Attention deficit hyperactivity disorder and the impact on adults exiting school

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Dedications

This thesis is dedicated to my grandfather, Robert M. Kilroy, Sr., whom helped me through school and pushed me to become the person I am today. Without him, I would not be able to have the opportunity to attend college at a university and achieve my goal of having a higher education.

I would also like to dedicate this thesis to my very best friend, Gallya Manduke. She has supported me through undergraduate school and graduate school, both mentally and emotionally.

I would also like to dedicate this thesis to my cousin, Lisa Kilroy. She has always shown me what hard work really is and that I can achieve anything that I put my mind and heart to, as long as I put the work in for it.

And lastly, I would like to dedicate my thesis to my family. I am the first person in my immediate family to go to college and achieve a degree higher than a bachelor’s degree. Without their support and constructive criticism, I would not have tried to achieve my goals and dreams.
Acknowledgment

I would like to express my gratitude to my thesis advisor, Roberta Dihoff, Ph.D., who guided me through the thesis process, data collection, and answered all of my questions. Without her, this thesis would not be possible.
Abstract

Dana L. Kilroy
ATTENTION DEFICIT DISORDER AND THE IMPACT ON ADULTS EXITING SCHOOL
2015-2016
Roberta Dihoff, Ph.D.
Master of Arts in School Psychology

The purpose of this thesis study was to see if there was a connection between Attention Deficit Hyperactivity Disorder and going on to attend college. Attention Deficit Hyperactivity Disorder (ADHD) is a disorder commonly diagnosed in children during the developmental years that impedes on their abilities to pay attention and stay still, which could be detrimental in a school setting. Previous research shows that students with ADHD are not going on to attend college and to receive a higher level of education. Adults with ADHD tend to present their symptoms differently than they did when they were children. This thesis study surveyed adults between the ages of 18 and 28, both with and without a diagnosis of ADHD in order to find out if there is a connection. Adults between the ages of 18 and 28 would be part of the generation that was during the time period when ADHD was being diagnosed at a high rate. One-hundred participants participated in this study, having an almost equal number of participates having a diagnosis of ADHD and the other half not having a diagnosis of ADHD. If there is a connection, then there could be ways that schools could prepare their students for the transition to college by implementing treatments to help them better transition.
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Chapter 1

Introduction

Purpose of Study

The purpose of this study is to see if high school graduates with attention deficit hyperactivity disorder (ADHD) are going on to attend college or entering the workforce and if ADHD has an impact on lifelong learning.

Statement of Hypothesis

Students with ADHD are more likely to enter the workforce after attending some college, but not graduating. This study compared high school graduates without a diagnosis of ADHD to high school graduates with a diagnosis of ADHD. Each person was given a survey in which occupations, college status and grade point average, high school grade point average, age, and if they have ADHD was asked. If they have ADHD, the survey extended and asked what kind of interventions were in place for them. Age was measured because the age range is 18 to 28, a ten year span in which many people have been able to either go to college or enter the work force for a few years. Occupation was asked to find out what kinds of occupations people with ADHD go into. College status was asked in order to see if the students either attended and graduated college, attended college but did not continue, or did not attend college.

Significance of Study

The significance of this study is to identify if graduating students with ADHD are going on to enter college. If students are not going to college, more in depth studies could be done to identify what could be done to have ADHD students pursue a college education. This study should be conducted because identifying if ADHD students are not
going from high school on to college, interventions might be able to be put into place and push students to get a college education or give them the tools for focusing themselves.

**Definitions**

Attention deficit hyperactivity disorder (ADHD) is defined as having three subtypes: predominantly inattentive, predominately hyperactive-impulsive, and combined type. Predominately inattentive type is defined as having trouble sustaining attention for a period of time and is distracted easily. Predominantly hyperactive-impulsive type is defined as high levels of fidgeting, distracting others, interrupting, and difficulty staying in one place. Combined type is a combination of the two types (Hallahan, Kauffman & Pullen, 2015). A high school graduate is defined as a person who successfully completed the requirements of high school and received a diploma. A diagnosis of ADHD is defined as a student being diagnosed with ADHD by their physician. Lifelong learning is defined as a person’s continuing education.

**Limitations**

Limitations were willingness to complete the survey and the population taking the survey. Willingness to complete the survey was a limitation because people may think that other people will answer it or they do not have time. The population taking the survey was a limitation because people may not have wanted to disclose whether they have ADHD or not. An assumption was that if a person was prescribed medication for ADHD, they were taking his or her medication as directed.
Chapter 2

Literature Review

Attention deficit hyperactivity disorder is a disorder that mainly affects children, but in many cases, it affects adults as well. Faraone, Biederman, and Mick (2006) found that as many as two-thirds of children who are diagnosed with ADHD go on into adulthood retaining the disorder with prominent symptoms or in partial remission. In order to gain a greater understanding of the two-thirds who retain the disorder, the symptoms of ADHD in children must be examined, along with the treatments implemented. Effective treatments could be identified and affect whether high school graduates go to college or into the workforce. Another area to look at is ADHD in high school students. What are teachers doing to accommodate these students? Could there be a better way to prepare these students for college? Another important area to look at is ADHD in adults. How are adults with ADHD coping? Can the symptoms of ADHD in adults mirror those of children, or is there a difference?

ADHD Symptoms in Children

Attention Deficit Hyperactivity Disorder starts during childhood. Markers of this disorder are inability to sit still, being fidgety, interrupting those who are talking, inability to stay on task, and being distracted easily (Marsh, Nigg, & Barkley, 2014). About 7% of the school age population is being diagnosed with ADHD (Collingswood, 2014). About 7% of the school age population is being diagnosed with ADHD (Collingswood, 2014). Children with ADHD do a lot better when they are rewarded for the things that they do (Barkley, 2013). McCarthy et. al (2012) found that in childhood, ADHD affects school achievement, relationships with peers, teachers, and parents, leads to oppositionality, and can also lead to anxiety and depression.
ADHD in Adulthood

Although Attention Deficit Hyperactivity Disorder is known as a childhood disorder, it has surfaced that some adults retain the disorder through adulthood. But most adults whom once qualified as children for the disorder do not qualify for the disorder as adults (Mash, Nigg, & Barkley, 2014). About half of those affected as children retain ADHD symptoms into adulthood. Difficulty with Relationships, organizing things, listening to instructions, and completing tasks becomes more apparent (ADAA, 2015). Attention Deficit Hyperactivity Disorder is, more often than not, comorbid with other disorders, including anxiety, depression, and antisocial behaviors (Collingswood, 2014). In adults, other symptoms may include a short temper, low tolerance of frustration, trouble coping with stress, restlessness, and frequent mood swings (Mayo Clinic, 2015). Simon (2012) found that adults with ADHD are more likely to be a criminal, become a part of the lower socioeconomic status community, divorce, and be unemployed. They also have a high comorbidity rate with substance abuse, anxiety disorders, and affective disorders. Adults with ADHD had it as a child, even if they were not diagnosed until later in life (Mayo Clinic, 2015). To be diagnosed with ADHD as an adult, a person would have to have shown symptoms prior to age seven (Kessler et. al, 2006). According to Amiri et. al (2014), as much as 4.2% of the working class population, from ages 18 to 44, has a diagnosis of ADHD. Mash, Nigg and Barkley (2014) reported that the DSM-5 criteria lowered the amount of symptoms displayed from six to five and that history plays a major role in a diagnosis. Attention Deficit Hyperactivity Disorder, when presented in adults, causes severe impairment in all aspects of life that can produce outcomes that are
not favorable to the person (Kessler et. al, 2006). Said et. al (2005) found that ADHD is turning into a lifelong disorder and that it needs to be managed as such.

**Types of ADHD**

Attention Deficit Hyperactivity Disorder could be considered an umbrella term for those who do not know that there are multiple subtypes of ADHD. There are three types defined in the DSM-V: predominantly inattentive (ADHD-I), predominantly hyperactive-impulsive (ADHD-HI), and combined (ADHD-C). The symptoms of other subtype can be shown in one subtype, but it does not meet the mark for the combined type (Mash, Nigg, & Barkley, 2014). According to Huey-Ling et. al (2010), those with ADHD-HI and ADHD-C went to bed earlier, woke up later, and had more sleep during the night, compared to those with ADHD-I and non-ADHD. During the weekends, ADHD-C and ADHD-I were found to take more daytime naps.

**Medication and Treatment**

In cases of severe ADHD, stimulant medications are often the first line of treatment (Said et. al., 2015). The treatment for adults with ADHD is very similar to the treatment of children diagnosed with ADHD (Mayo Clinic, 2015). According to Okie (2006), ADHD found in adults could be the result of drug companies wanting to aim at the adult stimulant market. Although, there was support for ADHD in adulthood, saying that the use of stimulant medication alleviates genuine suffering of those adults who have the disorder. According to Newcorn, Stein, and Cooper (2010), adolescents were more likely to need a higher dose than children do; although not specifically correlated with their weight, when dealing with adolescents, it should still be considered when to giving adolescents. Treatment for children should be taken into careful consideration. The two
kinds of treatments are pharmacological and psychological/behavioral. Because stimulant medication for a young child can be dangerous, parents often try other things before committing to a stimulant. However, when a stimulant is introduced into the child’s life, it is not alone. There is often a behavioral or psychological component at play with the medication (Leggett & Hotham, 2011). According to Halmoy et. al (2009), there is a correlation between not receiving treatment as a child and not having a job as an adult. This is interesting because if the child is un-medicated and goes under the radar of being able to get treatment, there is no coping mechanism or ability to deal with certain situations. Halmoy et. al (2009) also found that if there was treatment during childhood among the participants, they tended to be a part of the “younger” portion of the population and receive stimulant medication as treatment. Weiss (2011) found that Cognitive Behavioral Therapy (CBT) is often very beneficial for those suffering from ADHD by having them implement planning strategies, organization, and reducing distractibility.

**Learning and School**

When it comes to learning, students with ADHD encounter more obstacles than most students. In a report by Martin and Burns (2014), students with ADHD are significantly more prone to academic adversity, both major and minor. Along with academic adversity, students with ADHD do not have a great capacity for dealing with change, things that seem novel, and things that seem uncertain.

In schools, different types of help for ADHD are offered. One option is receiving cognitive behavioral therapy while in school (Said et. al., 2015). In schools, 504 plans and IEPs (Individualized Education Plans) can be implemented to give the child special
seating, extra test times, behavioral therapy, and other tools and therapies that the school can provide (Wolraich et. al, 2011).

**ADHD and Continuing Education**

In a longitudinal study by Wagner, Newman, Cameto, Garza, and Levine (2005), it was found that those with ADHD are more likely to be enrolled in a technical, vocational, or business school than those without ADHD who are enrolled. Rabiner et. al (2008;2007) found an interesting connection between ADHD and academic success—even at a private university, those with ADHD that made it into the competitive school had more academic concerns and problems than those who did not have ADHD. A study conducted by Blasé et. al (2009) found that many ADHD diagnosed college students used tobacco and alcohol along with their medication during their first two years of college. In a study by DuPaul et. al (2009), it was found that students enrolled in college were more likely to not graduate compared to their non-ADHD counterparts.
Chapter 3

Methods

Participants

This study included a sample size of 60 participants. The sample consisted of the college educated, the college drop outs, and those who went straight into the workforce after college. Within each group, there was a breakdown of those with a diagnosis of ADHD and those without a diagnosis of ADHD. The ages of the participants ranged from 18 years of age to 28 years of age. The mean age of the participants for this thesis study was about where it was estimated to be ($M = 23.73$, $SD = 2.55$). Those who were younger than 18 and older than 28 at the time of the study were removed due to the age range not including minors and those who were older. Compared to the total number of participants that took part in this study, only a relative few had a diagnosis of ADHD (ADHD = 12, No ADHD = 48, $N = 60$). In the thesis study, there were more females than males that participated (males = 10, females = 50, $N = 60$).

Table 1

Gender Descriptives

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>Male</td>
<td>10</td>
<td>16.7</td>
<td>16.7</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>50</td>
<td>83.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>60</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Note.* The participants in this study were acquired through social media.
Out of all of the participants in the study, the majority of the participants were white. There were six choices that the participants could choose from: two or more races, African American/Black, Asian, Alaska Native/American Indian, Hispanic/Latino, and Caucasian/White. Out of all of these, 88.3% of those who answered chose Caucasian/White.

Figure 1

Race and Ethnicity

Note. The majority of the participants in the study identified as Caucasian/White.
**Instrumentation**

The tool used to collect data for this study was a survey created by the co-investigator using Qualtrics survey software. The survey consisted of nine questions pertaining to ADHD, level of education, income, race, and gender.

**Qualtrics.** In order to reach participants, the survey was made using Qualtrics software in order to put it on social media websites.

**SPSS.** In order to analyze the data, the SPSS Statistics program was used. A bivariate correlation was used to analyze the relationship between the variables.

**Procedures**

Participants were selected using social media websites (i.e. Facebook.com) using a link that connected them to the survey on Qualtrics.com accompanied by a social media script (see Appendix A). The participants answered the survey anonymously, providing no information that could be traced back to them (see Appendix B).

The hypothesis—students with ADHD are more likely to enter the workforce after attending some college, but not graduating—was analyzed using a bivariate correlation. The variables analyzed were education level and ADHD diagnosis.
Chapter 4

Results

Inferential Statistics

A bivariate correlational analysis examined the relationship between ADHD diagnosis and education level. The variables of education level and ADHD diagnosis were negatively correlated ($r (59) = -.060, p = .649$), meaning that the presence of an ADHD diagnosis and attending college/graduating from college was more likely. The hypothesis that students with ADHD are more likely to enter the workforce after attending college, but not graduation was not confirmed.

Figure 2

*ADHD and Education*
As shown in Figure 2, there is a dramatic difference between the number of participants with ADHD and those without ADHD diagnoses. The same amount of people whom went to college was the same as the amount of people who dropped out of college, with graduated from college being slightly lower than the two others. Those attending college for the non-ADHD participants was dramatically higher than the number of those who dropped out.
Chapter 5

Discussion

The hypothesis—students with ADHD are more likely to enter the workforce after attending some college, but not graduating—was not confirmed. The findings of this thesis study did not fit with prior research of the topic of ADHD and continuing education. The study found that there was no strong correlation between the two variables of education level and ADHD diagnosis.

As studies do, this study has its strengths. Because the survey was distributed online, it was able to reach a more diverse population than just a college campus population. Another strength of this study was the age range that it looked at. Since this study aimed to survey people between the ages of 18 and 28, there was a ten year time span in which the study could look at and see how successful people were in their adult life after they were diagnosed with ADHD.

Like any study, this study also had its weaknesses. The majority of the participants in the study were female. Because of this overwhelmingly female response, the results could have been skewed, not gathering enough data on the population in which ADHD is more or less targeted more on the males. Another weakness was that the population that was studied identified mostly as Caucasian/white. Because of this, there was not enough diversity in the study. The number of participants in the study was also a weakness. There were only 60 participants (ADHD = 12, No ADHD = 48) in the study. Because there was not a large population, generalizations would not have been able to be made if the results were significant. And because there were a limited number of
participants with a diagnosis of ADHD in the study, there were not enough in each group to truly compare ADHD diagnosis and education level.

Future research with this topic needs to be done on a larger scale. The more participants with ADHD to be equal to those without ADHD will even the playing field and bring about “better” results. By having a more diverse population, research would be able to see if it is affecting certain populations or if it is generalizable to other populations. By gathering more information on this topic, future research will be able to help those with ADHD that are adults and give them strategies to deal with their disorder while attending college and close the gap between those who are graduating from college and those who are not.
References


Appendix A

Social Media Script

I am doing a study for my graduate thesis for Rowan University. Below is a link to my survey for my thesis on the subject of Attention Deficit Hyperactivity Disorder (ADHD) and its impact on adults exiting school. If you are between the ages of 18 and 28, please take the survey and then press share to pass it onto your peers and colleagues. Thank you!
Appendix B

Participant Survey

1. Age
   a. ____________

2. Gender
   a. Male
   b. Female

3. Race/Ethnicity
   a. 2 or more races/ethnicities
   b. African American/Black
   c. Alaska Native/ American Indian
   d. Asian
   e. Hispanic/Latino
   f. Caucasian/White

4. Level of Education
   a. Attending college
   b. Graduated from college
   c. Dropped out of college
   d. Went directly into the workforce
   e. Went to trade school

5. Occupation if in work force or anticipated occupation if still in college:
   a. ____________________________
6. Have you ever been diagnosed with Attention Deficit Hyperactivity Disorder (ADHD)?
   a. Yes
   b. No

7. If you have ADHD, do you take prescribed medication?
   a. Yes
   b. No

8. If you have ADHD, did you receive accommodations/help while in high school?
   a. Yes
      i. Explain what kind: _______________________________
   b. No

9. What is your average income?
   a. $0 to $9,000
   b. $10,000 to $19,000
   c. $20,000 to $29,000
   d. $30,000 to $39,000
   e. $40,000 to $49,000
   f. $50,000 and above