Adult ADHD in Motion: Workplace Physical Activity and Improved Occupational Outcomes for Adults With ADHD

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Jillian Conway

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Abstract

This correlational study was designed to investigate the goodness of fit of varying occupations dependent on their activity level for adults with ADHD. Previous research surrounding physical activity and ADHD has suggested that physical activity may help increase the management of cognitive symptoms associated with this disorder in children however this research has not been extended into the adult ADHD population. To address the existing gap in research, this study examined whether permitted or required occupational physical activity influenced three specific occupational outcomes for adults with ADHD: wage loss, job satisfaction and number of job changes. It was hypothesized that adults diagnosed with ADHD who are employed in physical occupations would report (1) hourly wages closer to the national average for their specific occupation, (2) greater job satisfaction and (3) fewer job changes in the previous five years than adults with ADHD employed in sedentary jobs. Participants were recruited online through Amazon Mechanical Turk and were required to be over the age of 25, employed full-time and a resident of the United States. All potential participants first completed an online survey which included the Adult ADHD Self-Report Scale Screener to identify individuals who likely met the diagnostic criteria for adult ADHD. These identified individuals were then granted access to the online study survey which included a measure of job satisfaction and demographic questions (i.e. age, gender, ethnicity, highest level of education, current hourly wage, current occupation, number of job changes over the past five years and whether or not they have a current diagnosis of a psychological disorder

other than ADHD). The results indicated that adults with ADHD experience less wage loss when employed in a physical versus sedentary occupation. There was no significant difference in job satisfaction or number of job changes in the last five years between the physical and sedentary occupational categories. The findings of this study provide preliminary evidence that the child research on movement and the management of cognitive symptoms extends into the adult population.

Keywords: attention deficit hyperactivity disorder (ADHD), adult, occupational outcomes, physical activity

Dedication

I dedicate this thesis to my parents, Donna and Douglas Conway. I sincerely appreciate not only the support and encouragement you have provided me with but also all the joy you bring to my life. From the bottom of my heart: thank you.

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Chapter I

Introduction

Attention Deficit / Hyperactivity Disorder (ADHD) is a highly prevalent behavior disorder characterized by inattention, hyperactivity and impulsivity that begins before age 12 and persists throughout the lifespan (Gjervan et al., 2012; Miklósi et al., 2016; Volkow & Swanson, 2013). It has been estimated that between 3.4% and 5% of adults continue to meet the diagnostic criteria ADHD (Doshi et al., 2012; Fried et al., 2012; Gjervan et al., 2012; Graaf et al., 2008; Kessler, Adler, Ames, Barkley, et al., 2005). With the recognition that ADHD persists into adulthood, diagnostic criteria outlined by the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) includes symptoms such as difficulty following instructions or completing tasks within the workplace to better capture adult experiences (Lasky et al., 2016; Ukaan, 2013).

ADHD in Adults

ADHD is characterised by high levels of impulsive, hyperactive and inattentive behaviours however, the presentation of ADHD symptoms in adults typically differs from that in children. The clinical profile of ADHD appears to evolve over the course of development (Kessler et al., 2010; Ukaan, 2013; Volkow & Swanson, 2013). A study conducted by Kessler et al. (2010) followed 300 adult Americans who had been diagnosed with ADHD as children, tracking their current symptoms. Consistent with

previous research, 45.7% of the adults within this study continued to meet the criteria for ADHD. Further, the results of this study determined that, within persisting cases of ADHD, symptoms of inattention were significantly more prevalent than symptoms of hyperactivity or impulsivity among the adults studied (Kessler et al., 2010).

Inattention may influence an individual's ability to complete a variety of job related tasks such as meeting deadlines, paying bills, listening to/following instructions and being on time. Therefore, it is not surprising that adults with ADHD experience higher unemployment rates, more frequent job changes, increased likelihood of holding multiple concurrent jobs, more interpersonal problems, and lower levels of academic achievement and job satisfaction than other similar aged adults (Fried et al., 2012; Miklósi et al., 2016; Ukaan, 2013; Volkow & Swanson, 2013). Gjervan et al. (2012) examined the effects of functional impairments arising from ADHD on the occupational outcomes of 149 Norwegian adults with a ADHD diagnosis, confirmed by their medical records. Participants completed self-report questionnaires to assess current sociodemographic characteristics and ADHD symptoms. Consistent with previous research, Gjervan et al.'s (2012) survey indicated that adults with ADHD had lower levels of academic achievement and poorer occupational outcomes in comparison to the national average. Specifically, the highest level of education of over half of the sample studied was too low to successfully obtain most any of the available jobs in Norway. Further, only 22% of this sample reported wages (i.e. not social, disability or financial assistance) as their primary source of income. Additionally, from the results of the self-report measure of ADHD, it was determined that symptoms of inattentiveness had significantly greater negative correlations with occupational outcomes than the symptoms

of hyperactivity (Gjervan et al., 2012). Therefore, not only are symptoms of inattention wildly prevalent in the adult ADHD population, they are a key aspect of occupational impairment.

Effects of Adult ADHD on Employment

In order to quantify the occupational impairment faced by adults with ADHD, Fletcher (2014) conducted a statistical analysis of the data from the ADD Health study, an American longitudinal study. This study collected data from individuals throughout grades seven to twelve and measured a variety of outcomes at approximately age 30. His results indicated a reduction in labour market participation (i.e. unemployment) of 10%, 33% reduction in earnings and 15% increase in social assistance for adults with ADHD in comparison to their controls. Decreased earnings and labour market participation were found to be correlated with the age of diagnosis of symptoms, with an earlier age of diagnosis associated with higher rates of unemployment and lower salaries (Fletcher, 2014).

To further assess the reduced labour market participation of adults with ADHD, Graaf et al. (2008) administered a questionnaire to screen for ADHD along with a disability assessment questionnaire to 7075 employed adults across 10 different countries. The results clarified that this reduction in labour market participation may arise due to a combination of missed work, decreased work quantity and decreased work quality. Further, consistent with previous research, their findings indicated a lower prevalence of ADHD among professionals versus blue collar workers. Graaf et al. (2008) attributed this to ADHD interfering with cognitive performance resulting in a selection bias against success in a professional career. It is therefore important to recall that while

the decreased prevalence of ADHD within professional occupations could be interpreted to suggest that these careers are better suited for these individuals, this is likely an erroneous conclusion. The decreased prevalence of ADHD in professional occupations is therefore likely rather the result of individuals with ADHD seeking or being limited to non-professional careers due to their symptoms and/or decreased education. Regardless of reasoning however, individuals with ADHD in professional occupations continue to earn less than their non-afflicted counterparts (Biederman, 2006).

In general, both the quality and quantity of work an individual is able to complete is dependent on good basic skills including literacy, communication skills, writing ability, computer skills and cognitive skills (time management and problem solving) Fried et al. (2012). Unfortunately, symptoms of ADHD appear to create difficulties with these tasks for adults. In order to identify the underlying causes of their difficulties with these tasks, Fried et al. (2012) examined 56 young adults with ADHD in a 10-hour laboratory work simulation. They relied on both subjective and observer reports of ADHD symptoms during these 10 hours. Participants were required to complete work in both structured and unstructured settings that entailed video observation, math computation, lecture observation, reading comprehension and editing. During all tasks, participants reported symptoms of internal restlessness, intolerance of boredom and inattention (Fried et al., 2012). Interestingly, the observers rarely reported participant difficulty with restlessness, indicating that the participants likely internalized this symptom. This finding was interpreted to suggest that individuals with ADHD may appear less anxious on the outside but are struggling internally with restlessness, here categorized as a symptom of hyperactivity (Fried et al., 2012). This, combined with the inattention symptoms, could

result in poor job performance and eventual job failure (Fried et al., 2012). This study highlights that while symptoms of inattention are most prevalent in the adult ADHD population, hyperactivity (here characterized as restlessness) remains a significant and disabling symptom.

Managing Symptoms of ADHD with Movement

In order to address and accommodate the symptoms of hyperactivity and restlessness associated with ADHD, recent research has explored the effects of exercise and movement on the functional outcomes of individuals with ADHD. Previous research has suggested that exercise may be beneficial for executive functioning within the general population (Verret, Guay, Berthiaume, Gardiner, & Béliveau 2012). Given that individuals with ADHD commonly encounter difficulties with a variety of areas involving executive functioning, including inattentiveness, organizational difficulties and problem solving, this research has begun to expand into assessing the effects of exercise on the executive functioning of individuals with ADHD (Verret et al., 2012). While this research has primarily involved children with ADHD, the findings may be beneficial to adults. Verret et al. (2012) recruited 10 children with ADHD to take part in a 10-week long exercise program at school. The children were required to complete an instructed 45-minute exercise period at lunch time, three times a week. The children's parents and teachers completed a questionnaire assessing the social competences and behavioural problems of the child both before and after the exercise program trail. Additionally, the children completed pre- and post-test measures of visual and auditory attention. In comparison to the non-exercising control group (11 children with ADHD), children in the experimental group demonstrated increased information processing and sustained

attention following the 10-week trial. Further, their parents and teachers reported decreased social difficulties, thought problems and attention problems (Verret et al., 2012).

A similar study examined the effects of motor activity on the cognitive control of children with ADHD (Hartanto et al., 2016). The activity level of 44 children was monitored electronically by an actometer on their ankle while they completed a timed, stimulus-response task. The researchers reported that the children with ADHD demonstrated increased intensity of movement in comparison to typically developing children while correctly completing a task trial. Interestingly however, the children with ADHD's motion intensity did not differ from the control group on incorrect trials. This finding suggested that during tasks requiring increased cognitive resources (i.e. correctly completing a timed stimulus-response task), cognitive control may be enhanced through more intense movement. The researchers speculated that children with ADHD may utilize movement in order to self-regulate alertness (Hartanto et al., 2016).

Given this data, Sarver et al. (2015) further examined hyperactivity in children with ADHD to determine whether this behaviour was truly an impairment or if it was rather a compensatory behaviour. The concept that hyperactivity may be a compensatory behaviour is based on previous research suggesting that individuals with ADHD suffer hypoactivity in the frontal and prefrontal cortical regions of the brain, areas which are associated with cognitive activities such as working memory and executive functioning (Sarver et al., 2015). Due to the decreased arousal of these areas of the brain, it has been hypothesized that individuals with ADHD may utilize motor activity to increase activity in their central nervous system during cognitively challenging tasks. In this study, 29

children with ADHD and 23 typically developing children were required to complete a variety of working memory tasks on four separate occasions. Ceiling-mounted video cameras recorded the gross motor activity and attentive behaviour of the children during each assessment. Trained observers coded each child's behaviour during each assessment. Therefore, each child's working memory, attentive behaviour and gross motor activity was assessed and recorded during each task. Sarver et al. (2015) discovered that increased motor activity within the sample of children with ADHD was predictive of increased working memory, while the reverse trend was observed for typically developing children. In this study, motor activity was demonstrated to improve the working memory. Thus, motor activity apparently facilitates rather than impairs cognitive activity (Sarver et al., 2015).

These studies indicate that the hyperactive symptoms of ADHD may have a regulatory role in managing cognitive symptoms, such as attention. It is important to recall that the most prevalent symptom of ADHD in adults is inattention but that hyperactivity may still be present in the form of internalized restlessness. Children with ADHD have been demonstrated to attend to and perform better on cognitive measures while exhibiting increased movement, utilizing their hyperactive symptoms to regulate their cognitive symptoms (Hartanto et al., 2016; Sarver et al., 2015; Verret et al., 2012). Given that most jobs require significant cognitive activity (i.e. attention, working memory, time management), movement may assist adults with ADHD better manage their cognitive symptoms, especially in the workplace where cognitive demands are highest.

Occupation Specific Goodness of Fit for Adults with ADHD

There is increasing evidence to suggest that physical activity can improve brain functioning throughout adulthood (Ratey & Loehr, 2011). Physical activity has been found to influence cognition through the neural systems involved in learning, memory and attention, by priming them for efficient functioning (Ratey & Loehr, 2011). One single bout of exercise (i.e. 30 minutes of running) has been demonstrated to improve automatic cognitive functions (i.e. reaction time) and performance on higher-order cognitive processes for normal adults (Ratey & Loehr, 2011). Short-term exercise programs have been found to similarly ameliorate cognitive flexibility and working memory while long-term exercise programs have the ability to improve an typical adult's executive functioning, information processing and decision-making (Ratey & Loehr, 2011). Physical activity also has a protective effect on the negative cognitive changes associated with aging (Ratey & Loehr, 2011). In general, regular physical exercise appears to improve cognitive functioning in adults, an effect that persists throughout the human lifespan.

The positive effects of physical activity however have not been examined within the adult ADHD population. Nadeau (2005) has identified goodness of fit as a strong external resilience factor to increase occupational functioning for adults with ADHD. Goodness of fit refers to how well suited an individual is for a job based on how well his or her strengths / weakness, interests and cognitive functioning match those required by the job (Nadeau, 2005). Similarly, Weiss et al. (2008) noted that adults with ADHD may attempt to locate work environments that best suit their skills and may be attracted to jobs

involving increased stimulation, movement / physical activity, control or social requirements.

Despite the likelihood that occupational outcomes may be related to goodness of fit involving physical activity for adults with ADHD, research has largely been limited to samples with heterogeneous employment without carefully considering the particular type of work in understanding occupational outcomes among adults with ADHD. Only one study considered the context of multiple occupations. Lasky et at. (2016) explored whether new environmental contexts available to young adults impact their ADHD symptomology and if there are specific occupations in which adults with ADHD report a reduction of their ADHD symptoms. Within the reports provided by 125 young adults with ADHD during interview, it would appear that jobs that involve physical labour, hands-on work, stress and new or varied tasks may subjectively help reduce their symptoms (Lasky et al., 2016). In regards to goodness of fit, the researchers indicated that finding a good occupational fit, while important for everyone, may be particularly important for individuals with ADHD as it may help them avoid occupational failure. Lasky et al. (2016) acknowledged that, while jobs that fit the above criteria (e.g. physical labour, hands-work, etc.) may offer lower wages, the psychosocial benefits of finding a good fit occupation may override this deficit (Lasky et al., 2016).

All of these findings suggest that adults with ADHD may benefit from working in jobs that require regular movement or physical activity rather than more sedentary positions. Given that the primary disabling symptom of adult ADHD is inattention, increased management of this symptom through physical activity may result in quantitatively better occupational outcomes.

Study Aims & Hypotheses

This study aims to further explore movement and its ability to assist in the management of cognitive symptoms associated with ADHD in the adult population, specifically in regards to quantitative occupational outcomes. To do so, the following three specific hypotheses were examined:

Hypothesis 1

Prior studies that have examined the quantitative effects of adult ADHD have reported that, on average, adults with ADHD earn less than their non-afflicted counterparts. These studies however have not explored this wage loss as a function of individual careers, rather they have researched heterogeneous occupations. Given that some careers allow individuals to move more than others, some occupations may offer better goodness of fit to adults with ADHD and allow for better management of their cognitive symptoms. Therefore, it was hypothesised that adults with ADHD who were employed in physical occupations (i.e. occupations which allow or require the individual to move) would report hourly wages closer to the national average for their specific occupation than adults with ADHD employed in sedentary positions.

Hypothesis 2

Previous research has indicated that adults with ADHD experience lower job satisfaction in comparison to adults without ADHD. It is possible that this decreased job satisfaction is due to poorly managed cognitive symptoms of ADHD interfering with an affected individual's ability to do and enjoy their work. As movement has been demonstrated to

increase the management of cognitive symptoms of ADHD, it was hypothesised that adults diagnosed with ADHD who were employed in physical occupations would report greater job satisfaction than adults with ADHD employed in sedentary jobs.

Hypothesis 3

Finally, due to a variety of possible reasons (i.e. decreased job satisfaction, decreased work performance, difficulties with organization, etc.), adults with ADHD typically change jobs more frequently than adults without ADHD. As many of the potential reasons for leaving a job (either willfully or otherwise) may be mitigated by better management of cognitive symptoms, working in an occupation which allows or requires movement may help reduce the number of job changes for adults with ADHD. As such, it was hypothesised that adults with ADHD who were employed in physical occupations would experience fewer job changes in the previous five years than adults with ADHD employed in sedentary positions.

Significance of Study

It has been determined that decreased productivity and income losses of adults with ADHD cost the United States 87 to 138 billion dollars annually (Doshi et al., 2012). As such, research into the goodness of fit of specific occupations may not only help increase the quality of life of individuals with ADHD, but may be economically advantageous to the United States labour market. However, currently no other study has quantitatively researched the effects of different types of jobs with an eye toward the movement and physical activity aspects of various work settings on the occupational outcomes of adults with ADHD.

This study aimed to fill this gap in research by exploring the effect of required or permitted occupational movement on occupational outcomes of adults with ADHD. The results of this study may provide direction for career counselors and psychologists providing occupational direction for their clients/patients with ADHD and will further the research of movement and physical activity on the management of ADHD symptoms in the adult population (Fried et al., 2012; Miklósi, Máté, Somogyi, & Szabó, 2016; Ukaan, 2013; Volkow & Swanson, 2013).

Chapter II

Method

This correlational study was completed online in the form of a survey that included both questionnaires and demographic questions. The surveys were administered through SurveyMonkey. A minimum of 89 participants were required for this study. In order to allow for some participants to not complete the survey, a target of 150 participants was set. All participants were recruited through Amazon Mechanical Turk with the use of a pre-screening survey designed to identify individuals who likely meet the diagnostic criteria for adult ADHD (see inclusion criteria below). Given that approximately 5% of the adult population is estimated to satisfy the diagnostic criteria for adult ADHD, it was estimated that approximately 3000 participants would be required to complete the pre-screening survey in order to reach the target of 150 participants for the study. However, once 150 participants were recruited that likely met the diagnostic criteria of adult ADHD, the recruitment was terminated.

Participants

A total of 1444 potential participants were recruited through Amazon Mechanical Turk with the use of a pre-screening survey designed to identify individuals who likely met the diagnostic criteria for adult ADHD. In order to access this survey, all potential participants were required to meet the following inclusion criteria: employed full-time, over the age of 25 and current resident of the United States. Of the 1444 potential

participants who completed the pre-screening survey, 311 were determined to have likely met the diagnostic criteria for adult ADHD. Potential participants were excluded from the study if the researcher was unable, within a reasonable degree of certainty, to appropriately match the participant's completion code from SurveyMonkey and their worker ID on Amazon Mechanical Turk (see data cleaning below). A total of 41 potential participants were excluded for this reason.

Therefore, 270 potential participants were recruited from the pre-screening survey for this study. Once 150 of these participants completed the study, all surveys (i.e. pre-screening and study surveys) were terminated. Of these 150 participants (55.3% Female), 15 were excluded for the following reasons: invalid Job in General scale score due to too many missing responses (1), missing or unclear wage information (4), lack of specificity in current job title (i.e. clerk versus store clerk or judicial clerk) (9), and reporting an education level not consistent with their reported job title (1). In total, 135 participants were included in this study. There was fairly equal gender representation (56.3% Female) and the average participant age was 37.47 (SD = 8.53).

Measures

Two surveys were created for the purpose of this study. The pre-screening survey was designed to screen for participants who met the appropriate inclusion criteria and the study survey was designed to address the hypotheses of this study.

Pre-Screening Survey

The pre-screening survey was designed to ensure all potential participants likely met the diagnostic criteria for adult ADHD (see Appendix A). It exclusively included the Adult

ADHD Self-Report Scale Screener (see description below). This survey was completed online through SurveyMonkey.

Study Survey

The study survey primarily included a measure of job satisfaction (see Job in General Scale below) however participants were additionally asked to report their current age, gender, ethnicity, highest level of education, current hourly wage, current occupation, number of job changes over the past five years and whether or not they have a current diagnosis of a psychological disorder other than ADHD (see Appendix A). This survey was completed online through SurveyMonkey.

Measure of Adult ADHD

The Adult ADHD Self-Report Scale Screener is a 6-item measure that assesses current adult ADHD symptomology and was developed by Kessler, Adler, Ames, Demler, et al. (2005). Participants are required to rate how frequently they experience each of the six items (symptoms or situations) on a five-point Likert scale (from never to very often) over the previous six months. Items include questions such as "How often do you have problems remember appointments or obligations?" and "How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?" (Kessler, Adler, Ames, Demler, et al., 2005). This measure was determined to be reliable (test-retest ranging from 0.58 to 0.77) and valid (AUC of 0.90) (Kessler et al., 2007). Sufficient endorsement of four or more symptoms indicates that the participant's symptoms may be consistent with a diagnosis ADHD. In the current study, only

participants who received a score of four or higher on this measure were invited to take part.

Measure of Job Satisfaction

The Job in General Scale is an 18-item measure that assess overall job satisfaction and was developed by Ironson, Smith, Brannick, Gibson, & Paul (1989). Participants are asked to report whether or not a given adjective describes their current job in general (Yes, Unsure (?) or No). Adjectives include "Pleasant", "Waste of Time" and "Acceptable" (Ironson et al., 1989). This measure was administered to three large heterogeneous samples and determined to be reliable (α of 0.90) and valid (Pearson's correlation ranging from 0.42 to 0.79) (Ironson et al., 1989). Responses of "yes" is scored as three points, "Unsure" as one point and "No" as zero points. For reverse scored items, "No" is scored as three points and "Yes" is scored as zero points. A greater total score is indicative of greater overall job satisfaction (Ironson et al., 1989).

Procedure

Three main procedures were used to conduct this study: data collection procedure, study procedure and the data cleaning procedure.

Data Collection

The data for this study was collected through Amazon Mechanical Turk (MTurk). MTurk is an online crowdsourcing marketplace that offers access to a large, global community of workers. Requesters (individuals who develop and pay for work) are able to set up tasks for workers to complete including surveys, data collection and product

categorization (Amazon Mechanical Turk, 2018). Workers are rewarded with a monetary value of the requesters choosing upon task completion. With over 100,000 available workers, MTurk is a beneficial resource for researchers that allows them quick access to a large number of study participants, in a cost-effective manner (Buhrmester, Kwang & Gosling, 2011; Berinsky, Huber & Lenz, 2012). The MTurk task design also simplifies the implementation of inclusion or exclusion criteria for researchers. When creating a task for workers on MTurk, requesters (or researchers) have the ability mandate that the workers meet certain criteria including a specific age range, level of education, type of employment, gender, etc. This feature helps ensure that the researcher is only spending time and money on participants that fit their specific inclusion criteria and subsequently reduces the time spent on data cleaning.

MTurk offers a more demographically diverse sample with more even gender representation than standard internet and college samples (Buhrmester, Kwang & Gosling, 2011; Crone & Williams, 2015). The quality of the data obtained from MTurk workers having been found to meet or exceed acceptable psychometric standards for published research (Buhrmester, Kwang & Gosling, 2011). Further, research and experiments conducted through MTurk have been found to be both internally and externally valid (Horton, Rand & Zeckhauser, 2011; Crone & Williams, 2015).

Study Procedure

MTurk workers that were over the age of 25, employed full-time and reside in the United States were invited to take part in the pre-screening survey. Interested participants were provided a link to the SurveyMonkey page where the pre-screening survey was administered. The pre-screening survey included the six questions from the Adult ADHD

Self-Report Scale Screener and one of twenty randomly assigned 10-digit, alphanumeric completion codes. Workers were instructed to insert their designated completion code into the completion code text box on MTurk and complete the MTurk task. All workers were paid $0.50 (USD) via MTurk following the completion of the pre-screening survey.

Workers who scored four or higher on the Adult ADHD Self-Report Scale Screener (and therefore likely met the diagnostic criteria for adult ADHD) were invited to take part in the study. Interested participants were provided a link to the study's survey. Participants were first required to read an exempt human research consent form which outlined the purpose of this research and included the estimated time commitment of this study and contact information for the researcher and the Harvard University Area Institutional Review Board. Participants then completed the Job in General scale as well as responded to demographic and background questions including age, gender, ethnicity, level of education, current job title, current hourly wage, number of job changes in the last five years and whether they have any comorbid psychological disorders. After completing this survey, participants were again provided with one of twenty randomly assigned 10-digit, alphanumeric completion codes to be entered into MTurk and were paid $2 (USD) via MTurk.

Data Cleaning Procedure

There were two distinct data cleaning procedures for this study: the data cleaning procedure for the pre-screening survey data and the data cleaning procedure for the study survey data.

Pre-Screening Survey Data: Once 150 participants completed the study that likely met the diagnostic criteria for adult ADHD, the pre-screening survey was terminated. SurveyMoneky and MTurk have different worker/participant identification numbers. Therefore, in order to determine which MTurk workers qualified for the study, the times of completion for the survey on SurveyMonkey and task completion on MTurk were compared with the completion code that was assigned to (through SurveyMonkey) and entered by each participant (on MTurk). MTurk workers responded very quickly to this task/survey and some completion times were only seconds apart. In order to minimize the potential for erroneously qualifying a participant without adult ADHD for the survey, the following restrictions were made: 1) A potential participant (i.e. an individual with a score of four or more on the Adult ADHD Self-Report Scale Screener) was excluded from the study if they submitted their completion code within 10 seconds of a non-potential participant (an individual with a score of less than four on the Adult ADHD Self-Report Scale Screener) who submitted the same completion code. 2) In the event that a potential participant and a non-potential participant submitted the same completion code within a two-minute window, the completion times for the potential participant's SurveyMonkey survey and MTurk task must have been within 30 seconds of one another, otherwise this potential participant was excluded. 3) If the potential participant did not include their completion code, they were excluded.

Study Survey Data: The study survey was made available to all potential qualifying participants. The survey was closed and the data collection process was complete once 150 participants completed the survey. Once all data was collected, the following steps

were taken to clean the data. First, according to the guidelines outlined by Ironson et al. (1989), any Job in General scale that was missing four or more responses was considered to be invalid. Participants missing four or more Job in General questions were removed from the study. The Ironson et al. (1989) guidelines further suggest that missing responses (for participants missing less than 4 items) are to be scored as "unsure" and granted one point. As such, any missing Job in General responses were replaced with the score of 1 in the data. Finally, Ironson et al. (1989) advise the removal of any "straight line" responses, where a participant either responded "yes" to all questions or "no" to all questions. The data was reviewed for any straight line responses.

Next, any participant that did not report an hourly wage or reported a variable hourly wage was excluded. Some participants reported their annual salary rather than their hourly wage. As full-time employment was an inclusion criteria for this study, it was rationalized that each participant was likely working 40 hours a week, 52 weeks a year. That would result in 2080 working hours a year. In the case that an annual salary was reported, hourly wage was calculated by dividing the reported annual salary by 2080.

Finally, all participant job titles were matched to corresponding job titles in the United States Department of Labour Occupational Outlook Handbook (2018). If the job title reported by the participant lacked specificity to be appropriately matched to a job in the Occupational Outlook Handbook or was not in the Occupational Outlook Handbook, the participant was excluded.

Data Analysis

Prior to analyzing the data, each job reported by the participants was coded as either a sedentary or physical occupation. Sedentary jobs were defined as any job which

requires the individual to sit for more than half the time as described by O*NET (2019), a tool for job analysis sponsored by the U.S. Department of Labor. All non-sedentary jobs were coded as physical. Once this was completed, the data analysis for each hypothesis was conducted separately.

Hypothesis 1

To calculate the difference in wage loss between adults who work in sedentary versus physical positions, it was first necessary to calculate the difference in earnings between each participant's reported hourly wage and the national median wage for their reported occupation. This difference was calculated as a percentage to allow for comparison across occupations. A second two-tailed *t*-test was then carried out to compare the loss of earnings between adults with ADHD in sedentary and physical occupations, controlling for age, gender, level of education, ethnicity and comorbid disorders.

Hypothesis 2

In order to determine if adults diagnosed with ADHD who are employed in physical occupations report greater job satisfaction than adults with ADHD employed in sedentary jobs, it was first required to calculate each participant's Job in General score, adjusting for missing responses. A two-tailed *t*-test (linear multiple regression) was then carried out to compare the job satisfaction of adults with ADHD between sedentary and physical occupations, controlling for age, gender, level of education, ethnicity and comorbid disorders.

Hypothesis 3

A final two-tailed *t*-test was carried out in order to determine whether adults with ADHD who are employed in a physical occupation have experienced fewer job changes in the previous five years than adults with ADHD employed in a sedentary position, controlling for age, gender, level of education, ethnicity and comorbid disorders.

Chapter III

Results

Following all data cleaning procedures, the final number of participants included in this study was 135. Of these 135 participants, 49 reported being employed in physical occupations while 86 reported being employed in sedentary occupations. Demographic information of this final sample is illustrated in Table 1.

Table 1

Demographic Information

Variables		**Total**	**Physical**	**Sedentary**
Sample Size		135	49 (36.6%)	86 (63.4%)
Age: Mean (SD)		37.47 (8.56)	36.20 (8.41)	38.19 (8.57)
Gender: Female (%)		76 (56.3%)	30 (61.2%)	46 (53.5%)
Ethnicity	White or Caucasian	118 (87.4%)	40 (81.6%)	78 (90.7%)
	Black or African American	4 (3.0%)	4 (8.2%)	0 (0%)
	Hispanic or Latino	7 (5.2%)	5 (10.2%)	2 (2.3%)
	Asian or Asian American	6 (4.4%)	0 (0%)	6 (7.0%)
Education	High School	7 (5.2%)	3 (6.1%)	4 (4.7%)
	Some University or College	24 (17.8%)	11 (22.4%)	13 (15.1%)
	Trades Certificate	3 (2.2%)	2 (4.1%)	1 (1.2%)
	College Diploma or Certificate	15 (11.1%)	8 (16.3%)	7 (8.1%)
	Bachelor's Degree	58 (43.0%)	16 (32.7%)	42 (48.8%)
	Master's Degree	26 (19.3%)	9 (18.4%)	17 (19.8%)
	Ph.D.	2 (1.5%)	0 (0%)	2 (2.3%)
Comorbid Disorder: Yes (%)		34 (25.2%)	15 (30.6%)	19 (22.1%)

Note: This table illustrates the demographic breakdown of samples in physical and sedentary occupations.

There was no significant difference in gender ratios between physical and sedentary occupations (X^2 [2, N = 135] = 2.78, p = 0.249). Further, there was no significant difference in age (t_{133} = 1.30, p = 0.195) or prevalence of comorbid psychological disorders (X^2 [1, N = 135] = 1.20, p = 0.273) between the two categories of occupations. Education levels between the two samples were not significantly different (X^2 [6, N = 135] = 7.23, p = 0.300). Finally, while the majority of both the sedentary and physical occupation samples similarly consisted of White or Caucasian participants, the overall ethnic distribution between samples varied significantly (X^2 [3, N = 135] = 14.47, p = 0.002).

Assumptions of Hierarchal Linear Regression

It was determined that 135 participants was a suitable sample size for this analysis (Faul, Lang & Buchner, 2007). The assumption of normality was met for the "Wage Loss" dependent variable but not for the "Job Satisfaction" or "Number of Job Changes in the Last Five Years" variables (Osborn & Waters, 2002). Therefore, the adjusted R square values are used in the reporting of these factors' results. Scatter and residual plots indicated that the assumptions of linearity and homoscedasticity were met for all dependent variables (Osborne & Waters, 2002). All collinearity statistics fell within acceptable limits and the assumption of multicollinearity was met (Williams, Grajales & Kurkiewicz, 2013). All data followed the interquartile range rule of three and thus no outliers were identified (Hoaglin & Iglewicz, 1987).

Wage Loss of Adults with ADHD in Sedentary and Physical Occupations

The earnings of the participants of this study were strongly correlated with the 2017 national mean wages for their occupations ($r = 0.67$, $p < 0.001$). There was a significant difference in the average wages for adults with ADHD in comparison to the occupationally specific national averages ($t_{98} = -5.66$, $p < 0.001$). On average, adults with ADHD earned $5.58 less per hour than the national average for their specific occupation (95% CI [-$7.53, -$3.63]). To address the dependent variable of Wage Loss, a two-stage hierarchical multiple regression was conducted. The control variables (Age, Gender, Ethnicity, Education Level and Comorbid Disorders) were entered in step one of the regression and the independent variable (Activity Level of Employment (i.e. Sedentary or Physical)) was entered in step two. Table 2 reflects the regression statistics from this hierarchical multiple regression.

This analysis revealed that the control variables entered at step one (Age, Gender, Ethnicity, Education Level and Comorbid Disorders) contributed significantly to the regression model (F (5,129) = 2.86, p = .018) and accounted for 10% of the variation in Wage Loss. In this step, only Ethnicity was a significant predictor of Wage Loss. Activity Level of Employment was added to the regression model in step two. Introducing this variable explained an additional 4.9% of the variation in Wage Loss and this variation was found to be significant (F (1,128) = 7.33, p = .008). When all control variables and Activity Level of Employment were included in the model, only Ethnicity, Education Level and Activity Level of Employment were significant predictors of Wage Loss. The largest predictors of Wage Loss were Ethnicity and Activity Level of Employment which each uniquely explained 5% of the variation. Education uniquely explained 3% of the

variation. Combined, the control variables and Activity Level of Employment accounted for 14.9% of the variance in Wage Loss. On average, adults with ADHD in sedentary positions earned $7.75 less per hour than the national average for their specific occupation (95% CI [-$10.50, -$5.01]) while adults with ADHD in physical positions earned only $1.78 less per hour (95% CI [-$3.85, $0.33]).

Table 2

Summary of Hierarchical Multiple Regression of Variables Predicting Wage Loss

Variables	**β**	***t***	**sr^2**	***R***	R^2	ΔR^2
Step 1				.31	.10	.10
Age	.10	1.18	.01			
Gender	.10	1.11	.01			
Ethnicity	.24	2.80**	.06			
Education Level	.15	1.72	.02			
Comorbid Disorder	-.04	-.47	.00			
Step 2				.39	.15	.05
Age	.13	1.53	.02			
Gender	.08	.89	.01			
Ethnicity	.24	2.86**	.05			
Education Level	.19	2.16*	.03			
Comorbid Disorder	-.05	-.59	.00			
Activity Level of Employment	.23	2.72**	.05			

Note: N = 135; *$p < .05$, **$p < .01$

Job Satisfaction of Adults with ADHD in Sedentary and Physical Occupations

The average job satisfaction score for participants of this study was 38.40 (SD = 15.38). This score falls into the 33rd percentile (the low end of average) for individuals working in a for-profit organization (Ironson et al., 1989). To determine the difference in

Job Satisfaction between adults with ADHD in sedentary versus physical occupations, a two-stage hierarchical multiple regression was conducted. The control variables (Age, Gender, Ethnicity, Education Level and Comorbid Disorders) were entered in step one of the regression and the independent variable (Activity Level of Employment (i.e. Sedentary or Physical)) was entered in step two. Table 3 reflects the regression statistics from this hierarchical multiple regression.

Table 3

Summary of Hierarchical Multiple Regression of Variables Predicting Job Satisfaction

Variables	**β**	***t***	**sr^2**	***R***	***R^2***	**ΔR^2**	***R^2_{adj}***
Step 1				.35	.12	.12	.09
Age	.18	2.09*	.03				
Gender	-.05	-.49	.00				
Ethnicity	.19	2.22*	.03				
Education Level	.27	3.15**	.07				
Comorbid Disorder	.00	.02	.00				
Step 2				.35	.12	.00	.08
Age	.19	2.11*	.03				
Gender	-.04	-.52	.00				
Ethnicity	.19	2.21*	.03				
Education Level	.27	3.16**	.07				
Comorbid Disorder	.00	.00	.00				
Activity Level of Employment	.03	.37	.00				

Note: N = 135; *$p < .05$, **$p < .01$

This analysis revealed that the control variables entered at step one (Age, Gender, Ethnicity, Education Level and Comorbid Disorders) contributed significantly to the regression model (F (5,129) = 3.60, p = .004) and accounted for 8.8% of the variation in

Job Satisfaction. Activity Level of Employment was added to the regression model in step two. Introducing this failed to significantly explain any additional variation in Job Satisfaction (F (1,128) = .14, p = .714). With all variables in the model, only Age, Ethnicity and Education Level were significant predictors of Job Satisfaction. The largest predictor of Job Satisfaction was Education Level which uniquely explained 6.8% of the variation.

Number of Job Changes of Adults with ADHD in Sedentary and Physical Occupations in the Last Five Years

The average number of job changes for the participants of this study in the last five years was 1.13 (SD = 1.46). To determine the difference in the number of job changes between adults with ADHD in sedentary versus physical occupations, a two-stage hierarchical multiple regression was conducted. The control variables (Age, Gender, Ethnicity, Education Level and Comorbid Disorders) were entered in step one of the regression and the independent variable (Activity Level of Employment (i.e. Sedentary or Physical)) was entered in step two. Table 4 reflects the regression statistics from this hierarchical multiple regression.

This analysis revealed that the control variables entered at step one (Age, Gender, Ethnicity, Education Level and Comorbid Disorders) did not contribute significantly to the regression model (F (5,129) = 2.00, p = .084). Activity Level of Employment was added to the regression model in step two. Introducing this failed to significantly explained any additional variation in the Number of Job Changes in the Last Five Years (F (1,128) = 2.47, p = .119). With all variables in the model, only Age was a significant

predictor of the Number of Job Changes in the Last Five Years which uniquely explained 2.8% of the variance.

Table 4

Summary of Hierarchical Multiple Regression of Variables Predicting the Number of Job Changes in the Last Five Years

Variables	**β**	***t***	**sr^2**	***R***	R^2	ΔR^2	R^2_{adj}
Step 1				.27	.07	.07	.04
Age	-.16	-1.82	.02				
Gender	.01	.14	.00				
Ethnicity	-.01	-.08	.00				
Education Level	.15	1.68	.02				
Comorbid Disorder	.10	1.06	.01				
Step 2				.30	.09	.02	.05
Age	-.18	-2.01*	.03				
Gender	.02	.27	.00				
Ethnicity	.00	-.08	.00				
Education Level	.12	1.41	.01				
Comorbid Disorder	.10	1.13	.01				
Activity Level of Employment	-.14	-1.57	.02				

Note: N = 135; *$p < .05$

Chapter IV

Discussion

The purpose of this study was to examine the differences of three specific occupational outcomes between adults with ADHD employed in sedentary and physical occupations. The decreased productivity and income losses associated with adult ADHD have been found to not only negatively impact the quality of life of adults with ADHD but also pose a substantial financial burden on the United States economy (Doshi et al., 2012). Therefore, research into the goodness of fit of specific occupations may help not only increase the quality of life of adults with ADHD but also alieviate some of the financial strain placed upon the United States economy by ADHD. This study examined three occupational outcomes including earnings, job satisfaction and number of job changes in an attempt to identify the goodness of fit of physical versus sedentary occupations for adults with ADHD and begin to fill this current gap in research. Given that prior research has suggested movement may help increase the management of cognitive symptoms of ADHD, it was hypothesised that adults with ADHD would report decreased wage loss, increased job satisfaction and less frequent job changes when employed in a physical rather than sedentary occupation (Varret et al., 2012; Hartanto et al., 2016; Sarver et al., 2015; Ratey & Loehr, 2011).

Consistent with previous research, the participants of this study (adults who likely meet the diagnostic criteria for ADHD) earned significantly less per hour than than adults

without ADHD. On average, the participants of this study earned $5.58 less per hour than the average wage for their given occuaption. When this wage loss however was explored further through the lens of either sedentary or physical occupations, participants working in sedentary occupations reported even greater wage losses, controlling for age, gender, ethnicity, education levels and the presence of a comorbid disorder. On average, participants in sedentary positions earned $7.75 less per hour than the national average for their specific occupation while adults with ADHD in physical positions earned only $1.78 less per hour. It is possible that this significant difference in earnings is the result of better management of cognitive symptoms of ADHD through the permitted or required movement in physical occupations. Hyperactive symptoms of ADHD have been found to potentially have a regulatory role in managing cognitive symptoms for children with ADHD (Varret et al., 2012; Hartanto et al., 2016; Sarver et al., 2015). The results of this study suggest that the findings of child based research involving the management of cognitive symptoms of ADHD through movement, may extend into the adult population. Physical occupations which allow or require individuals to move while working may encourage the regulation of cognitive symptoms of ADHD through hyperactive symptoms, allowing for increased job performance. Sedentary occupations that limit an individual's ability to move while working may not only inhibit the individual's management of their cognitive symptoms of ADHD through movement but may require additional active management of their internalized restlessness (i.e. hyperactive symptoms). Poorly managed cognitive symptoms of ADHD combined with elevated internalized restlessness could understandably decrease an individual's job performance and, subsequently, their earnings. As such, it would appear that physical occupations

offer a better goodness of fit for individuals with ADHD than sedentary occupations when considering their earning potential.

Physical and sedentary occupations however did not significantly differ when considering job satisfaction or the number of job changes of adults with ADHD. Rather, the greatest predictor of job satisfaction was education level, with a higher level of education resulting in greater job satisfaction. This may be due to increased education levels allowing individuals to avoid entry-level positions and pursue meaningful careers or careers in areas of interest for the individual. Increased levels of education are also generally associated with higher salaries (Autor, 2014). Combined, individuals with higher education levels may be able to pursue more meaningful careers that pay well, which may lead to increased job satisfaction. Notably, the education levels of the participants in this study employed in physical versus sedentary occupations did not vary significantly.

The participants of this study were found to have lower job satisfaction in comparison to the normal population, as predicted by previous research in the area (Weiss & Hechtman, 1993; Painter, Prevatt & Welles, 2008). If movement is in fact beneficial for the management of the cognitive symptoms of ADHD, the lack of significant difference in job satisfaction between physical and sedentary occupations suggests that job satisfaction is not directly influenced by the cognitive symptoms of ADHD. Instead, it is possible that job satisfaction is indirectly influenced by the cognitive symptoms of ADHD through the generally lower academic achievement of individuals with ADHD. In short, cognitive symptoms of ADHD that initially limit educational progress may have persistent negative effects on job satisfaction later in life.

These findings are consistent with those of Biederman et al. (2008) which found ADHD to be associated with significant occupational and educational under attainment.

The number of job changes the participants of this study reported also did not vary significantly between physical and sedentary occupations. On average, participants in this study changed jobs approximately only once in the last five years. This relatively low number of job changes is inconsistent with previous research that suggests that adults with ADHD change jobs more frequently than adults without ADHD (Biederman et al.,2006). The overall limited reported number of job changes of participants in this study likely contributed to the lack of significant difference between the number of job changes for individuals working in sedentary or physical occupations.

The only significant predictor of the number of job changes of the participants in this study was their age. Younger participants reported a greater number of job changes. The younger the participant, the more likely it would be that they are in the exploration stage of their career development. During this stage, individuals tend to explore a variety of careers prior to choosing one to maintain long term. As such, these individuals likely experience a greater number of job changes than individuals who had previously solidified their career path. Therefore, the lack of significant difference in the number of job changes between sedentary and physical positions may be the result of including participants in varying stages of career development in this study.

Conclusion

With the lack of quantitative research on the job-specific occupational outcomes of adults with ADHD, this study provides preliminary data on the potential differences in occupational outcomes between sedentary and physical occupations. This study suggests

that there are at least some differences in occupational outcomes for adults with ADHD dependent on whether they work in a sedentary or physical occupation. The movement permitted or required by physical occupations was found to be beneficial in regards to decreasing the wage gap between individuals with ADHD and those without. The concept that adults with ADHD in physical occupations experience less wage loss in comparison to adults with ADHD in sedentary occupations suggests that the child research on movement and the management of cognitive symptoms extends into the adult population. Allowing or requiring adults with ADHD to move while working may help them better manage their cognitive symptoms and increase job performance.

While job satisfaction was not directly related to the management of cognitive symptoms through movement, it may be indirectly related to the effect of the cognitive symptoms of ADHD on academic achievement. Lower levels of education were found to be the primary predictor job satisfaction and adults with ADHD tend to have lower levels of education as a result of their cognitive symptoms.

The number of job changes reported by participants in the last five years was not significantly different between sedentary or physical occupations but was instead predicted by the participant's age. This is consistent with trends observed in the normal population as younger individuals exploring career options tend to change jobs more often. The lack of difference between the sample population in this study and what has been observed in normal populations likely accounts for the lack of difference in the number of job changes between sedentary and physical occupations.

Limitations

A primary limitation of this study was that participants were not required to have a formal diagnosis of ADHD to take part. Rather, as participants were included based only on their results from a brief screening measure of adult ADHD, it is likely that some participants within this study do not truly have ADHD. As this study did not require participants to have a formal diagnosis, the use of psychotropic medication was not controlled for. Stimulant medication use has been found to increase the management of cognitive symptoms for individuals with ADHD (Gimpel et al., 2005). Therefore, it is possible that some of the potential occupational benefits observed for individuals employed in physical occupations could be attributed to medication use rather than the effect of movement on the management of cognitive symptoms.

This study has additional limitations that are common with research conducted on an online platform. In order to take part in this study, participants were required to be a registered MTurk worker and have access to the internet. As only a small percentage of United States residents are MTurk workers, the generalizability of these results is limited. Participants further chose, through MTurk, whether or not to take part in this research. Therefore, this research is subject to a self-selection bias and the significant findings of this study may not be present in the larger population as a result.

Finally, the effects of the self-selection bias are apparent in the lack of ethnic diversity in this study. There were significantly more Caucasian participants than any other ethnic group. As this does not accurately reflect the ethnic diversity of the United States, the results here can only be considered valid for the MTurk sample population utilized in this study. As demographic variables including ethnicity, age, gender and

education level were controlled for, it is less likely that the lack of ethnic diversity in this study will affect the data results however the results still may not extend into the general population.

Further Directions

As this study has suggested that adults with ADHD may have better occupational outcomes in physical versus sedentary occupations, there is a need for further research into the effect of movement on adult cognitive symptoms of ADHD and its role in the workplace. To avoid some of the limitations of this study, future research should include participants with formal diagnoses of ADHD and study the effects of movement in the workplace for both medicated and non-medicated participants. Future studies should be completed in the lab to help increase the generalizability of the results. Similar to the child research involving increased physical activity in school environments to increase the management of cognitive symptoms, more specific research should also be conducted to specifically determine the potentially positive effects of allowing movement in the workplace. This should include implementing a physical activity program into the work day of adults with ADHD employed in sedentary occupations. By doing so, researchers may be able to provide further direction for career counsellors and potentially increase the quality of life of adults with ADHD regardless of their occupation.

Appendix A

Surveys

Pre-Screening Survey

1. How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Often
- ◯ Very Often

2. How often do you have difficulty getting things in order when you have to do a task that requires organization?

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Often
- ◯ Very Often

3. How often do you have problems remembering appointments or obligations?

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Often
- ◯ Very Often

4. When you have a task that requires a lot of thought, how often do you avoid or delay getting started?

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Often
- ◯ Very Often

5. How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Often
- ◯ Very Often

6. How often do you feel overly active and compelled to do things, like you were driven by a motor?

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Often
- ◯ Very Often

Study Survey

1. For the next 18 questions, think of your job in general. All in all, most of the time is it: Pleasant?

- ◯ Yes
- ◯ No
- ◯ Unsure

2. Bad?

- ◯ Yes
- ◯ No
- ◯ Unsure

3. Great?

- ◯ Yes
- ◯ No
- ◯ Unsure

4. A Waste of Time?

- ◯ Yes
- ◯ No
- ◯ Unsure

5. Good?

- ◯ Yes
- ◯ No
- ◯ Unsure

6. Undesirable?

- ◯ Yes
- ◯ No
- ◯ Unsure

7. Worthwhile?

- ◯ Yes
- ◯ No
- ◯ Unsure

8. Worse than most?

- Yes
- No
- Unsure

9. Acceptable?

- Yes
- No
- Unsure

10. Superior?

- Yes
- No
- Unsure

11. Better than Most?

- Yes
- No
- Unsure

12. Disagreeable?

- Yes
- No
- Unsure

13. Makes you content?

- Yes
- No
- Unsure

14. Inadequate?

- Yes
- No
- Unsure

15. Excellent?

- ◯ Yes
- ◯ No
- ◯ Unsure

16. Rotten?

- ◯ Yes
- ◯ No
- ◯ Unsure

17. Enjoyable?

- ◯ Yes
- ◯ No
- ◯ Unsure

18. Poor?

- ◯ Yes
- ◯ No
- ◯ Unsure

19. What is your current age?

[ ]

20. What is your gender?

- ◯ Male
- ◯ Female
- ◯ Prefer not to say

21. What is your ethnicity?

- ◯ White or Caucasian
- ◯ Black or African American
- ◯ Hispanic or Latino
- ◯ Asian or Asian American
- ◯ American Indian or Alaska Native
- ◯ Native Hawaiian or other Pacific Islander
- ◯ Another race

22. What is your highest level of education?

- ◯ Less than High School
- ◯ High School
- ◯ Some University or College
- ◯ Trades Certificate
- ◯ College Diploma or Certificate
- ◯ Bachelor's Degree
- ◯ Master's Degree
- ◯ Ph.D.

23. What is your current hourly wage?

24. What is your current job? Please be as specific as possible. (For example: Middle School Teacher, Customer Service Representative, Civil Engineer, etc.)

25. How many times have you changed jobs over the last five years?

26. Do you have a *current and diagnosed* psychological disorder **OTHER** than ADD or ADHD?

- ◯ Yes
- ◯ No

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