered by their institution weren't adequately suited to their particular needs (Lefler et al., 2016).

We believe that it is pertinent to further investigate the opinions students with ADHD hold of the various academic accommodations offered to them as well as the impact these accommodations can have on their performance. This is particularly crucial as many institutions employ an individualized approach to providing academic accommodations in which students have to advocate for themselves and voice their needs in terms of accommodations (Lee et al., 2008). Findings described above (Chew et al., 2009; Sparks et al., 2004) suggest that students who are dissatisfied with the accommodations offered to them may be less likely to use them and, as a result, continue to struggle academically. In this vein, authors have suggested that students' perceptions and more objective data must be considered together when making decisions about academic accommodations (Lovett & Leja, 2013). For these reasons, it may be important for institutions of higher learning to take into account the opinions of students with a diagnosis of ADHD when making decisions about the accommodations they offer.

# Chapter 2 – Aims and Hypotheses

The primary aim of the present study is to determine the impact of academic accommodations on the academic performance of university-level students who have a diagnosis of ADHD. The research currently available on this topic is sparse and the results seemingly contradictory. It is thus difficult to predict with confidence the impact of accommodations on students' grades. However, it is generally recognized by educators and higher learning institutions that accommodations would contribute to the academic success of students with ADHD. The assumption that accommodations would help the performance of students with ADHD is reflected in the widespread offer of such measures in universities across North America. In keeping with this assumption, our first hypothesis is that students with ADHD who used academic accommodations will have higher mean GPAs than students with ADHD who did not use accommodations.

Moreover, given that academic accommodations aim to compensate for the negative impacts of ADHD on academic functioning, our second hypothesis is that no difference will be found between the mean GPA of students with ADHD using academic accommodations relative to neurotypical controls without ADHD.

In a set of secondary analyses investigating the same question, we hypothesize that membership in the ADHD control group, that is, students with ADHD who do not receive academic accommodations, but not membership in the accommodation users group, will negatively associated with GPA.

The second, more exploratory aim of the study is to assess the subjective opinions held by students with a diagnosis of ADHD of the accommodations offered to them by their educational institutions. The relevant research questions are (1) whether students with ADHD believe the accommodations offered to them to be effective, (2) what are the changes that students with ADHD would like to see to the offer of academic accommodations in Canadian universities and

(3) whether students' perception of academic accommodations is related to their efficacy, as measured by the relationship between accommodation use and performance.

# Chapter 3 – Method

## 3.1 Participants

Participants in this study were recruited in several ways. Posts soliciting participation of qualifying individuals were shared on various online social networking platforms, printed copies of the recruitment poster were displayed on the campuses of a few universities and students in undergraduate psychology courses were solicited in-person to participate. Furthermore, in the hope of reaching potential participants more directly and of recruiting students from institutions in all provinces, relevant offices at 55 Canadian universities (e.g. disability services) were contacted by email to request that announcements regarding the present study be included in email newsletters or on their web page. Emails were sent between the months of July and November of 2021. Representatives from 13 institutions responded; 5 of these indicated that they would share the survey with potentially eligible students and 8 refused to share the survey, citing institutional policies.

In order to meet inclusion criteria, participants had to be enrolled in an undergraduate program at a Canadian university and have completed at least one semester of full-time study in their current program. English-speaking as well as French-speaking participants were recruited. A total of 209 responses to the online survey were obtained. Participants who failed to provide sufficient data to be included in at least one of the planned analyses were excluded from the final sample. In order to be included in the analyses, participants had to have, at minimum, provided their cumulative GPA and information necessary to assign them to the appropriate group (i.e., whether or not they had ADHD and whether or not they had used academic accommodations for ADHD). Thus, 105 responses were discarded. The final sample comprised 104 participants. Participants were divided into three groups: (1) individuals with an ADHD diagnosis who used academic accommodations for ADHD (“accommodation users”; n = 47), (2) individuals with diagnosed or suspected ADHD who did not use accommodations for ADHD (“ADHD controls”; n = 26), (3) students without diagnosed or suspected ADHD and who did not use accommodations for ADHD (“neurotypical controls”; n = 31). Within the ADHD control group, 11 participants reported having

received a formal diagnosis of ADHD by a licensed professional and 15 suspected they had ADHD but had not been formally diagnosed. The mean age of participants was 22.71 years (SD = 4.28). Of the participants, 79 identified as women (76.0%), 18 identified as men (17.3%) and 7 identified as non-binary (6.7%). Participants were enrolled in 17 different universities across four Canadian provinces. Appendix A contains key demographic data for participants within the three groups.

Individuals who had not formally been diagnosed but who suspected having ADHD were included in order to facilitate the recruitment of a sufficient number of participants for the ADHD control group. Previous research has shown that ADHD appears to be underdiagnosed in adults (Asherson et al., 2012; Hubbard, 2021; Kessler et al., 2006), and that individuals with undiagnosed ADHD who exhibit ADHD symptomatology presented significant functional and psychosocial impairments similar to individuals with a diagnosis of ADHD (Able et al., 2007; Hansson Halleröd et al., 2015; Hubbard, 2021; Wood et al., 2021). Furthermore, many barriers to diagnosis of ADHD, particularly in adults, have been cited by researchers. These include long wait times, high cost of assessment, lack of education and awareness of professionals regarding ADHD, and significant social stigma (Aranda, 2019; Brown, 2022; French et al., 2019; Hansson Halleröd et al., 2015; Pazol & Griggins, 2012; Wright et al., 2015). Many students presenting significant ADHD symptomatology who may be struggling academically could thus be unable to access services such as academic accommodations due to these multiple barriers to diagnosis.

## 3.2 Procedure

Data was collected through the use of an anonymous online questionnaire on the web platform LimeSurvey. Upon clicking the web link to the questionnaire, participants were first presented with a description of the study and its aims. They were asked to consent to participate in the study by checking a box at the bottom of the information page and proceeding to the next page. Participants were then presented with a series of three questions asking them to confirm that they meet the eligibility criteria. Individuals who met the criteria were directed to the main segment of the survey. The online survey took approximately 5-15 minutes to complete. A list of the questions included in the online questionnaire can be found in Appendix B (in English) and Appendix C (in French).

## 3.3 Measures

### 3.3.1 Use of Academic Accommodations

A list of academic accommodations that have been documented as being offered to students with ADHD or as being potentially effective for this student population was compiled based on prior research papers as well as recommendations from ADHD-related professional groups and advocacy organisations. This list of accommodations comprised: extended time for tests, extended time for assignments, separate test-taking space, noise-blocking headset, note-taking service, lecture recordings, preferential seating, lightened course load, computerized tests and exceptional use of a computer in class. Participants were asked to indicate which of the above academic accommodations they have used. They were also given the opportunity to enter any accommodations not listed that they have accessed based on their diagnosis of ADHD.

### 3.3.2 GPA

Participants were asked to indicate their cumulative GPA at the end of their last completed semester of full-time study. Given that grade reporting may differ between institutions, they were also asked to indicate the maximum GPA that can be obtained for their program. The GPA of each participant was converted into a transformed decimal score through division of the obtained GPA by the maximum obtainable GPA for that institution. Resulting transformed GPA scores for each participant vary between 0 and 1.

### 3.3.3 Perception of Academic Accommodations

Students who indicated having accessed academic accommodations were asked to rate the extent to which they perceive that accommodations had been successful in helping them succeed in their university program. Participants were asked to rate the effectiveness of accommodations on a 5-point Likert-type scale ranging from “Not at all effective (1)” to “Extremely effective (5)”.

### 3.3.4 Open-Ended Questions

All participants were asked if they had suggestions to improve the offer of academic accommodations for ADHD and were given an opportunity to add any other comments at the end of the questionnaire.

# Chapter 4 – Results

To answer the research questions, a series of analyses were performed using the statistical package SPSS.

## 4.1 Suspected and Diagnosed ADHD Controls

A two-tailed independent samples t-test was performed to determine whether, within the ADHD control group, participants with suspected ADHD ($M$ = .84, $SD$ = .11) differed significantly from those with diagnosed ADHD ($M$ = .80, $SD$ = .21) in terms of their transformed GPA scores. No significant difference was found between diagnosed and suspected ADHD controls, $t(24) = .72$, $p = .47$.

## 4.2 Between-Group Differences in GPA

### 4.2.1 One-Way ANOVA

A one-way ANOVA was performed to examine the effect of membership in the accommodation users, ADHD controls and neurotypical control groups on cumulative GPA. Levene's test for equality of variance showed that there was homogeneity of variances, $p > .05$, for the three groups. The results of the one-way ANOVA showed no statistically significant difference in cumulative GPA between the three groups ($F(2,101) = 2.78$, $p = .07$).

### 4.2.2 Descriptive Statistics

Figure 1 illustrates the mean and standard deviation of cumulative GPA scores for each of the three groups.

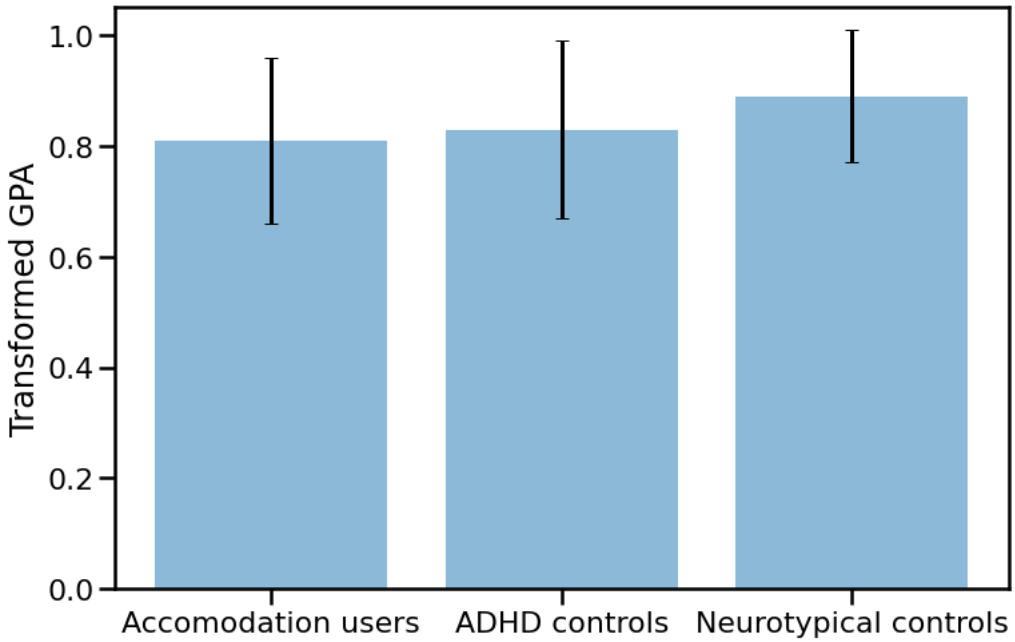


Figure 1. – Mean and standard deviation for the accommodation users (*M* = .81, *SD* = .15), ADHD controls (*M* = .83, *SD* = .16) and neurotypical controls (*M* = .89, *SD* = .12)

### 4.2.3 Pairwise Comparisons

Given that results of the one-way ANOVA performed above approached, but did not reach, significance using a conventional alpha levels of $\alpha$ = .05, we performed pairwise comparisons using independent samples t-tests to investigate whether there were between-group differences in transformed GPA scores. Independent samples t-tests were used due to their increased sensitivity, relative to the one-way ANOVA, to uncover pairwise differences.

#### 4.2.3.1 Accommodations Users and ADHD Controls

A one-tailed, independent samples t-test was performed to determine whether there were significant differences in transformed GPA between the accommodations users and the ADHD control group. No significant difference was found between the two groups, $t(71) = -.325$, $p = .74$.

#### 4.2.3.2 Accommodations Users and Neurotypical Controls

A one-tailed, independent samples t-test was performed to determine whether there was a significant difference in transformed GPA scores between the accommodations group (*M* = .817, *SD* = .151) and the neurotypical controls group (*M* = .894, *SD* = .118). Participants with ADHD who

used accommodations performed significantly worse than neurotypical controls, $t(76) = -2.38$, $p = .01$.

#### 4.2.3.3 ADHD Controls and Neurotypical Controls

A one-tailed, independent samples t-test was performed to determine whether there was a significant difference in transformed GPA scores between the ADHD control group ($M = .830$, $SD = .032$) and the neurotypical control group ($M = .894$, $SD = .118$). Participants within the ADHD control group had significantly lower scores than neurotypical controls, $t(55) = -1.74$, $p = .04$.

## 4.3 Relationship Between Group Membership and GPA

As a secondary analysis, a simple linear regression model was used to describe the relationship between membership in the three groups (accommodations group, ADHD control group and neurotypical control group) and transformed GPA score. A set of dummy variables was created to represent membership in each of the three groups. Overall, group membership approached, but did not reach, significance as a predictor of GPA, $R^2 = .052$, $F(2, 101) = 2.78$, $p = .07$. Membership in the ADHD control group did not significantly contribute to the model; however, the direction of the coefficient suggests that membership in this group would be associated with a lower GPA relative to the neurotypical control group, $b = -.07$, $SE = .04$, $p = .10$. Membership in the accommodations group was significantly associated with a lower GPA score than membership in the neurotypical control group, $b = -.08$, $SE = .03$, $p = .02$.

## 4.4 Academic Accommodations Used

Of the participants who reported having used accommodations for ADHD, 44 provided data on the specific accommodations they had accessed. Table 4.1 shows the frequency of use of the ten accommodations listed on the survey.

| | *n* | *%* |
|---|---|---|
| Extended time on tests | 43 | 97.7 |
| Separate test-taking room | 31 | 70.5 |
| Extended time for assignments | 12 | 27.3 |
| Use of a computer for tests | 10 | 22.7 |
| Note-taking assistance | 7 | 15.9 |
| Lecture recordings | 6 | 13.6 |
| Use of a computer in class | 5 | 11.4 |
| Reduced courseload | 5 | 11.4 |
| Strategic seating | 2 | 4.5 |
| Noise-blocking headset | 1 | 2.3 |

Table 1. – Frequency of Use of Individual Academic Accommodations

## 4.5 Perceived Efficacy of Accommodations

Descriptive statistics were used to examine the extent to which participants who had used academic accommodations for ADHD perceived these accommodations to be effective. Table 4.2 shows the frequency of responses to the question "To what extent do you believe the academic accommodations you have used to be effective in helping you succeed in university?". The median and modal response was "very effective".

| | *n* | *%* | *Cumulative %* |
|---|---|---|---|
| Extremely effective | 12 | 26.7 | 26.7 |
| Very effective | 15 | 33.3 | 60.0 |
| Rather effective | 11 | 24.4 | 84.4 |
| A bit effective | 7 | 15.6 | 100.0 |
| Not at all effective | 0 | 0.0 | |
| **Total** | 45 | 100.0 | |

Table 2. – Frequencies: Perceived Efficacy of Academic Accommodations

## 4.6 Responses to Open-Ended Questions

In response to the optional open-ended questions at the end of the online questionnaire, 23 participants shared comments and suggestions, which we have divided into three themes: (1) access to accommodations, (2) accommodations offered and course format, (3) other supports. A list of all responses to the open-ended questions can be found in Appendix D.

### 4.6.1 Access to Accommodations

In their responses, six (26.1%) participants noted that they perceived the process for accessing and using academic accommodations as tedious and that it could act as a barrier to accommodation use, especially due to strict deadlines requiring advance planning and to the need to request accommodations for each evaluation separately. Another barrier to accessing accommodations that was cited by eight students (34.8%) was the lack of awareness among certain faculty members regarding the struggles of students with ADHD and the role of academic accommodations, which could lead to stigmatization of students using accommodations and to refusal to implement the accommodations granted to students by disability services. In contrast, student services staff were cited as particularly helpful and well-informed by two (8.7%) of the participants, which was seen by students as a facilitating factor.

### 4.6.2 Accommodations Offered and Format of Courses

Several participants commented on the accommodations offered to them by their university. Three (13.0%) participants mentioned that accessing academic accommodations was a positive factor for their academic success and two (8.7%) participants cited the use of a separate, quiet test-taking space as particularly helpful to them. Moreover, some participants named academic accommodations that they believed would be more helpful in helping them succeed than the accommodations they had been granted. Accommodations suggested by participants included

the use of specialized software such as PDF-reading and spell-checking software, extended or flexible deadlines for assignments and lecture recordings.

Moreover, four students (17.4%) suggested that changes should be made to the format of university courses in order to make learning more accessible. The proposed changes included adding more frequent breaks during lectures, making all courses available for remote learning, and prioritising evaluation modalities that promote integration of course materials rather than memorization.

### 4.6.3 Other Supports

Eight participants' responses (34.8%) raised their need for services and supports beyond academic accommodations to enable them to succeed in university, such as access to ADHD coaching and mental health services, financial aid, student training (e.g. mindfulness training or executive function training) and pharmacological treatment of ADHD.

# Chapter 5 – Discussion

In this study, we sought to investigate the association between academic accommodations and the academic success of Canadian university students with ADHD. To this aim, we used multiple statistical approaches. Given the dearth of data currently available on the efficacy of academic accommodations for university students with ADHD, we decided to employ two sets of statistical analyses to maximize the likelihood that we would make interesting observations that would allow us to generate research questions for future studies on the topic. We hypothesized that individuals with ADHD who used accommodations would have significantly higher cumulative GPAs than individuals with ADHD who did not use accommodations, and that they would not differ significantly from controls without ADHD. Using a one-way ANOVA, we found that differences in performance between groups approached, but failed to reach, the conventional threshold for statistical significance. Using the more sensitive independent sample t-tests for pairwise comparisons, however, participants with ADHD who used academic accommodations had significantly lower GPAs than did neurotypical controls. Thus, we cannot conclude that using accommodations successfully compensated for struggles linked to ADHD aided in raising the academic performance of participants with ADHD to a similar level as that of their peers without ADHD. Moreover, we found that the academic performance of participants with ADHD who used academic accommodations was not significantly different from that of participants with ADHD who used no accommodations. Based on this, we cannot conclude that the use of accommodations by students with ADHD is associated with a significant increase in academic performance. In our sample, participants in the neurotypical controls group had significantly higher GPA scores than did participants in either of the ADHD groups, which is in line with prior findings showing that individuals with ADHD tend to have lower levels of academic achievement than do their peers without ADHD (Advokat et al., 2011; Blase et al., 2009; Gormley et al., 2019; Green & Rabiner, 2012; Heiligenstein et al., 1999; Norwalk et al., 2009; Schwanz et al., 2007).

We also tested whether membership in the accommodation users, ADHD control and neurotypical control groups was associated with variations in GPA. Group membership

approached, but failed to reach, the conventional threshold for statistical significance as a predictor of GPA. Relative to the neurotypical control group, we found membership in both groups of students with ADHD to be associated with a lower GPA; however, the results were significant only for the group of students using accommodations. Furthermore, the regression coefficients suggested that membership in the accommodation users group was associated with a lower GPA than membership in the ADHD control group. These results do not support our initial assumption that using academic accommodations would help students with ADHD perform better than their peers with ADHD who do not use accommodations. Overall, we failed to provide evidence in favour of the efficacy of academic accommodations currently offered to university students with ADHD in Canada.

Due to difficulties in recruiting a sufficient number of participants for the ADHD control group, we decided to include individuals who suspected having ADHD but who had not been diagnosed in our ADHD control group. Our results show that, within the ADHD control group, the academic performance of participants with a diagnosis did not differ significantly from that of participants without a diagnosis. These results seem to support the idea that individuals who suspect having ADHD but who do not have a formal diagnosis may function similarly to those who have been diagnosed.

## 5.1 Types of Academic Accommodations Used

In our sample, extended time for tests was, by far, the most commonly used academic accommodation; all but one of the 44 participants who provided information on the types of accommodations they used reported receiving extended time for tests. This is unsurprising and falls in line with prior literature on the topic of academic accommodations for ADHD. Also consistent with prior literature, the second most commonly used accommodation was separate test-taking rooms. All other academic accommodations were less than half as commonly used as separate rooms for tests. Although this is consistent with prior literature, we find the near-systematic use of extended time for test and separate test-taking rooms in our sample somewhat troubling given how prior studies have cast doubt on the pertinence of these academic

accommodations for students with ADHD, and how little data is available to support their use. Due to the limited variety in the types of academic accommodations used by our participants, we were unable to conduct analyses investigating the associations between individual accommodations and GPA in this study. However, we believe it crucial that more research be conducted to better establish the effectiveness of specific academic accommodations for this student population, particularly those measures that are most commonly granted.

When prompted to offer suggestions to improve the offer of academic accommodations for ADHD, participants who had used accommodations proposed specific accommodations they would have liked to have offered to them. These suggestions differed from the most widely offered academic accommodations, suggesting that the struggles experienced by these individuals may not be adequately addressed by the current offer of academic accommodations. Additional research may need to be conducted to better understand the needs of students with ADHD and other disabilities, and to assist academic institutions in offering academic accommodations that meet these needs.

## 5.2 Perceived Effectiveness of Academic Accommodations

We sought to investigate the perceived effectiveness of academic accommodations for ADHD according to students who used them. Our findings showed that more than half of participants who had used academic accommodations rated them as “very effective” or “extremely effective”, while none reported them to be “not at all effective”. Based on these findings, it appears that university students with ADHD generally consider the academic accommodations offered to them to be effective in helping them succeed academically. This is consistent with prior findings by Jansen et al. (2017) and by Kurth and Mellard (2006), who reported that the majority of students with ADHD considered academic accommodations to be effective.

One of our research questions aimed to determine whether students’ perception of the efficacy of academic accommodations was related to the difference in GPA between users and non-users. Due to the restricted ranges in students’ GPA and reports of perceived efficacy in our dataset, we were unable to perform analyses that would allow us to answer this research question. However,

it is interesting that in our study, participants seemed to consider the academic accommodations they used to be effective despite the fact that we failed to show them to be helpful in supporting participants' academic success.

It is possible that this apparent contradiction is simply due to a lack of statistical power or to a restricted range of academic outcomes within the sample, all three groups having mean transformed GPA scores above .80. However, some prior studies have also reported discrepancies between the perceptions students with ADHD had of specific accommodations and those accommodations' measurable impact on performance. Among these, Lovett and Leja (2015) found that students' perceptions of their need for extended time on a test was unrelated to the benefits gained from receiving the time extension. Similarly, participants in the study by Lee et al. (2010) cited extended time as particularly important for managing the impact of their ADHD symptoms in testing environments, despite their quantitative analyses not finding significant effects of time on performance on a test. In this same study, the majority of participants indicated that they preferred taking a multiple-choice test in paper-and-pencil format, while results showed that performance was significantly improved when the test was administered in a computerized format. Therefore, it is possible that students' perception of the effectiveness of accommodations may not reflect the actual impact of accommodations on their academic performance. In order to better support students with ADHD, it may be pertinent for future studies to investigate the relationship between students' perception of the accommodations offered to them and the actual impact of these accommodations on academic performance. If it is determined that students' perception of the usefulness of particular accommodations reflects the actual impact of those accommodations on performance, then it may be important for institutions of higher learning to take into account the opinions of students with a diagnosis of ADHD when making decisions about the accommodations they offer. Conversely, if students are unable to accurately assess the usefulness of the accommodations available to them, then it may be necessary to offer additional education and guidance to struggling students with ADHD in order to help them make appropriate decisions in this area.

Another possible explanation to the apparent contradiction between perceived efficacy and differences in GPA that are associated with the use of academic accommodations is that access to academic accommodations may fill other affective needs for students with ADHD, such as a need for reassurance or stress reduction in test-taking situations. This explanation could be consistent with prior research showing that young adults with ADHD, including those in postsecondary education, have lower levels of self-esteem and self-confidence than their neurotypical peers (Cook et al., 2014; Shaw-Zirt et al., 2005). ADHD has also been found to be associated with higher levels of test anxiety in university students, a relationship which is mediated by self-esteem (Dan & Raz, 2012). If this explanation is correct, then students' reports of perceived effectiveness may reflect the impact of academic accommodations on psychological constructs such as self-confidence and test anxiety, rather than their influence on actual performance. Then, it may be useful for researchers, clinicians and educators to consider other interventions aimed more specifically at these psychological needs and constructs. Further research will be needed to more clearly establish the interactions between academic accommodations, self-esteem and self-confidence, test anxiety and performance.

## 5.3 Considerations Beyond Effectiveness

When participants who had used academic accommodations were asked to share their thoughts and suggestions regarding the offer of accommodations, a large number of responses were centered on elements not directly linked to the accommodation measures themselves. A significant proportion of these responses raised two main obstacles to the use of accommodations: strict, tedious administrative procedures and a lack of understanding and cooperation on the part of faculty members. Based on these comments, it appears that there may be a need for universities to review the process for students to access and use academic accommodations in order to make it more accessible. If the process is too tedious, then it may serve as a barrier to accessing services that students need in order to succeed. There also appears to be a need for campaigns to educate faculty and staff as to the realities of students with invisible disabilities such as ADHD in order to enable students with disabilities feel safe and comfortable

using the accommodations available to them, and to ensure that they are in fact granted the accommodations they are deemed eligible for.

Participants also proposed systematic alterations to the way in which courses are taught which would aid in making learning more accessible to students with ADHD. We believe that such suggestions may merit consideration on the part of universities as they may contribute to making post-secondary education more accessible to individuals with other disabilities or struggles as well. Another theme that emerged from participants' responses was the need for services beyond academic accommodations to effectively support university students who are struggling due to ADHD. More broadly, these responses underline the importance of making services such as psychotherapy, assessment, financial aid and pharmacological treatment easily accessible to all students who need them so that they may be equipped to attain their educational goals. The content of such responses to the open-ended questions at the end of our questionnaire make it clear that there is a wealth of research questions, many of which are not directly linked to academic accommodations, that warrant consideration by future researchers in order to ensure that students universities with ADHD and other disabilities are adequately supported.

## 5.4 Limitations

### 5.4.1 Recruitment and Sample

Findings from this study were greatly limited by a small sample size, potentially leading to insufficient statistical power to detect differences between groups. Moreover, the small number of participants having used accommodations may also have contributed to the low variety in the types of accommodations used in our sample. Recruitment for this study proved to be more difficult than anticipated, despite our many efforts. Students with ADHD are known to struggle with a lack of motivation and with forgetfulness (Lefler et al., 2016). Thus, prospective participants may simply have lacked the motivation to complete the online questionnaire or forgotten to do so. Though efforts were made to limit the duration of the questionnaire, the content of the questions may have led participants to become too bored or discouraged to complete the entire

survey. Participants were asked to provide quite detailed academic and ADHD-related information and providing these details may ultimately have proven too effortful for many participants. The fact that more partial responses than complete responses were collected is in line with this supposition. Though the intent of collecting such detailed data was to eventually control for the greatest possible number of extraneous variables, we were ultimately unable to use most of the data as the smaller sample size called for simpler statistical models. Individuals who do not have ADHD or who do not use academic accommodations may have been even less motivated to participate in the study as this research project may not have felt personally relevant to them. Future researchers intending to conduct similar studies may like to consider offering a modest financial incentive to motivate individuals to participate. We would also recommend keeping questionnaires and other data collection measures as brief as possible.

It should be noted that the mean transformed GPA scores of participants across all three groups was surprisingly high and that variance in reported GPA was small across the sample. Thus, our sample may not be representative of the wider student population. For instance, the fact that all groups within our sample comprised in large part high-scoring students could mask differences that may be associated with ADHD symptoms and with accommodation use in the wider student population. It would be important for future studies to investigate similar questions using larger samples with more variance in GPA, such that these samples better represent the academic results of students with and without ADHD. Moreover, in our sample, participants in the ADHD control group reported higher mean GPA scores than participants with ADHD who used academic accommodations, though this difference was small and failed to reach the conventional threshold for statistical significance. This is surprising given that the use of academic accommodations is intended to improve students' ability to succeed academically. It is possible that participants who do not seek formal diagnosis or accommodations may have milder symptoms of ADHD and struggle less in university, though more research is needed to understand how ADHD symptomatology is associated with the use of services such as academic accommodations. Given these findings, we believe that it could be relevant to include a measure of ADHD symptoms in future studies seeking to understand the association between academic accommodations and academic performance for students with ADHD.

### 5.4.2 Reliance on Self-Report

Another potential limitation of this study is the use of self-report exclusively. Post-secondary students have been found to accurately report their cumulative GPA (Cassady, 2000). There is no reason to believe that self-reporting of GPA would be less accurate for students with ADHD than for the general student population. In fact, the self-reporting method has been used to collect data on GPA in prior studies of post-secondary students with ADHD (Norwalk et al., 2009; Shaw-Zirt et al., 2005). Nonetheless, it is possible that participants mis-reported their GPA, either intentionally or by mistake. In future studies, this risk could be eliminated by requesting that participants provide a copy of their academic records rather than self-reporting their grades.

Participants' ADHD status (i.e. being diagnosed with ADHD, having suspected ADHD or not having ADHD) was also self-reported. It is therefore impossible to verify that participants do, in fact, have ADHD. For participants with a diagnosis of ADHD, we cannot know on which basis the diagnosis was made, or how rigorously the individual was assessed before receiving their diagnosis. Another potential issue is that self-reported ADHD status does not provide information on the severity of ADHD symptoms or the degree to which symptoms interfere with academic functioning. The inclusion of a measure of ADHD symptomatology may have helped to mitigate these issues in part by allowing us to ensure that the participants the accommodation users and ADHD control groups experienced a clinically significant degree of ADHD-related impairments. Conversely, the inclusion of such a scale may also have allowed us to insure that participants included in the neurotypical control group did not experience significant ADHD-like symptoms.

# Chapter 6 – Conclusion

We failed to provide data in support of the assumption that the academic accommodations currently offered to students with ADHD in Canada are effective in helping them achieve higher levels of academic success. A number of methodological limitations keep us from confidently drawing conclusions from our data. At present, the literature on academic accommodations for postsecondary students with ADHD is still insufficient and the pertinence of the measures commonly offered remains uncertain. Still, we were able to make observations regarding the academic accommodations used by students with ADHD. We found that, within our sample, two types of accommodations, namely extended time for tests and separate test-taking rooms, represented the vast majority of measures granted to the accommodation users. We also found that, despite our inability to show the effectiveness of academic accommodations, participants seemed generally satisfied with the academic accommodations they used. Our findings highlight several areas and questions that warrant further investigation in connection to academic accommodations for ADHD, but also in relation with other issues related to student services and to the accessibility of higher education. It is crucial that more research investigate the impacts of different accommodations, but also consider the experiences of students with ADHD around accommodations and other services in order to ensure that these students are adequately supported in their academic endeavours. Future research in this area should employ larger samples of students with more ample variance in GPA, and should seek to control for the impact of demographic variables on GPA. Researchers wishing to conduct future research should be prepared to face challenges in recruiting university students with ADHD and should aim to find effective ways to both reach this minority student population, and to motivate these individuals to participate.

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# Appendix A – Demographics

This appendix contains several tables presenting key demographic data for participants within each group. Table 3 shows the gender distribution across the groups.

| | Accommodation users | ADHD controls | Neurotypical controls |
|---|---|---|---|
| Women | 30 | 20 | 29 |
| Men | 13 | 3 | 2 |
| Non-binary | 4 | 3 | 0 |

Table 3. – Gender distribution across the three groups.

Table 4 shows the distribution of responses to the question screening question "How many semesters of full-time studies have you completed in your current program?". The distribution of completed semesters is presented in intervals of two semesters as a year of full-time study in an undergraduate program is assumed to be equivalent to two full-time semesters.

| Semesters Completed | Accommodation users | ADHD controls | Neurotypical controls | **Total** |
|---|---|---|---|---|
| 1-2 | 10 | 10 | 11 | **31** |
| 3-4 | 12 | 6 | 8 | **26** |
| 5-6 | 14 | 8 | 8 | **30** |
| 7+ | 9 | 1 | 5 | **15** |
| Not specified | 2 | 1 | 0 | **3** |

Table 4. – Number of semesters completed, organized by group.

| Province | University | Accommodation users | ADHD controls | Neurotypical controls | **Total** |
|---|---|---|---|---|---|
| Quebec | | | | | |
| | Université de Montréal | 15 | 8 | 11 | **34** |
| | McGill University | 2 | 9 | 13 | **24** |
| | Bishop's University | 12 | 0 | 0 | **12** |
| | Université du Québec à Montréal | 3 | 2 | 3 | **8** |
| | Université Laval | 2 | 0 | 1 | **3** |
| | Polytechnique Montréal | 1 | 1 | 0 | **2** |
| | Université du Québec en Outaouais | 0 | 1 | 0 | **1** |
| | Concordia University | 0 | 0 | 1 | **1** |
| | Université de Sherbrooke | 1 | 0 | 0 | **1** |
| Ontario | | | | | |
| | University of Toronto | 4 | 2 | 0 | **6** |
| | Ontario Tech | 0 | 0 | 1 | **1** |
| | University of Waterloo | 0 | 1 | 0 | **1** |
| | Ryerson University | 0 | 1 | 0 | **1** |
| | Laurentian University | 0 | 1 | 0 | **1** |
| | Seneca College | 1 | 0 | 0 | **1** |
| Nova Scotia | | | | | |
| | NSCAD University | 3 | 0 | 0 | **3** |
| Manitoba | | | | | |
| | University of Manitoba | 3 | 0 | 0 | **3** |
| Not specified | | 0 | 0 | 1 | **1** |

Table 5. – Universities attended by participants, organized by group.

Table 5 shows the universities at which participants were registered, organized by groups. Meanwhile, Table 6 shows participant's main field of study. Similar or overlapping major concentrations and programs were combined into broader fields of study to facilitate reporting. When participants provided two or more fields of study, only the first field of study listed was considered.

| Field of study | Accommodation users | ADHD controls | Neurotypical controls | **Total** |
|---|---|---|---|---|
| Health and Life Sciences | 11 | 4 | 3 | **18** |
| Chemistry | 0 | 0 | 1 | **1** |
| Earth and Environmental Sciences | 0 | 1 | 1 | **2** |
| Mental Health and Behavioural Sciences | 14 | 14 | 18 | **46** |
| Economics | 0 | 0 | 1 | **1** |
| Communication | 0 | 1 | 0 | **1** |
| Urban design | 0 | 1 | 0 | **1** |
| History | 2 | 0 | 0 | **2** |
| Literature and Language Studies | 3 | 1 | 1 | **5** |
| Philosophy | 0 | 1 | 0 | **1** |
| Education | 6 | 0 | 1 | **7** |
| Law | 1 | 0 | 2 | **3** |
| Engineering | 0 | 2 | 0 | **2** |
| Business and Finance | 5 | 1 | 2 | **8** |
| Computer Science | 3 | 0 | 0 | **3** |
| Mathematics | 0 | 0 | 1 | **1** |
| Fine Art | 2 | 0 | 0 | **2** |

Table 6. – Participants' fields of study, organized by group.

# Appendix B – Online Questionnaire in English

This appendix contains a list of the questions that constituted the English version of the online questionnaire, with answer choices where applicable.

**Demographic Data**

1. **What is your gender?**
    a. Woman
    b. Man
    c. Non-binary
    d. Prefer not to answer or prefer a different term:

2. **How old are you currently?**

**ADHD and Mental Health**

3. **From what type of professional did your receive your diagnosis of ADHD?**
    a. General practitioner/Family doctor
    b. Psychiatrist
    c. Clinical psychologist
    d. Neuropsychologist
    e. Other
    f. Don't know

4. **How old were you when you received your diagnosis of ADHD?**

5. **Do you currently take prescription medication for ADHD?**
    a. Yes
    b. No

6. **To what extent do you believe this medication to be effective in helping you succeed in university?**
    a. Not at all effective
    b. A bit effective
    c. Rather effective
    d. Very effective
    e. Extremely effective

7. **Do you use other treatments or services to help you manage the symptoms of ADHD?**

a. Yes
b. No

8. **What other type(s) of treatment(s) or service(s) do you use?**

9. **To what extent do you believe these treatments or services to be effective in helping you succeed in university?**
    a. Not at all effective
    b. A bit effective
    c. Rather effective
    d. Very effective
    e. Extremely effective

10. **Do you have other medical, psychological or neurological condition(s) that may have an impact on your academic functioning?**
    a. Yes (please specify)
    b. No

**University Studies**

11. **At which university are you currently enrolled?**

12. **What degree does your current program of study lead to? (e.g. B.A., B. Sc.)**

13. **What is your major concentration or field of study?**

14. **How important is it for you to get good grades in your current program?**
    a. Not at all important
    b. A bit important
    c. Rather important
    d. Very important
    e. Extremely important

15. **What is your cumulative GPA at the end of the last completed semester of full-time study in your current program?**
    Cumulative GPA
    Out of a maximum of

**Academic Accommodations**

16. **Did you use academic accommodations to help mitigate the challenges caused by ADHD in your current program?**
    a. Yes
    b. No

17. **Which academic accommodation(s) did you use to help mitigate the challenges caused by ADHD in your current program?**
    a. Extended time on tests
    b. Separate test-taking room
    c. Noise-blocking headset
    d. Use of a computer for tests
    e. Note-taking assistance
    f. Lecture recordings
    g. Extended time for assignments
    h. Strategic seating
    i. Use of a computer in class
    j. Reduced courseload
    k. Other:

**Perception of Academic Accommodations**

18. **To what extent do you believe the academic accommodations you have used to be effective in helping you succeed in university?**
    a. Not at all effective
    b. A bit effective
    c. Rather effective
    d. Very effective
    e. Extremely effective

19. **According to you, to what extent are the following academic accommodations effective in helping students with ADHD succeed in university?**

| | **1. Not at all effective** | **2. A bit effective** | **3. Rather effective** | **4. Very effective** | **5. Extremely effective** | **Don't know** |
|---|---|---|---|---|---|---|
| Extended time on tests | | | | | | |
| Separate test-taking room | | | | | | |
| Noise-blocking headset | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Use of a computer for tests | | | | | | |
| Note-taking assistance | | | | | | |
| Lecture recordings | | | | | | |
| Extended time for assignments | | | | | | |
| Strategic seating | | | | | | |
| Use of a computer in class | | | | | | |
| Reduced courseload | | | | | | |

**20. Do you have any suggestions to improve universities' offer of academic accommodations for students with ADHD?**

**21. Are there any other comments you would like to share?**

# Appendix C – Online Questionnaire in French

This appendix contains a list of the questions that constituted the French version of the online questionnaire, with answer choices where applicable.

**Données démographiques**

1. **Quel est votre genre?**
    a. Femme
    b. Homme
    c. Non-binaire
    d. Je préfère ne pas répondre ou je préfère un autre terme :

2. **Quel âge avez-vous au moment de remplir ce questionnaire?**

**TDAH et santé mentale**

3. **De quel type de professionnel avez-vous reçu votre diagnostic officiel de TDAH?**
    a. Médecin généraliste/Médecin de famille
    b. Psychiatre
    c. Psychologue clinicien
    d. Neuropsychologue
    e. Autre
    f. Ne sais pas

4. **Quel âge aviez-vous lorsque vous avez reçu votre diagnostic de TDAH?**

5. **Prenez-vous actuellement un médicament prescrit pour le TDAH?**
    a. Oui
    b. Non

6. **À quel point considérez-vous que cette médication soit efficace pour vous aider à réussir à l'université?**
    a. Pas du tout efficace
    b. Un peu efficace
    c. Assez efficace
    d. Très efficace
    e. Extrêmement efficace

7. **Avez-vous recours à d'autres traitements ou services pour vous aider à gérer les symptômes du TDAH?**
    a. Oui
    b. Non

8. **À quel(s) autre(s) type(s) de traitement ou de services avez- vous recours?**

9. **À quel point considérez-vous que ces traitements ou services soient efficaces pour vous aider à réussir à l'université?**
    a. Pas du tout efficace
    b. Un peu efficace
    c. Assez efficace
    d. Très efficace
    e. Extrêmement efficace

10. **Avez-vous une autre ou d'autres condition(s) médicale(s), psychologique(s) ou neurologique(s) pouvant avoir un impact sur votre fonctionnement académique?**
    a. Oui (veuillez préciser)
    b. Non

**<u>Études universitaires</u>**

11. **À quelle université êtes-vous présentement inscrit(e)?**

12. **Vers quel diplôme votre programme d'études actuel mène-t-il? (ex. B.A., B. Sc.)**

13. **Quelle est votre concentration majeure ou domaine d'études?**

14. **À quel point est-il important pour vous d'obtenir de bonnes notes dans votre programme actuel?**
    a. Pas du tout important
    b. Un peu important
    c. Assez important
    d. Très important
    e. Extrêmement important

15. **Quelle est votre moyenne cumulative à la fin de votre dernier trimestre d'études à temps plein complété dans votre programme actuel?**
    Moyenne cumulative
    Sur un maximum de

**Mesures d'accommodement**

16. **Avez-vous eu recours à des mesures d'accommodement pour vous aider à pallier les difficultés causées par le TDAH dans votre programme actuel?**
    a. Oui
    b. Non

17. **À quelle(s) mesure(s) d'accommodement avez-vous eu recours pour vous aider à pallier les difficultés causées par le TDAH?**
    a. Temps supplémentaire pour les examens
    b. Local à part pour les examens
    c. Utilisation d'un casque anti-bruit
    d. Utilisation d'un ordinateur pour les examens
    e. Aide à la prise de notes
    f. Enregistrement des cours
    g. Temps supplémentaire pour les travaux
    h. Allocation stratégique des places en cours
    i. Utilisation d'un ordinateur en cours
    j. Réduction de la charge de cours
    k. Autre

**Perception des mesures d'accommodement**

18. **À quel point considérez-vous que les mesures d'accommodements auxquelles vous avez eu recours soient efficaces pour vous aider à réussir à l'université?**
    a. Pas du tout efficace
    b. Un peu efficace
    c. Assez efficace
    d. Très efficace
    e. Extrêmement efficace

19. **Selon vous, à quel point les mesures d'accommodement suivantes sont-elles efficaces pour aider les étudiants avec un TDAH à réussir à l'université?**

| | **1. Pas du tout efficace** | **2. Un peu efficace** | **3. Assez efficace** | **4. Très efficace** | **5. Extrêmement efficace** | **Je ne sais pas** |
|---|---|---|---|---|---|---|
| Temps supplémentaire pour les examens | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Local à part pour les examens | | | | | | |
| Utilisation d'un casque anti-bruit | | | | | | |
| Utilisation d'un ordinateur pour les examens | | | | | | |
| Aide à la prise de notes | | | | | | |
| Enregistrement des cours | | | | | | |
| Temps supplémentaire pour les travaux | | | | | | |
| Allocation stratégique des places en cours | | | | | | |
| Utilisation d'un ordinateur en cours | | | | | | |
| Réduction de la charge de cours | | | | | | |

**20. Avez-vous des suggestions pour améliorer l'offre de mesures d'accommodement aux étudiants avec un TDAH par les universités?**

**21. Y a-t-il d'autres commentaires que vous aimeriez ajouter?**

# Appendix D – Responses to the Open-Ended Questions

There were two open-ended questions which were found at the end of the online questionnaire. Answering these was marked as optional, thus not all participants who completed the survey responded to them. The table below contains the responses obtained to the open-ended questions, in their original language. Responses meant to indicate an absence of comments only, such as “no” or “nothing”, were not included. The remaining responses were not edited, nor were they screened for relevance.

| Questions | Participant ID | Responses |
|---|---|---|
| Do you have any suggestions to improve universities’ offer of academic accommodations for students with ADHD? | 8 | Faciliter les processus de demande pour chaque examen qui génèrent un grand stress face aux date limites très strictes |
| | 13 | Mettre en mesure des règlements qui exigent aux professeurs d'être plus flexibles avec les personnes atteintes d'un TDAH, notamment pour demander du temps supplémentaires pour la charge de cours. Je suis une personne qui est à son affaire et prend ses études au sérieux, mais je ne suis jamais à l'abris d'une mauvaise "passe" où j'aurais - ce que j'appelle personnellement - une crise. Je peux avoir 1 semaine entière ou mon cerveau est complètement bloqué. Je peux appliquer mes stratégies mais tout de même ca demande un délai, auquel les profs ne sont pas nécessairement sensibles (même dans un programme |

de Psychologie...). Autrement, avoir accès à des spécialistes/éducateurs/ psychologues sur le long terme pour les personnes ayant un TDAH ( ou autre diagnostic même...) qui serait abordable, et non seulement 12 semaines. On sait aujourd'hui que la comorbidité est élevée, et que quelqu'un qui a un TDAH a souvent un trouble anxieux, sur le spectre de l'autisme, la dépression, ou/et tout autre diagnostic, ce qui implique un besoin criant de soutien par des spécialistes (qui n'est pas toujours accessible financièrement, puisque les gens diagnostiqués sont aussi dans une tranche socioéconomique plus faible la plupart du temps). De plus, permettre des études en comodal même hors covid serait un énorme plus, puisque (personnellement évidemment) je trouve plus facile de me concentrer chez moi, alors que je n'ai pas à gérer les transports, les personnes en retard, les bruits ambiant, etc. Sans parler de l'impact économique autour du transport (je ne peux pas travailler plus que 8h semaine lors de mes études et autrefois je n'Avais pas les ressources que j'ai actuellement et je devais travailler 20h et plus pour payer mon logement. Ce qui ne me permettait pas d'avoir une cote aussi élevé qu'actuellement. J'ai passé de 2,6 à 3,9 en ayant la chance d'Avoir un père qui me fournit un endroit ou vivre. Je ne peux en dire autant pour les autres. Le TDAH n'est d'ailleurs plus considéré comme un handicap pour l'aide financière aux études, tout comme l'autisme. Un grand recul selon moi) Bien que je me doute que la vraie

| | |
|---|---|
| | vie implique qu'il y ait ces désagréments, en soi je trouve que ce serait une belle forme d'accomodation lors des études :-) |
| 16 | Le centre d'aide aux étudiants de l'université est très utile. Ce que j'apprécie vraiment, c'est que pour la plupart, ce sont eux qui interagissent avec mon département (voir le commentaire ci-dessous). Un ajout utile à leur programme serait d'être jumelé avec un camarade de classe pour s'assurer que nous ne manquons aucune instruction dans les cours en raison de notre inattention « occasionnelle ». |
| 21 | Oui, ne pas forcé un changement de méthode d'accomodation qui était fourni au CÉGEP ou simplement refusé d'accordé des mesures d'accomodations malgrés que ses méthodes était employé au CÉGEP |
| 28 | It would be cool if they actually gave me extensions on assignments. They would tell me I can get extensions and then when I hand it in late they would be like "No, you have to submit on time" which I would've done if they didn't promise me that I could submit it later. This happens all the time |
| 29 | Definitely screen reading/pdf reading technologies to help with textbook reading load. Mandatory breaks |

| | |
|---|---|
| | every 30 minutes. Personal small white board with markers for note taking. Fidgets. |
| 35 | Courses designed to educate oneself about coping and learning with their disability. |
| 43 | Mindfulness training |
| 46 | L'allocation de locaux à part pour faire les examens aide énormément à la réduction du bruit et des stimulis extérieurs qui engendrent fréquemment la déconcentration. Cependant, il nous est impossible de consulter nos professeurs dans le cas où nous avons des questions étant donné que les locaux sont souvent situés loin, voir dans un bloc différent d'où se trouve le professeur et les autres élèves. |
| 50 | Awareness among teachers & other members of faculty; some teachers don't understand/ are less willing to provide accommodations, making the process difficult &/or stressful at times. Also, neurodivergent individuals in general have issues with executive functioning skills, I believe it beneficial if there were specific programmes, or more personalized accommodations (ex: having a more hands-on involvement from your accommodations counsellor ) to help students develop these skills/ or help & organize weekly obligations. It would help students succeed |

| | |
|---|---|
| | their current courses, and develop essential skills in their lives. |
| 53 | I think one of the services that I am currently using EADP, is offered by the Government of Manitoba. I have actually found it extremely effective in keeping me motivated, and engaged in my learning. If has given me a sense of purpose, and shifted the locus of control back to me. I would say that my experience with ADHD and the workplace was extremely difficult, and that difficulty created additional barriers to my educational goals and attainment. While having services such as EADP within the educational framework may not be feasible, any/all effective methods of raising students engagement with their courses/program and building trust with the community of educators, students, and staff, have been a safe-haven for me...as they should be for all. |
| 56 | At my university, extended time for assignment is not offered, but I believe it would be more valuable than offering extended times for exams. I have issues LEARNING the MATERIAL, NOT REINTERATING the MATERIAL later on a test. I have also found that applying knowledge gained in my studies via assignments, lab reports, project, etc. have been more meaningful and effective than simply learning the material and writing a multiple choice exam. Extended |

| | |
|---|---|
| | time after the fact does little to help me learn the material required to succeed. My ADHD symptoms are extreme and nature and the format of university inhibits my ability to learn effectively. It is physically uncomfortable for me to sit still for extended periods of time and listen to anyone talk. I have an attention span of a maximum of 20 minutes. Lectures are at least double that length, and I struggle with maintaining focus when I am physically uncomfortable and just want to move around. I often miss important points mentioned in lectures, and if no written material is provided via detailed notes/textbook for reference I am lost. One benefit of COVID was that most of my lectures were recorded via zoom or webEx, which allowed me to review the video later to catch the important points I missed. I am concerned about losing this when we return to campus in the winter term, and think universities should consider keeping the online class option as it improves accessibility for many students. |
| 59 | No late penalties on assignments. |
| 63 | Better support for mental health issues, how to deal with professors regarding accommodations |
| 64 | I think sometimes it's not just about the types of academic accommodations offered, but rather having access to it. For example, students with ADHD are not good with handling admin stuff (eg. applying for the |

| | |
|---|---|
| | extended time on tests), but if we have to key in the dates manually to apply for it (at least for UofT it's 2 weeks in advance), it becomes tedious and something I might put off and end up not being able to use the accommodation even though I do need it to succeed. So an automated system that integrates all of the accommodation requests would be good. |
| 71 | Il faudrait adapter les accommodements dans le cadre de stages, lorsqu'on n'est plus en contexte « de classe ». |
| 73 | Sensibiliser les chargés de cours et professeurs aux mesures d'accommodements. On m'a également proposé de faire des cartes heuristiques pour résumer mes notes de cours, mais on n'a pu me suggérer de logiciel gratuit ou m'aider à intégrer cet outil. **J'ai oublié mon accommodement pour faire des travaux d'équipe en équipe réduite qui est devenu seule cette session sans que je ne le demande. J'ai aussi accès aux notes de cours à l'avance (présentations powerpoint/lectures); qui est un accommodement très utile puisque je retranscris mes notes dans OneNote, organisées par sessions, subdivisées en cours, avec une page par séance avec des pages pour les lectures et devoirs reliés aux cours.** |
| 95 | Je trouves qu'il y a eu une grande amélioration avec l'accessibilité du site pour la réservations des examens, |

| | |
|---|---|
| | mais je trouve que réserver 21 jours à l'avance, c'est beaucoup. J'ai déjà manqué la date de 2 jours et je n'ai pas pu avoir mes mesures adaptatives. 2 semaines à l'avance serait plus adéquat selon moi. J'aimerais également qu'il soit possible pour le surveillant d'examen de communiquer en message direct avec l'enseignant si nous avons des questions en lien avec l'examen. |
| 103 | Make sure all instructors are aware of the importance of accommodations for students with ADHD and all disabilities. Some teachers are dismissive and have made me feel guilty or wrong for my needs. |
| 109 | I don't know as I haven't used them. I guess something like a spellcheck software would help |
| 130 | Pour être efficace, elle doit permettre à l'étudiant d'avoir accès au même contenu. L'allègement de la matière n'est donc pas envisageable à mon sens. À mon sens, la répartition des élèves en sous-groupes pour réduire les stimulis devrait être un automatisme pour aider les TDAH officiels et non diagnostiqués. |
| 138 | Believe your students. If a student is struggling and knows that something could help them, don't let them down by requiring them to fill out paperwork that is honestly really difficult for some students with ADHD (like me) to finish. So many students with ADHD don't |

| | | |
|---|---|---|
| | | have access to professional diagnosis for a multitude of reasons (lack of support from family; misdiagnosis, especially for AFAB people; financial barriers; etc.), and this puts students with ADHD in a more difficult situation compared to their neurotypical peers. The least that a university can do, I think, is accept self-diagnosis as a valid pre-requisite for academic accommodations. Maybe there could be some sort of "test" drawn up by professionals if the institutions still want some form of "proof" for their own records. |
| Are there any other comments you would like to share? | 13 | J'apprécie qu'une telle étude soit faite, le TDAH est étudiée mais tout de même pas assez. Les préjugés sont forts. Mais le soutien grandement apprécié. Merci de votre temps :-) |
| | 16 | Je pense qu'il serait très utile que les centres d'aide aux étudiants sensibilise les directeurs et le personnel/proffesseurs de leurs universités aux troubles d'apprentissage (Surtout en ce qui concerne le fait que nos accomodement est une question d'équité et non un moyen de "tromper" le système). J'étudie la médecine et j'ai rencontré BEAUCOUP de stigmatisation de la part de mon directeur de programme, qui est lui-même médecin (l'une des rares personnes de mon département avec qui j'ai eu à interagir concernant mon TDAH). Cela a grandement influencé ce que je divulgue sur mon handicap et l'aide que je finis par ne pas demander, parce que j'ai peur des récriminations. Le directeur sera chargé de rédiger |

une lettre de recommandation pour mon placement dans mon future programme de résidence. Compte tenu de son attitude envers les gens comme moi, je ne suis pas très optimiste quant au contenu de cette lettre.

21 Je dis par exemple que la mise en place des mesures au cours de mes 3 premiers trimestres était incertaine. La raison à cela est que mes mesures d'accommodation m'ont été accordées seulement en décembre de mon premier trimestre, et elles étaient inutiles comparer à celle qui m'était offerte précédemment au CÉGEP. Il m'a pris plus de 2 trimestres et demi pour finalement avoir des mesures acceptables et pratiques, sachant que l'année d'après, on a essayé d'encore réduire mes méthodes d'accommodation, ce que j'ai encore une fois empêché. Personnellement, la différence entre ma moyenne générale lors de mes quatre premiers trimestres comparés à celle de mes quatre derniers, où mes méthodes d'accommodements était finalement adéquates, est impressionnante (d'un 1,94 à un 3.1).

28 The ADHD medications will help with school and only school. The rest of the effects are negative. Cons: Shrunken penis, less appetite, anxiety (for me in the day), depression (for me at night), Irritability, less sleep, chest pain, dehydration, erectile dysfunction, sore muscles and other weird stuff. Pros: I can do a lot of homework at the peak of the medication high.

Medication has to be the #1 course of treatment. ADHD
29 coaching should be second. Once on medication the only accomodations I needed were the screen reader and note taking. I didn't need note taking, didn't need extra time, didn't need a separate room.

I think that the accomodations I had were a good
32 balance between having too much accomodation and not enough. I think it was the right amount, I also have access to cumputer because I am dislexic and dysortographique

Les personnes travaillant au service d'accommodations
46 sont, pour la plupart, bien informés sur le TDAH, permettant une meilleure compréhension de leur part. Cependant, les professeurs peuvent souvent manquer de connaissances à ce sujet, les rendant insensibles et peu compréhensifs.

In line with what's said above, I believe individuals
50 diagnosed with ADHD/ADD should not only be offered treatment via medication but also with a psychologist/ social worker/ counsellor - a qualified therapist. Medication helps relive the symptoms and facilitates task completion/ organization, but it doesn't address the problems the person faces with executive functioning skills and more (their other symptoms not addressed by amphetamine treatment). A lot of us

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| | (apologies for the generalization) need to "learn" how to do these things. Thank you! |
| 53 | While not an 'official' treatment I've found that exercising in the morning is a good way to check in on my emotional and mental health for the day. If my ADHD symptoms show up during this time, I can hopefully cut myself and others some slack. |
| 56 | While universities' claim to be committed to diversity and inclusion on campus and making education more accessible to all, I feel that my university is seeking students that check the necessary boxes that allow them to say that they have a diverse student population but do not require additional financial investments or meaningful accommodations that will allow them to reach their potential. In order for universities to truly become more inclusive to non-traditional university students, it is time they recognize that this requires changing the system itself. All the extended time on tests will not change the fact that I learn best by doing, not by sitting in a chair listening to someone lecture for 50 minutes, memorize the material and regurgitate it 2.5 months later. By keeping this format and not being open to changing the way education is delivered, it will never be truly accessible to anyone other than those that CAN learn in this way. |

64 I am not sure if there is any standardization in the accommodations provided in the universities in canada, perhaps it would be helpful if the schools learnt from each other based on student feedback?

73 Les accommodements peuvent être bien, mais lorsqu'ils ne sont pas respectés par les enseignants, c'est frustrant et cela cause beaucoup d'anxiété. Il serait pertinent d'offrir des formations aux étudiants et aux enseignants. D'enseigner aux étudiants des méthodes de prise de notes, des méthodes organisationnels, les former à utiliser des logiciels pouvant les aider ce serait pertinent. De même, pour les chargés de cours, comprendre la réalité des étudiants ayant des accommodements et les amener à les accepter sans qu'il y ait un jugement péjoratif rattaché. La confidentialité également devrait être préservée; à titre d'exemple, une enseignante a déjà dit en cours que j'avais droit aux enregistrements, car j'étais plus lente que les autres pour comprendre, alors que je comprends très rapidement, mon problème est au niveau de l'attention. Les enregistrements sont d'ailleurs un accommodement très laborieux (time consuming). S'il y a des trous dans les notes prises, réécouter les enregistrements pour avoir les informations manquantes peut prendre beaucoup de temps (au moins avec OneNote, les enregistrements suivent les notes; mais il faut le savoir que cet outil

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| | | existe et savoir l'utiliser efficacement pour l'utiliser et qu'il soit utile). |
| | 95 | Je suis contente de pouvoir bénéficier de ses mesures. Cela m'enlève un gros poids sur les épaules. Personnellement, un local sans distraction fait toute la différence. |

Table 7. – Responses to Open-Ended Questions