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Perceptions Professor Have Toward Adults With Attention Deficit Hyperactive Disorder: A Causal-Comparative Study

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Abstract

The purpose of this study was to examine professors in higher education perceptions toward students with attention deficit hyperactive disorder. Further, considering Goffman's theory of stigma, this researcher designed a study which examined perceptions of professor toward adults with attention deficit hyperactivity disorder (ADHD). Therefore, this dissertation focused on using a quantitative causal-comparative research method to examine perceptions professors in higher education have toward adults with ADHD. This researcher examined the perceptions of professors who had undertaken coursework in ADHD or have a special education license to those who have not. Further, this researcher examined professors' academic disciplines, grouping professors who teach in the education academics, and comparing those who teach in other academics. Ninety-one participants responded to the online survey with three demographic questions and an instrument pub, which examines stigma toward adults with ADHD. Further, data was collected via two universities in Massachusetts, one university in Texas, and one university in Oregon. Data analyzed and examined showed no statistical significance with regards to perception levels for professors in higher education regarding their undertaking (or lack thereof) or coursework in ADHD or special education licensure. Further, no statistical significance was found in professors in higher education with regard to academic disciplines of education versus non-education.

Keywords: attention deficit hyperactivity disorder, ADHD, professor, attitude, stigma, perception, social identity, educational leadership, original research, higher education, college, university

Dedication

This dissertation is dedicated to my children; Isabella, Matthew, Brianna, and Abigail. I love you all to the moon and back. Thank you for your patience and understanding. I am very proud of you all!

Next, to my beloved husband, James. You inspire me to always do better. I love you! I could not have done this without you.

Also, I dedicate this to my beloved grandmother and father. I miss you both terribly, and I wish you both were here to see this. Thank you for instilling my drive to always continue and succeed.

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Finally, I dedicate this to all my students past, present, and future. You are the reason why I continue to educate and teach.

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Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

Introduction to the Problem

Stigma is one of the most devastating psychosocial problems that exist today and frequently affects individuals with mental illness (Chronister, Chou, & Liao, 2013). Individuals with mental illness often feel discriminated against due to the stigma and negative perceptions surrounding mental illness (Chronister et al., 2013). This stigmatization extends to higher education students, and it is therefore essential to consider the perceptions that professors in higher education have toward adult students with attention deficit hyperactivity disorder (ADHD; Vance & Weyandt, 2008), a disorder characterized by patterns of inattentive and/or hyperactive behaviors that interfere with one's development or life (American Psychiatric Association, 2013).

Researchers conclude that, overall, professors have positive perceptions toward students with disabilities (Bolourian, Zeedyk, & Blacher, 2018; Vance & Weyandt, 2008). Fuermaier et al. (2014) found that educators overall had lower levels of stigmatization when compared to a similar group of individuals who responded to an identical qualitative instrument measuring stigma. However, there are gaps in the literature that examine negative perceptions that exist among the specific population of higher education professors (Fuermaier et al., 2014; Vance & Weyandt, 2008). Professors who hold negative perceptions toward individuals with mental illness may also hold the belief that such individuals possess undesirable characteristics that make them outliers in society (Chronister et al., 2013).

The rigor and standards of the higher education environment can create an overwhelming sense of anxiety in students with ADHD, which can discourage enrollment in 4-year educational institutions (Kuriyan et al., 2013). According to the U.S. Department of Education's National

Center for Education Statistics, students with disabilities comprise 11.1% of the total student population enrolled in postsecondary education (Snyder, de Brey, & Dillow, 2016). However, there is a lack of research that focuses on ADHD in the adult population (Ramos-Quiroga, Nasillo, Fernández-Aranda, & Casas, 2014; Thompson & Lefler, 2016).

This doctoral dissertation focuses on examining perceptions that exist among higher education professors toward adult students with ADHD. In this chapter, the relevant background and history will be introduced, along with the conceptual framework associated with this study. Further, a problem statement is presented, the purpose and associated research questions, and definitions to accompany the study will be introduced. Finally, the assumptions, delimitations, and limitations will be discussed, along with the research questions.

Background, Context, History, and Conceptual Framework of the Problem

According to the American Psychiatric Association (2013), ADHD is characterized by a pattern of behavior consistent with inattention, hyperactivity, and impulsivity, which inhibits development and functioning. The symptoms of ADHD contribute to problems with academic performance, rejection by peers, and, specific to adults, unemployment, and antisocial personality disorder (American Psychiatric Association [APA], 2013). Furthermore, ADHD is not a condition that lessens or has a cure; it persists into adulthood (APA). Therefore, a population of students in higher education may exhibit symptoms of ADHD well into adulthood.

There is limited published research that examines perceptions toward adults with ADHD (Masuch, Bea, Alm, Deibler, & Sobanski, 2018; Ramos-Quiroga et al., 2014). Lombardi et al. (2018) stated that future research should focus on filling the existing gaps of literature in this area using quantitative means and published instruments. The existing literature that examines the perceptions and knowledge of higher education professors toward adult students with ADHD

is limited (Vance & Weyandt, 2008). Watson et al. (2017) reported that students with disabilities might face additional barriers to success in their higher education careers when compared to non-disabled students. Watson et al. found that faculty members of a social work program assumed that students with mental illness were more likely to be violent, dangerous, and "dirty." This dissertation was primarily based on the limitations, future research, and the literature gap cited by Fuermaier et al. (2014), who examined German elementary school teachers and physicians, and their stigma levels towards adults with ADHD. For the current study, the researcher attempted to extend Fuermaier et al.'s research and adapt the original study to a population of higher education instructors in the United States by examining their perceptions of adult students with ADHD.

This dissertation was guided by the theory of stigma by Goffman (1963) and examines how the perceptions of professors affect the outcomes of students with ADHD. Stigma is shaped by what society views as a "spoiled identity" affected by adverse social markers such as disability, disease, race, religion, sexual, or criminal history (Goffman). Goffman hypothesized that stigma is a viewpoint that a person develops after acquiring an unacceptable social identity toward a person affected by a disability, disease, race, religion, sexual, or criminal history (Goffman). Goffman's theory of stigma was later extended by subsequent researchers addressing public stigma to include the psychological and social reactions to an individual perceived to have a deviant social identity (Pryor & Reeder, 2011).

Although stigma does exist, Goffman stated that certain groups, the "wise," or outlier groups, were not subject to stigma. Researchers show that some students with ADHD have had positive experiences with higher education professors. However, there were some instances in which students were victims of a professor's negative perceptions (Bolourian et al., 2018). It is

crucial to understand how a professor's perceptions can affect students with disabilities because such perceptions can directly influence the performance levels and outcomes of students (Fuermaier et al., 2012; Vance & Weyandt, 2008). This theory is further defined and discussed in Chapter 2.

Statement of Problem

It was not known if or to what extent group differences exist between professors' perceptions toward higher education students with ADHD and the variables of professors' coursework or certification in ADHD/disability awareness or special education with regard to individuals with ADHD (Becker & Palladino, 2016; Fuermaier et al., 2014; Sniatecki, Pelz, & Gates., 2018; Wynants & Dennis, 2017). It is imperative to consider professors' beliefs about ADHD and the influences on these beliefs (Fuermaier et al., 2014; Vance & Weyandt, 2008), given that these beliefs (including stigma) can affect student outcomes. Extending the current research to include examining perceptions of professors in higher education toward adult college students with ADHD may help to clarify the types of course content and curriculums that new and seasoned college instructors require to optimally serve this particular population (Fuermaier et al., 2014). Through a quantitative, causal-comparative research design, these relationships were examined to address the gaps in the literature that exist regarding adult higher education students with ADHD (Fuermaier et al., 2014).

Purpose of the Study

The purpose of this quantitative, causal-comparative design study was to examine if, and to what extent, group differences exist between professors' perceptions toward adults with ADHD. The researcher attempted to examine the independent variables of specific teaching content of non-education/education and coursework/certifications in special education or ADHD.

Furthermore, this researcher utilized an instrument published by Fuermaier et al. (2012), which examined stigma towards adults with ADHD and found it valid and reliable within the United States population of professors.

Research Questions and Hypotheses

The following research questions and hypotheses guided this study:

RQ1: If, and to what extent, is there a difference in professor perceptions of adults with ADHD when they have or have not undertaken training in ADHD or hold a special education license?

H10: There is no statistically significant difference in professor perceptions of adults with ADHD when they have or have not undertaken training in ADHD or hold a special education license.

H1A: There is a statistically significant difference in professor perceptions of adults with ADHD when they have or have not undertaken training in ADHD or hold a special education license.

RQ2: If, and to what extent, is there a difference in professor perceptions of adults with ADHD if they teach in education programs or non-education programs?

H20: There is no statistically significant difference in professor perception of adult students with ADHD if they teach in education programs or non-education programs.

H2A: There is a statistically significant difference in professor perception of adult students with ADHD if they teach in education programs or non-education programs.

This study focused on examining perceptions of professors toward adult students with ADHD by forming group difference research questions that explored the relationships between academic discipline type (education professors or professors in other disciplines) and training/courses taken in ADHD or certification in special education with regard to perceptions toward adult students with ADHD.The researcher examined descriptive data related to academic discipline types (applied science, education, formal sciences, humanities, natural sciences, and social sciences). At the individual level, researching professor perceptions toward adult students with ADHD has been relatively understudied (Vance & Weyandt, 2008). Furthermore, there are existing gaps in the research literature regarding ADHD in adult college students (Vance & Weyandt).

Professors' perceptions can negatively or positively affect toward adult students with ADHD. Considering Goffman's (1963) theory of stigma, persons considered normal or those being stigmatized are not actually because of the person, rather a perspective. Furthermore, professors' perceptions can also extend to their lifelong attributes causing type-casting of specific groups of students and, in turn, affecting professors' perceptions of students with ADHD (Goffman, 1963). Becker and Palladino (2016) suggested that professor efficacy is evaluated with regard to professional development opportunities and impacts on students with disabilities.

At the organizational level, professors are responsible for educating all students. However, students with disabilities (such as ADHD) often have lower retention rates and testing scores (DuPaul, Weyandt, O'Dell, & Varejao, 2009; Kuriyan et al., 2013) and may drop out before completing their college degrees. Researchers have indicated that students in higher education with ADHD underperformed when compared to their non-ADHD peers (Kuriyan et al., 2013). Furthermore, students with ADHD frequently exhibit difficulties with retaining

attention to tasks, executive functioning, organization, completing tasks such as studying, and appropriate social skills (Barkley & Murphy, 2011; Emmers, Jansen, Petry, van der Oord, & Baeyens, 2017; Weyandt et al., 2013). For students with disabilities, the Americans with Disabilities Act (ADA) mandates that discrimination against such students is illegal and all federally-funded public and private higher education institutions must provide reasonable accommodations to disabled students. Students with disabilities are enrolling in higher education institutions at a rising rate (Kim & Aquino, 2017; Sniatecki, Perry, & Snell, 2015). Despite the ADA mandates, stigma and negative perceptions toward disabled students continue to persist amongst professors in higher education (Bolourian et al., 2018; Gallo, Mahar, & Chalmers, 2014; Masuch et al., 2018; Thompson & Lefler, 2016; Vance & Weyandt, 2008).

At the societal level, statistics collected by research sponsored by the Center for Disease Control (CDC) in its National Survey of Children's Health concluded that parents in the United States reported that their children diagnosed with ADHD between the ages of 4–17 increased from 7.8% in 2003 to 9.5% in 2007, then again to 11% in 2011 (Visser et al., 2014). Students with disabilities encompass 11.1% of the total student population enrolled in higher educational institutions (Snyder et al., 2016). Statistics for high school students revealed that one in every five boys and one in every 11 girls have ADHD (Visser et al.). Since ADHD is a neurological disorder that persists into adulthood, and in light of the reported increase in child and adolescent diagnoses of ADHD, it can be assumed that these statistics will impact higher education students.

Definitions of Terms

The following section introduces the variables and terminology used in the study.

Academic discipline. Also known as the field of study, an academic discipline is a professor's area of knowledge in which they have received a higher education degree, conducted

research within the discipline, and teach others in the content area (National Center for Education Statistics [NCES], 2000). With regard to this study, this researcher chose the following academic discipline categories: applied sciences (business; engineering and technology; and medicine and health); education (elementary, secondary, and special education); formal sciences (computer science, mathematics, and statistics); humanities (arts; performing arts; visual arts; history; languages and literature; law; philosophy; and theology); natural sciences (biology, chemistry, earth sciences, space sciences, and physics); and social sciences (anthropology, archaeology, economics, human geography, political science, psychology, and sociology).

Attention Deficit Hyperactive Disorder. Often viewed as pertaining to "lazy persons" or a "fad," ADHD is a disorder diagnosed in children, teens, and adults. There are three types of ADHD: inattentive type, in which a person exhibits most of the inattentive symptoms; hyperactive type, in which a person presents most of the hyperactive components of the disorder; and combined type, in which a person exhibits some inattentive and some hyperactive symptoms (APA, 2013).

The ADHD symptomology includes patterns of inattentive and/or hyperactive behaviors that may interfere with one's development or life, and is described via six or more features of inattention ("often fails to give close attention to detail," "difficulty sustaining attention in task," "often does not seem to listen," "often does not follow through on instruction," "often has difficulty organizing tasks and activities," "often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort," "often loses things," "often easily distracted by extraneous stimuli," and "often forgetful in daily activities") and/or six or more features of hyperactivity or impulsivity ("fidgets often," "cannot sit still," "running or climbing," "quiet

engagement in play or leisure is challenging," "often going or 'driven like a motor,'" "excessively talks," "difficulty waiting for his or her turn," and "interrupts or intrudes on others") (APA, 2013, pp. 59–60).

Coursework in ADHD. For this study, coursework in ADHD is defined by this researcher as any additional coursework, classes, or professional development which professors in higher education have undertaken.

Perception. For this study, perception is defined as the opinion or feelings a professor has toward adult students with ADHD. Further considering knowledge groups that professors have in relation to adult students with ADHD. According to the theory of stigma by Goffman (1963), an individual's perceptions are shaped through societal views that exist toward individuals and are associated with types of diseases and disabilities; perceptions of sexual beliefs as immoral and criminal; and associations with certain tribal or religious groups.

However, Goffman (1963) named a group of individuals with disabilities who would not be subjected to stigma as the *wise*. Goffman (1963) theorized that a group of people exists who fit under one of the associated categories of stigma existed and was called the *wise*. These individuals who have an abnormal condition, however, are not privy to the stigmatizing beliefs and behaviors of others and are accepted by society. However, Goffman (1963) did state that the *wise* in certain circumstances may experience stigma. The author further stated that stigma is divided into three distinct categories of individuals: those who are stigmatized, those who are not stigmatized, and those who bear a deviant condition yet are still considered to be *wise* and therefore are not susceptible to being stigmatized (Goffman, 1963).

Special education license. The state within the United States in which a professor works determines the name(s) of special education license. A license in special education focuses on

moderate or severe disabilities; specifically, for educators working in elementary and secondary schools. However, a special education license is not required for professors in higher education (NCES, 2000).

Assumptions, Delimitations, and Limitations

In research, it is imperative that the assumptions, delimitations, and limitations are assessed and discussed in order to aid in the design of the research project. The following is a brief discussion of the existing assumptions, limitations, and delimitations that existed for this research study. The researcher provides a more in-depth review in Chapter 3.

Assumptions. The assumptions fundamental to this study included the ability to identify professors who were willing to participate in the study and complete a research questionnaire, as well as postsecondary institutions to where the researcher obtained permission to send an invitation to participate in the study. It was assumed that the higher education institutions granted authority to the researcher to send an e-mailed request to participate in this study or connected with someone within the university to send the survey for the researcher (see Appendix F). Further, it was assumed that social media group administrators of professors of higher education groups on LinkedIn and Facebook granted authority to the researcher to post an invitation to participate in the study (see Appendix G).

It was also assumed that the institutions possessed trustworthiness in allowing participants to answer the survey. Participants were asked about their experiences with persons with ADHD in the demographic portion of the survey. It was assumed that the participants could be trusted to answer the questions accurately in order for the researcher to analyze the quantitative data. It was assumed that those who to responded to participate were professors in

higher education who currently were employed in the United States. Further, it was assumed that participants would be honest when providing responses to the survey questions.

Limitations. Using a causal-comparative research design, this research examined the relationships that existed between specific independent/dependent variables and did not attempt to determine a cause for these relationships. This researcher employed the reliance on four higher education institutions participating in the study in the United States (in Massachusetts, Texas, and Oregon) to identify participants. Reasonable steps were taken to eliminate limitations, including contacting higher educational institutions and soliciting social media groups for professors in higher education in order to obtain a sample of participants.

Further, the original instrument measured the dependent variable of "stigma" or "perception" employed reliability and internal consistency originally collected from a German teacher population and on a 5-point Likert-type scale. This instrument utilized a 5-point scale which included a neutral response. This researcher and committee felt that this may skew the results of the study, there as discussed in the methodology portion of this research, changed the instrument to be a 4-point Likert-type scale. Further, participation bias could have influenced this research. By knowing what the researcher is examining, participants may choose answers specific to what they feel the researcher would like for a response. Also, some participants may have experience fatigue while taking this survey and choose responses without reading the question.

However, specific to this research, the researcher attempted to examine perceptions of professors toward adult college students in the United States. Therefore, this researcher ran internal consistency and reliability tests and determined the reliability of this specific instrument on the population of United States professors. Furthermore, this researcher modified the

instrument into a 4-point Likert-type scale to gain a better understanding of professors' perceptions by eliminating the neutral response option. Thus, reliability and internal consistency tests were run to confirm validity.

Delimitations. The study was delimited to higher education professors who worked at one of four United States higher educational institutions. Participants were also recruited via several higher educational institutions spanning Massachusetts, Texas, and Oregon, and through four social media groups on LinkedIn and Facebook. The actual institution or location of each participant was not identified in the research. Therefore, this research was not able to determine whether perceptions were dependent upon geographical areas within the United States.

Chapter 1 Summary

In Chapter 1, the researcher introduced the research purpose, research questions, and methodology for use in this study. For the study, Goffman's (1963) theory of stigma guided the conceptual framework. Through research examined for this dissertation, a gap of information was identified with regard to adults with ADHD (Ramos-Quiroga et al., 2014). An established need to examine the perceptions of college professors teaching adults with ADHD (Fuermaier et al., 2014; Vance & Weyandt, 2008) was identified. In addition, an examination of the relationships between academic discipline type (professors in education and professors in other academic disciplines) and training/courses taken in ADHD, and certification in special education were taken into consideration with regard to perceptions toward adults with ADHD. Additionally, descriptive data collected explored academic discipline types (applied science, education, formal sciences, humanities, natural sciences, and social sciences)

In Chapter 2 the researcher introduces the literature review utilized to design the research of this dissertation and the conceptual framework, which relates to Goffman's (1963) stigma theory. In

Chapter 3, the research methodology is discussed. In Chapter 4, the researcher discusses the demographic analysis, data collection analysis, and description of the results obtained through the study and analyzed. In Chapter 5, the results obtained through the research are interpreted, with a discussion of the limitations and future recommendations based on the results of the study.

Chapter 2: Literature Review

In various published articles, researchers have cited reports from students with disabilities who have had negative experiences with their professors (Bolourian et al., 2018). Students have reported that faculty members were not approachable, non-accommodating, and belittling toward students with disabilities (Becker & Palladino, 2016; Bolourian et al., 2018). Research has shown that higher education professors may not be sufficiently knowledgeable with regard to the laws and regulations of the Americans with Disabilities Act (ADA, 1990), and Becker and Palladino (2016) argued that the ways in which faculty members treat adult students with disabilities who require accommodations could help or hinder the true meaning of the laws. As a result, ignoring faculty perceptions of students with disabilities could contribute to insufficient accommodations on the part of the students (Becker & Palladino, 2016).

Furthermore, students with ADHD may be reluctant to disclose their disabilities to student services offices or their professors (Bolourian et al., 2018). Some students with disabilities may experience or perceive stigma, which can decrease the possibility that they will seek help from their schools' disability services offices (Lefler, Sacchetti, & Carlo, 2016). Attention deficit hyperactive disorder is a condition that is generally associated with stigma and discrimination (Mueller, Fuermaier, Koerts, & Tucha, 2012). Research has shown that stigmatizing behaviors exist toward groups of individuals with ADHD (Mueller et al., 2012) and that many of the symptoms associated with ADHD (which often violate the standards of "normal" behavior) can result in social rejection from peers, isolating behaviors, and discrimination (Dosreis, Barksdale, Sherman, Maloney, & Charach, 2010).

The stigma that students with disabilities encounter can impact their experiences in higher education, including experiences with faculty members; perceptions of others and

themselves; degree program choice; and the willingness to pursue classroom accommodations (Lightfoot, Janemi, & Rudman, 2018). As stated by Thompson and Lefler (2016), there is a large amount of literature published that examines stigma associated with children and adolescent populations and few studies that examine the stigma associated with adult ADHD. Examining the distinct differences between educational setting (elementary school, high school, and college) could lead to a better understanding of the gaps that exist in research on stigmatizing behaviors toward adults with ADHD (Fuermaier et al., 2014). Specific to this research, examining just the distinct difference in the college educational setting could lead to a better understanding of the gaps which exist in research.

Some college students have reported that professors were not willing to make required accommodations and that the student felt publicly shamed by professors regarding the need for accommodations (Lefler et al., 2016). Research by Bolourian et al. (2018) cited student reports that some professors did not view ADHD as a valid disability. Researchers have hypothesized that some neurodevelopmental disorders, such as autism, may be regarded as more legitimate than ADHD by higher education faculty members (Bolourian et al., 2018). Despite the fact that some professors include statements about campus disability services in their syllabi, other professors choose to ignore the issue of disability and do not prioritize the need for accommodations in the classroom (Lefler et al., 2016). Furthermore, research has indicated that professors, along with their peers, view students with ADHD more negatively than positively (Chew, Jensen, & Rosén, 2009).

Minimal research exists on the efficacy of accommodations made available to students with disabilities in higher education institutions (Lefler et al., 2016). The majority of the research on higher education students with ADHD with regard to issues in participation and functioning is

fragmented, with a dearth of research regarding the influences of participation and functioning issues on success in higher education (Jansen et al., 2017). Furthermore, the majority of literature in these areas focuses on primary and secondary education settings, and no research has determined whether the information gained in these studies applies to the higher education setting (Hart, Massetti, Fabiano, Pariseau, & Pelham, 2011). Jansen et al. (2017) suggested further research on issues that pertain to the environment, functioning, and evaluative measures pertaining to teaching students with disabilities in higher education, as a step toward improving academic accommodations.

The conceptual framework and theory that guide the present study are presented within the framework in this chapter. Subsequent sections present a review of the literature on adults with ADHD, and the lived experiences of those with the disorder, particularly with regard to the transition from high school to college. Also discussed is an overview of the laws and regulations that govern education and accommodations for students with disabilities, the types of classroom-based and other supports for college students with ADHD, and an overview of the literature regarding higher education professors' perceptions of adult students with ADHD. Subsequent sections focus on the existing research pertaining to college students with disabilities taking online classes. The literature review provides relevant information about adult students in higher education who have a diagnosis of ADHD. The literature review also discusses the current scholarly research regarding higher education professors and their perceptions toward students with ADHD.

Conceptual Framework

This dissertation was guided by the theory of stigma by Goffman (1963) and examines the perceptions of professors of students with ADHD. Goffman (1963) theorized that stigma

exists toward a group of individuals who have a disability. With regard to this dissertation, the group of individuals with a disability is the adults with ADHD. Further, students with ADHD can develop mechanisms to better understand how their disability impacts their learning processes, as well as their ability to complete tasks, access support, advocate for themselves, and regulate their behaviors (Couzens et al., 2015). It is through personal experience and knowledge of the relevant research that higher education instructors can better understand and serve college students with ADHD (Vance & Weyandt, 2008). Based on the personal experience of the researcher and the existing relevant literature, this researcher developed a conceptual framework to guide this study.

Future research is needed to determine instructors' perceptions toward students with ADHD, taking into consideration instructors' personal experience with ADHD, experience working with students with ADHD, and specific certifications/content knowledge that may have acquainted them with ADHD (Fuermaier et al., 2014). In addition, future researchers may elucidate how instructors' personal experiences and interactions with students affect their students, as well as the possible effects that can manifest from instructors' characteristics and behaviors toward students with ADHD (Fuermaier et al., 2014). Fuermaier et al. (2014) suggested that gaps of information in research are the result of a lack of available assessment tools to accurately determine levels of stigmatization against individuals with ADHD. It is also imperative that future research examines stigma levels since the research has shown that students who have these negative experiences underreport them (Thompson & Lefler, 2016). Fuermaier et al. (2014) suggested that future research should consider utilizing objective tests that examine content knowledge of, or certifications in, ADHD (Fuermaier et al., 2014). Lightfoot et al. (2018) suggested examining the nature of discrimination, perceptions impacting students with

disabilities, and how discrimination impacts student success in higher education (Lightfoot et al., 2018).

Topical research. Many published research articles on the topic of adults with ADHD have indicated the presence of negative stigma (Bolourian et al., 2018; Fuermaier et al., 2012; Fuermaier et al., 2014; Lebowitz, 2016; Masuch et al., 2018; Thompson & Lefler, 2016), perceptions (Gallo et al., 2014; Mulholland, 2016; Sciutto, Terjesen, & Frank., 2000), and discrimination (Doikou-Avlidou, 2015; Stevens, Schneider, & Bederman-Miller., 2018) toward adults in the general population with ADHD. Nonetheless, Thompson and Lefler (2016) advised that additional research is needed to investigate the stigma levels attached to ADHD in adults, and Lebowitz (2016) reported evidence of stigmatization toward individuals of all ages with ADHD after conducting an empirical search of all relevant literature.

When identifying students with a disability, it often creates a stigma, further creating negative stereotypes that can exist for students with learning disabilities (Shifrer, 2016). An educator's expectations of a disabled student are lower when compared to those for non-disabled peers (Shifrer, 2016). Many studies have noted that professors have been willing to accommodate students with disabilities (Bourke, Strehorn, & Silver, 2000; Murray, Wren, & Keys., 2008; Thompson, Bethea, & Turner, 1997). However, even with a willingness to accommodate, some faculty members nonetheless may be unaccommodating or downplay the needs of students with disabilities (Becker & Palladino, 2016). Lightfoot et al. (2018) stated that further research was needed to understand the discrimination that these students may face, as well as the impact on their postsecondary educational success. It is imperative to increase knowledge and awareness with regard to adults with ADHD (Ramos-Quiroga et al., 2014). Sniatecki et al. (2015) studied disability as a whole without segmenting categories of disability

and recommended isolating categories of disabilities and examining each disability independently, such as ADHD by itself (Sniatecki et al., 2015).

Various research studies from the perspective of students indicated that stigma from higher education professors exists toward adult students with ADHD (Bolourian et al., 2018; Gallo et al., 2014; Masuch et al., 2018; Thompson & Lefler, 2016; Vance & Weyandt, 2008). Lebowitz (2016) published an empirical literature review on research relating to the perceptions of adults toward children with ADHD; adults with ADHD; clinicians toward individuals with ADHD; teachers toward adults with ADHD; and experiences of parents of students with disabilities and stigmatization, attitudes, and perceptions toward individuals with disabilities The researcher categorized each article in several different topic areas related to students with ADHD (Lebowitz, 2016) and included a small section that illustrated the research on teachers and their attitudes toward adult students with ADHD (Lebowitz, 2016). Although the section on adults with ADHD reviewed a small amount of published literature, Lebowitz examined two relevant articles and concluded that there was significant evidence of stigmatization toward adults diagnosed with ADHD (Lebowitz, 2016).

In a recent study conducted by Stevens et al. (2018), the researchers asked professors at a private college to complete a survey with questions regarding ADA-based laws, regulations, and accommodations. The researchers utilized the *ADA Faculty Questionnaire* (ADAFQ), which was an adaption by the researchers from several nonexperimental instruments and was approved by two professional experts: (a) a school psychologist with special education teaching experience (that included direct knowledge of ADA and Section 504) and coursework in measurements of tests and assessment practices; and (b) the coordinator of disability services for the college, who held a Master's degree in college counseling. The researchers collected data regarding

participants' awareness, preparedness, age, gender, level of education, and employment status via the demographic portion of the instrument. The instrument utilized ordinal means to collect data for nine questions using two Likert scales; the first instrument rated survey questions using *agree* and *disagree*, while the second rated survey questions using *very familiar*, *somewhat familiar*, and *not familiar at all*. The sample included 72 faculty members who responded to the survey; however, the authors did not document the total number of faculty members invited to participate. The results showed that 45% of respondents were full-time or senior half-time faculty; 52.8% of respondents were adjunct professors; approximately half of the respondents were over the age of 50; and 64.8% of the respondents indicated that their highest degree was a Master's degree.

The results from Stevens et al. (2018) showed out of a total of participants (n = 72), 11.6% (n = 8.35) of the faculty member respondents felt that students who received accommodations for a documented disability had an unfair advantage over students without a documented disability who did not receive accommodations. This attitude may result from deficiencies in job training for newly hired professors or a lack of ongoing training and preparedness for professors in higher education regarding students with disabilities. Thirty percent of the respondents indicated that they received most of their information pertaining to students with disabilities from coursework for their specific degrees, while 20% (n = 21.6) indicated they received training via an office of disability services. The authors noted the need for further training for faculty members on ADA laws, as well as on methods for accommodating students with disabilities. Twenty-five percent of the respondents indicated that they faced various challenges in preparing coursework for students with disabilities (n = 18). While 63.2% of faculty indicated that they sought assistance from a coordinator for disability services (n =

45.50), 56.5% reported having insufficient information on the coordinator's role (n = 40.68). The researchers ran a correlation between the two variables (awareness and preparedness) and found a positive correlation, $r(61) = .371$, $p = .003$. The researchers concluded from this positive correlation that the more awareness an individual has regarding ADA laws and requirements, the more prepared he or she is to accommodate students with disabilities.

In addition, Becker and Palladino (2016) examined the attitudes and perceptions of faculty members toward students with disabilities in a mixed method research article. The researchers randomized a table that consisted of 1,409 tenure-track and tenured faculty members from a Midwestern university in the U.S. and identified 600 potential respondents. Each potential participant was invited via a postcard to take the survey and receive a follow-up email. Of the 600 potential participants, 127 faculty members completed the survey, and 56% had seven or more years of experience in higher education teaching. The survey was designed as a Likert-type scale and sought to gain data on the perceptions and attitudes of faculty with regard to students with disabilities. The researchers also included an open-ended question that solicited opinions on providing accommodations.

The results indicated that faculty members demonstrated a willingness to accommodate students; however, there was a notable subgroup of participants who held negative perceptions toward students with disabilities (Becker & Palladino, 2016). The researchers stated there is a need to further examine professional development opportunities about accommodations for students with disabilities as well as professors' perceptions of accommodations, and stated that the study provided only a small snapshot of the viewpoints of professors and may have missed other personal perceptions. Specific to the research site, the researchers stated that faculty members would benefit from further professional development in this area and suggested future

research to replicate and extend the survey to include a qualitative component, including individual and group interviews, in order to improve the experiences of both students with disabilities and faculty members.

This researcher completed an examination of existing research on students with mental illness or acquired brain injuries found in a scoping review by Venville et al. (2016). The researchers included articles that discussed ADA regulations published in English between 1990 and 2012. A total of 669 abstracts were identified (398 on mental illness; 250 on acquired brain injury; and 21 on both mental illness and acquired brain injury) and each assessed for relevance. In the study, researchers selected 42 articles for inclusion in the review with the majority (34) of the articles from the United States; one article each from Canada and the United Kingdom; and three from Australia. The researchers qualitatively coded the findings of each of the articles within a table set with regard to student accommodations. The researchers then offered a discussion and suggested future studies, including the examination of the barriers that exist in higher education, such as environmental and social barriers and attitudes toward individuals with mental illness and acquired brain injuries.

Fuermaier et al. (2014) conducted a comparison study using their developed instrument in Germany, comparing stigma levels of 170 secondary school teachers to 170 non-educators with college degrees (Fuermaier et al., 2014). The researchers limited the study to specific influences in education in Germany and did not include a wider scope that may exist in other countries, such as the United States. The limitations of the study included the use of a quantitative instrument, previously published by the researchers, that utilized a self-report, 5-point Likert-type scale to measure levels of stigmatization towards adults with ADHD (Fuermaier et al., 2014). In recognition that Fuermaier et al. (2014) based the study on a self-

report instrument, the validation and reliability of the instrument can be considered a limitation. Fuermaier et al. (2014) noted a previous study conducted by Kos, Richdale, and Jackson (2004) that examined knowledge of ADHD in preservice versus in-service teachers. The researchers concluded that in-service teachers (*SD* = 4.6 or 52.6%; the average score of 4.77) had more perceived knowledge than did the preservice teachers (*SD* = 2.2 or 47.7%) (Kos et al.). The researchers calculated the difference between knowledge and perceived knowledge of preservice teachers, $F(1,163) = 64.99$, $p < .001$ and in-service teachers, $F(1,163) = 53.37$, $p < .001$ (Kos et al.). The researchers concluded from the means that actual knowledge was significantly higher in both groups than perceived knowledge (Kos et al.).

Formal theory. This dissertation is guided by the Gofman's (1963) theory of stigma. The theory that guides the research in this dissertation specifically must relate to perceptions of higher education instructors toward their adult students with ADHD. Creswell (2018) posited that philosophical theories, although hidden, play a significant role in research. Furthermore, utilizing theories in research helps guide the type of research that will be performed and offers a logical guide to conducting the research (Creswell, 2018).

Goffman (1963) described stigma as the perception of negative attributes, such as being a criminal; being mentally ill or disabled; or having a tribal affiliation (such as race or ethnicity) that exist in a society that yields in a social identity that portrays the individual as defective. The theory of stigma operates under the assumption that perceived undesirable deviance is dependent upon reaction levels, thus creating stigma (Bos, Pryor, Reeder, & Stutterheim, 2013; Goffman, 1963). However, Goffman (1963) concluded that even though stigma does exist, there are groups of individuals who may have a disability, such as ADHD, but will never be victims of stigma. Fuermaier et al. (2014) found that educators overall have lower levels of stigma toward adults

with ADHD. Further, Bolourian et al. (2018) concluded that students with ADHD, had overall good experiences in college except for a few issues with some teachers. Pryor and Reeder (2011) extended Goffman's theory by examining public stigma, which consists of the psychological and social reactions to an individual perceived to have a deviant condition.

Described within its theoretical framework, stigma emphasizes the driving force on a phenomenon in which behavior, reputation, and attributes drive social rejection toward individuals who possess deviant conditions (Goffman, 1963). The theory is driven by the influences of human behavior and the attributes that exist among undesirable groups of individuals, which manifest perceptions of stigma. Individual beliefs influence societal perceptions of acceptable and unacceptable identities. Goffman concluded that stigma occurs when a reaction from individuals spoils the perception of normal identity. Further, the author stated that stigma is a gap between the *actual social identity* and the *virtual social identity*. Stigma can also classify an individual with a mental illness, such as ADHD, as an undesirable individual or a rejected stereotype.

A portion of Goffman's (1963) theory on stigma pertains to classifying stigma according to three distinct categories of individuals: those who are stigmatized, those who are not stigmatized, and those who bear the deviant condition but are considered to be "wise" and thus are not stigmatized (Goffman, 1963). Goffman (1963) defined "wise" as individuals who have a deviant condition but are not privy to stigmatizing beliefs and behaviors and are accepted by society. However, Goffman (1963) did state that the "wise" may experience stigma in certain circumstances. Considering Goffman's (1963) assumptions on the "wise," a professor's perceptions of students may influence no stigma whatsoever toward adult students with ADHD. Fuermaier et al. (2014) echoed this by stating that, overall, educators have lower levels of

stigma; however, it is crucial to conduct further research examining different institutional levels such as higher education and comparing educators and non-educators with regard to perceptions and stigma.

Goffman (1963) stated that individuals who project stigma against the socially unaccepted might employ stigma by means of threats, depersonalization, or aversions, which, in turn negatively affect the receiver's self-esteem and cause anxiety. Stigma and perception directly affect how one perceives one's capabilities; therefore, if a student does not believe in him- or herself, his or her performance outcomes will likely be lower. Conversely, if a student feels that he or she can achieve in a subject area, his or her performance levels are likely higher.

Review of Research Literature and Methodological Literature

The following section examines the available published research and methodological literature regarding higher education professors' and students' points of view on ADHD. This section introduces research on living with inattentive and hyperactive disorders and examines the symptomology of the disorder and the three types of ADHD; transitions from high school to higher education; perceptions and stigmatization of professors toward individuals with ADHD; the laws surrounding the Section 504 rehabilitation regulations; student perceptions of stigma from professors; and the available literature regarding professional development, special education, and ADHD.

Living with inattentive and hyperactive disorders. ADHD is diagnosed in approximately 5% of children and 2.5% of adults; it diagnosed more frequent in males than in females (APA, 2013). Further, statistics reported by Visser et al. (2014) stated there was approximately 2 million more children diagnosed with ADHD between the ages of four and seven than in 2011 (Visser et al., 2014). Between the years of 2007 and 2016, adults diagnosed

with ADHD rose from .43% to .96%, equating to an approximate 123% increase (Chung et al., 2019). Further, during the same period in children ages between 5 and 11, the rate of diagnosis rose from 2.96% to 3.74% (Chung et al., 2019).

The assignation "ADHD" is an umbrella term for all symptoms associated with ADHD, which is considered a neurological disorder (APA, 2013) and is viewed as an exaggeration of perceived "normal" behavior (Goldstein & Naglieri, 2008). Physicians and psychiatrists who diagnose ADHD use a neuropsychological or full psychological evaluation, such as a Vanderbilt questionnaire in conjunction with present symptoms and criteria listed within the Diagnostic and Statistical Manual of Mental Disorders (DSM) (APA, 2013). The various symptoms associated with ADHD; including inattentiveness, lack of focus, mood swings, trouble following rules, and hyperactivity; must last 6 months or longer and must have an onset prior to 12 years of age for children and 17 years of age for adolescents and adults. There must be least five symptoms present, with the disorder manifested in more than one setting. A trained clinical professional can make a diagnosis (APA, 2013).

According to Goldstein and Naglieri (2008), ADHD has no neuropsychological or developmental markers for diagnosis and has a distinct appearance due to the persistent cluster of symptoms that makes it unique from other developmental and mental disorders. Children with ADHD have a reduction in the inhibition of their behavioral control and often exhibit negative emotions (APA, 2013). Environmental factors such as low birth rates; child abuse history; and exposure to alcohol and other toxicants may attribute to the manifestation of the disorder (APA, 2013). The genetics and heritability of ADHD, especially in biological first-degree relatives, are substantial in diagnosis; however, they are not sufficient to determine a causal factor (APA, 2013) Adults with ADHD, when compared to their peers without the diagnosis, are more likely

to be less financially secure; to be at higher risk for substance abuse; to have higher odds of divorce; to have less education; and to be more isolated from friends and family (APA, 2013). ADHD is considered a learning disability or other health impairment (OHI) (Hamblet, 2014).

A reviewed research article by Gallo et al. (2014) proposed that a specific examination of college students' perspectives on living with ADHD would be beneficial. The researchers conducted a phenomenological study on college students with ADHD and their perceptions of self. Three students participated, two of whom received the diagnosis of ADHD in elementary school and one as a high school freshman. The researchers interviewed the participants three times. The first interview examined the students' educational experiences; most and least favorite teachers; and experiences with special education programs. The other two interviews allowed the participants to retell their stories about living with ADHD. The researchers generated transcripts of the interviews and submitted them to the participants for their approval, then coded the responses from the interviews into two categories: "skills, abilities, and attributes for successful college career" and "valuable and worthwhile for a successful college career" (Gallo et al., 2014, p. 3). The participant diagnosed as a freshman in high school did not receive special education supports and reported that she felt "abandoned" and struggled in school due to the lack of an earlier diagnosis (Gallo et al., 2014, p. 4).

Gallo et al. (2014) concluded that college educators should maintain a professional environment, along with accuracy and efficiency, when delivering course content for not only students with ADHD but all students. Two of the study participants reported that professors had not read their disability statements and that when the students asked for clarity on questions, professors employed humiliation and sarcasm in response. One student reported being chastised in front of the class by a professor when he required a less distracting and quieter space; this

professor stated directly to the student that he felt the student was inventing excuses. This berating style did not enable the students to feel comfortable in the classroom environment, and the student felt less likely to receive positive responses when approaching instructors for assistance.

The further consensus was that the students felt that professors should take the time to understand and learn about ADHD (Gallo et al., 2014) and that a punitive classroom environment made it much harder for students with ADHD to approach professors outside of class for help. Gallo et al. stated that professors who lack acceptance and understanding of ADHD create barriers for students. Their results also showed that research continues to suggest that these negative instructor perceptions persist in higher education. The limitations of the study included the small participant size as well as the fact that the participants possessed mild to moderate levels of ADHD. The researchers suggested that future studies include additional phenomenological research on adolescents and children with ADHD in order to collect data and give students a voice with regard to making independent and informed decisions around life, family, and school. Gallo et al. suggested that new teachers should receive knowledge on various curriculum approaches that are appropriate for development strategies and to teach with open minds.

Students with disabilities such as ADHD are enrolling in college at a growing rate (Kim & Aquino, 2017; Sniatecki et al., 2015). According to researchers, students with disabilities in a higher education institution are more likely to repeat classes, not finish a degree program, and have lower testing scores (DuPaul et al., 2009; Kuriyan et al., 2013). Students with ADHD have difficulties with retaining attention, executive functioning, organizing, completing tasks such as studying, and social ineptitude (Barkley & Murphy, 2011; Emmers et al., 2017; Weyandt et al.,

2013). Therefore, with the growing number of students with disabilities entering college (Kim & Aquino, 2017; Sniatecki et al., 2015), further research on the growing population of students with disabilities is crucial.

Secondary and higher education disability laws. Legislation pertaining to providing accommodations for students with disabilities exists in the form of the Section 504 Rehabilitation Act and Americans with Disabilities Act (ADA) (Americans with Disabilities Act of 1990, Pub. L. No. 101-336, § 2, 104 Stat. 328, 1991; Section 504 Rehabilitation Act of 1973, 34 C.F.R. Part 104; Venville et al., 2016). Nonetheless, the available research shows growing data indicating that students with disabilities experience barriers at the personal and institutional levels when planning to attend college (Venville et al., 2016). For students transitioning from high school to a higher educational institution, under the Individuals with Disabilities Education Act (IDEA) the IEP team meets prior to the student graduating from high school (Gallo et al., 2014). In high school, students with disabilities may have had an IEP or a 504-accommodation plan for one or more of diagnosed of 13 disabilities, including specific learning disability, other health impairment, autism spectrum disorder, emotional disturbance, speech/language impairment, visual impairment (including blindness), deafness, hearing impairment, deaf-blindness, orthopedic impairment, intellectual disability, traumatic brain injury, and multiple disabilities (IDEA).

Under section 12102 of the Americans with Disabilities Act of 1990 (ADA), the definition of disability states:

> The term “disability” means, with respect to an individual (IA) a physical or mental impairment that substantially limits one or more major life activities of such individual; (ii B) a record of such an impairment; or (iii C) being regarded as having such an

impairment. (Americans with Disabilities Act of 1990, Pub. L. No. 101-336, § 2, 104 Stat. 328, 1991)

Students who are diagnosed with a disability, as defined under the ADA, qualify for accommodations within the higher education setting.

IDEA was enacted in 1990, and reinstated in 1997 and 2004. In 2015, the IDEA act was amended under the Every Student Succeeds Act (ESSA). The IDEA act includes the requirement for Individual Education Program (IEPs) for students who fall under the 13 disability categories who determine if specialized instruction relating to a student's disabilities, in pre-kindergarten through their senior year of high school, and may expand into transitional services for some students until the age of 22. These plans mandate that teachers and administrators must ensure special education services that meet student needs (Ramsay & Rostain, 2006; Shallish, 2015). Furthermore, students with disabilities are considered a protected class of individuals under the ADA (Shallish, 2015). IEPs are legal documents for students enrolled in pre-K to Grade 12 education and transition years (after the senior year of high school to 22 years of age). Under an IEP, students can be granted specialized services (such as speech, occupational therapy, physical therapy, autism services, and special education teacher) related to their disability. When this document is created and signed, the student's school district is responsible and obligated to ensure the services, accommodations, and modifications within the IEP are met. When a student completes high school and transitions to postsecondary education, this document must be converted into a 504 accommodation plan.

In 1990, the Americans With Disabilities Act (ADA, 1990) was established to help all individuals, regardless of age, with regulations for the benefit of persons with disabilities (ADA, 1990). This regulation suggests that discrimination is illegal to any individual in public activities,

services, or programs. (ADA, 1990). In 2008, the Americans With Disabilities Act Amendment Act (ADA, 1990) further expanded ADA regulations and provided new stipulations and provisions (Dong & Lucas, 2016), including the mandate for accessibility requirements for newly built facilities and renovations on older buildings (ADA, 1990). Under Title II, the Americans with Disabilities Act ensures that students with disabilities have equal access and opportunities to earn a higher education degree (ADA, 1990).

It is important to note that postsecondary schools operate under different federal regulations and laws than higher educational institutions, which can create differences in the types of accommodations and services for which a student might qualify (Wadlington, DeOrnellas, & Scott, 2017). Coverage under this law for state-funded schools lies in Title II, and for private postsecondary schools under Title III (ADA, 1990). Colleges and universities that receive federal assistance must follow guidelines under ADA Title II; faculty members of federally-funded higher educational institutions may not discriminate against students with regard to admission, recruitment, and generalized treatment of students (ADA, 1990). However, under Title III, if a higher educational institution has fewer resources, they are not required to provide as many accommodations. Private educational institutions are equally required to provide accommodations under both the ADA and Section 504 (ADA, 1990). Furthermore, higher education institutions may not limit the number of students with disabilities on campus, exclude students from programs that they are qualified for, suggest that a student take a different program of study, make admissions decisions solely based on disability, or use any type of admission tests that are not reliable to measure qualifications (ADA, 1990). Under Title II, students who have documented disabilities can request auxiliary aids such as note takers, electronic readers, audiobooks, Braille translations, and other accommodations and other tools

that would benefit them in their experiences in higher education programming (ADA, 1990). Administrators and faculty members in higher education institutions must ensure that their programs are accessible for all students, including those with disabilities.

It is essential when researching professor perceptions toward adult students with ADHD to understand the various laws that exist within the United States that protect students with disabilities. The Americans with Disabilities Act (ADA, 1990) exists to eliminate discrimination against individuals with disabilities and protects adult students with disabilities in higher education institutions. Nonetheless, Stevens et al. (2018) cited that professors can be aware of the ADA laws and regulations, yet feel that when students use accommodations, it creates an unfair advantage against students without disabilities. This finding indicates the need for additional research to fill the gaps that exist regarding these negative perceptions held by professors.

Professor's perceptions, experiences, and stigma of individuals with ADHD. As cited in several research studies, most faculty members are willing to accommodate students with learning disabilities (Bourke et al., 2000; Murray et al., 2008; Thompson et al., 1997). Instructors and students require open communication to promote academic success. Some instructors provide individualized instruction to help meet their students' individualized learning needs (Lightfoot et al., 2018) and may have an open-door policy and office hours to provide extra help. It is reasonable to surmise that professor perceptions directly influence students with disabilities (Becker & Palladino, 2016), specifically those with ADHD.

An examination was undertaken regarding faculty attitudes and knowledge with regard to students with disabilities via a quantitative study using online surveys to assess faculty member (n = 123) perceptions and attitudes at one university in the United States (Sniatecki et al., 2015).

The survey utilized a 5-point, Likert-type scale with four demographic-type questions and 30 questions relating to faculty perceptions and attitudes. The researchers concluded that, overall, faculty members held positive perceptions toward students with disabilities. However, if students had mental health issues or learning disabilities, faculty members were more likely to have negative attitudes. The study also indicated some gaps of information that existed with regard to accommodations, which could ultimately impact students negatively.

Respondents to the survey strongly felt that professional development opportunities with regard to students with disabilities would be beneficial (Sniatecki et al., 2015). The researchers suggested that future studies should focus on obtaining a larger, more diverse participant sample from more institutions, and examine public colleges versus private college, and 2-year colleges versus 4-year colleges. The researchers also suggested investigating geographical differences in the perceptions and attitudes of faculty members. Furthermore, they suggested examining the employment status of faculty members (full-time or part-time) and comparing differences in attitudes and perceptions with regard to faculty by department. Sniatecki et al. suggested that professor attitudes and perceptions should continue to be explored with regard to three main disability types: (a) physical, (b) learning, and (c) mental; and to consider different delineations of disabilities and to compare them to the different types of perceptions and attitudes. The researchers also suggested examining whether professional development affects perceptions and attitudes in faculty members toward students with disabilities. One way to conduct this type of research is to design and implement professional development opportunities for faculty through workshops and lectures and collect data to examine the effects.

Buizza, Ghilardi, and Ferrari (2017) examined and collected data with regard to the perceptions and attitudes of faculty members toward students with mental illness. The

researchers sent an invitation to participate to 1,079 professors, and 486 professors completed the questionnaire. The researchers utilized a quantitative survey design approach and administered the *Community Attitudes to the Mentally Ill – CAMI* instrument, with semistructured interviews. The instrument included 40 questions rated on a 5-point Likert scale and the interviews centered on collecting demographic information. From the results, the researchers concluded that when faculty members had a higher level of education or had personal lived experiences with someone with a mental illness, they were more accepting and displayed less stigma. In addition, when faculty members were employed in higher professional roles, they showed more acceptance toward those with mental illness. The researchers did not discuss future suggested studies.

Harrison (2015) researched the perceptions of faculty members toward students with intellectual disabilities in dissertation research using a qualitative approach. The researcher had faculty members complete a questionnaire and found that professors are aware of the laws and regulations for students in K−12; however, they were mostly unaware of the regulations and laws pertaining to higher education rights. Future suggested research included an evaluation of professors' levels of stigma for various types of disabilities since the data showed that the level of stigma varied based on disability type. Harrison also suggested a longitudinal study to assess professor exposure to students with disabilities in order to assess whether their perceptions and levels of stigma changed over time. With regard to the suggested research by Harrison, collecting data that encompasses an evaluation of stigma from professors toward adult students with ADHD can aid in closing the gap that exists in the literature.

Thompson and Lefler (2016) examined the stigma toward college students with ADHD from the perspectives of students with and without ADHD. In two phases, researchers recruited 135 undergraduate students in phase one and 35 in phase two from a Midwestern U.S. public

university via the psychology department. Researchers used deception methods to record data; each participant independently completed a task by themselves after being informed prior that they would be working with a partner. After the partners did not show up, the participants' reactions were recorded via the *Anticipated Behavior Form* (ABF), a 7-point, Likert-type with 11 questions relating to the participants' opinions of the fictitious partner; and the *Social Distance Scale* (SDS), a 7-point, Likert-type scale with 12 questions. Phase two involved the same design; however, there were only two independent variable levels; the behaviors and label of ADHD and the behaviors and label of depression; instead of four as in phase one (the label of ADHD, behaviors associated with ADHD, label of ADHD and behaviors associated with ADHD, and no label and no behaviors associated with ADHD). The researchers concluded that higher levels of stigma were associated with the behaviors of individuals who exhibited similar behaviors such as those seen with individuals with ADHD and not the label of ADHD alone. However, additional research is needed to clarify ADHD stigma levels toward adults. This research demonstrated the need for additional published literature that examines stigma levels toward adults with ADHD.

Daley and Rappolt-Schlichtmann (2018) examined the existing research and suggested future research, including measuring stigma levels from a relational standpoint with teacher-, peer-, parent-, and school social relationships. Similarly, Fuermaier et al. (2014) suggested a comparison study measuring the stigma levels of teachers who fit into specific criteria, such as those with special education certifications, those with experience with individuals with ADHD, and those with professional development focused on ADHD/disabilities. Similarly, Sniatecki et al. (2015) suggested studying the frequency of contact (personal or professional) and experiences with individuals with disabilities from the perspective of educators. Ramos-Quiroga et al. (2014)

suggested that pre-degree programs in universities should provide an educational component on ADHD in adults due to the high, undiagnosed rate of the disorder.

In another study, Mueller et al. (2012) completed a methodological review on research regarding stigma from teachers, adults, children, and the public toward both children and adults with ADHD. The researchers examined articles published between 1994 to 2011 on children and adults with ADHD with regard to stigma levels. The articles were categorized into: stigma, the level of stigma from children without ADHD, educators' levels of stigma, the publics' level of stigma, and courtesy. The researchers concluded that professor attitudes might be viewed as devaluing and doubting students when they do not value adult students with learning differences the same as students without learning differences. Published literature on knowledge of stigma and perceptions in individuals with ADHD has been largely reliant on the opinions of those who either have ADHD or have had experiences associated with ADHD.

Consequently, researchers may have published literature that examined participants who were highly motivated to participate, which in turn limited research on factual and reliable data on knowledge and stigma levels towards students with ADHD (Mueller et al., 2012). Mueller et al. concluded that research examining graduate students with ADHD is limited, which also may have limited the existing research and how these students were represented. Further research should consider undertaking studies examining stigma levels toward adult students in graduate programs. Considering the limitations of this research and how the research may not represent an accurate account, researchers need to ensure that data is reliable and depicts actual stigma toward students with ADHD. It is imperative that future research focuses on collecting more accurate data.

Research conducted by Vance and Weyandt (2008) examined stigma levels in professors toward adult students in higher education. The researchers mailed surveys to professors at community colleges, one private university, and one university located in the Pacific Northwest or the Eastern Region of the United States. A total of 1,035 surveys were mailed, 310 surveys were returned, and 253 surveys were fully completed and used in the study. The survey included a demographic portion and the *ADHD Beliefs Scale* by Johnson and Freeman (2002). The researchers concluded that 40% of the respondents felt that students with ADHD were not equivalent to students with learning disabilities. Half of the professors who participated also felt that students with ADHD did not earn lower average grades compared to their non-ADHD peers. Approximately 25.7% of professor felt that students with ADHD should not receive any type of academic support or accommodations, such as notes from lectures or modified/accommodated assignments, while 12.3% felt that students should not receive special accommodations for ADHD. Approximately one third of the respondents felt that it was stressful teaching students with ADHD. The researchers suggested future studies that consider the perceptions and levels of knowledge that professors have toward students in higher education with ADHD, and stated that sufficient research focused on the perceptions of professors toward adult students with ADHD is not available in the published literature.

Since many adult students with ADHD choose to attend a higher education institution, researching professors' perceptions may provide a greater understanding of the challenges and issues that this population faces (Vance & Weyandt, 2008). By examining professor perceptions, administrators and faculty members in colleges and universities may better ensure that all students receive equal and fair treatment and can complete higher education degrees. Although

Vance and Weyandt's research is over 10 years old, the study remains relevant to this dissertation.

It is imperative for instructors to provide a robust system of support to aid students with disabilities to succeed academically (Becker & Palladino, 2016). Cawthon and Cole (2010) found that some professors did not want to cooperate with students requiring supports. Further, Hadley and Satterfield (2013) found that one barrier to students receiving support was negative attitudes by faculty members. Researchers found that faculty members who were not supportive demonstrated a gap of awareness and knowledge with regard to disabilities (Erten, 2011). Furthermore, Bolourian et al. (2018) noted that some professors expected students with learning differences to perform at the same level as their peers, without accommodations. Given the reported negative attitudes that students perceived from instructors, students are apt to drop out of college because of the consequences of their disabilities (Bolourian et al., 2018; DuPaul et al., 2009; Kuriyan et al., 2013).

The published literature proposes that teaching self-efficacy to online instructors is an essential component of classroom management. The researchers concluded that this factor foresees a professor's willingness to work through the various challenges that might present in an online setting (Horvitz, Beach, Anderson, & Xia, 2015). Researchers utilized a cross-sectional survey design to examine the self-efficacy of professors with regard to student engagement, teaching strategies, classroom management, and computer usage. The professors surveyed taught classes online between 2005 and 2009, and out of 345 potential participants, a total of 91 responded to the web-based survey. Components in the survey included seven questions relating to demographics, 32 on self-efficacy, and five relating to attitudes. The researchers concluded that professor self-efficacy is related to internal factors, which directly impact student

satisfaction, professor satisfaction, and overall perception toward students. The researchers found that the participating professors overall displayed positive self-efficacy. However, the responses provided by professors who participated in the survey showed that they had a better overall attitude with regard to teaching online coursework. Future research suggestions included examining methods to increase the self-efficacy of college professors who teach online.

In research conducted by Hampson, Watt, Hicks, Bode, and Hampson (2018), researchers employed qualitative methods and examined how coursework and professional development in the primary and secondary school systems on mental health conditions is important to reduce the stigma associated with mental health disabilities. The researchers interviewed 137 participants, including employers, teachers, clients, and consultants, to examine barriers that exist with regard to stigma and how it may affect future employment opportunities. Although this research utilized some participants who were not teachers, the researchers did ask questions of all participants about their experiences within schools. The participants indicated that professional development is important in schools to help reduce the levels of stigma related to mental illness. The participants also indicated that they had had little or no educational opportunities for training about mental illness and that having guest speakers to educate about mental health issues and the origins and meaning of stigma would help reduce stigma. The researchers stated the urgent need to address the issue of stigma by providing educational opportunities and suggested that future research should focus on identifying the factors that may increase or decrease levels of stigma.

An article by Hurst (2015) offered a narrative and informal self-study on a professor who went from teaching in a campus setting to teaching solely online. Hurst had been an upper-elementary school teacher when she decided to earn a reading specialist degree. Before teaching in college, Hurst worked as a reading specialist evaluating students for interventions and was

part of an individualized educational plan (IEP) team. One experience she documented referred to a fifth-grade student who was struggling with reading, only to find out that the student tested at a high IQ level of 145. The student received an IEP to help her in reading, was moved to a gifted program, and succeeded in school and through college with assistance (Hurst). Once Hurst completed her master's degree, she was offered a position working in college, teaching education majors. Eventually, she was asked to teach online classes.

Hurst (2015) gathered data to compare online classes to those on campuses, including grades, surveys, and commentary from students. In the study, a student asked to include experiences from one of her online classes in her own dissertation, examining graduate students who took online graduate courses and their perceptions (Hurst, 2015). Hurst cited an article by Simonson (1999), which stated that face-to-face classes are equivalent to online courses in terms of classroom management. Further, Hurst found the same in her research; by comparing data from her online and on-campus classes, she found that each class was equivocal in terms of student feedback and ratings. Through this research, Hurst realized she did not need to change as a teacher depending on the teaching format.

Within this section, this researcher introduces articles on the perceptions, experiences, and stigma levels of professors toward adult students with ADHD. An in-depth examination of these articles has aided in creating the conceptual framework along with additional articles from sections below. However, additional research is needed to explore perceptions of professors in higher education toward adults ADHD.

Students' perceptions of stigma from professors. Exploring higher educations students' perceptions of stigma from professors is imperative to better understand the importance of future research. Bolourian et al. (2018) researched the perceptions of adult higher education

students with ADHD or autism spectrum disorder (ASD) through interviews in order to collect data on these student populations' attitudes and perceptions toward their college experiences. The study expanded the knowledge of these students' difficulties during interactions with faculty by integrating student surveys to analyze the students' perceptions. The study included 13 students with ADHD and 10 students with ASD who were attending a 4-year university in Southern California, recruited by the college's student services department. The researchers recorded the interviews and transcribed the data collected line-by-line into 72 codes and then further categorized the data into four conventions. The researchers noted nine themes from the results: (a) influences before university; (b) academic expectations; (c) disclosure of diagnosis; (d) self-awareness in the present; (e) co-morbid conditions; (f) opinions on medication use; (g) peer interactions; (h) living and housing arrangements; and (i) anticipation of the future (Bolourian et al., 2018, p. 3333).

The researchers found that students reported receiving adverse reactions from their professors when they disclosed their disability, and some students reported that professors commented that ADHD was not a real diagnosis (Bolourian et al., 2018). A number of students reported having to go to great lengths to convince their professors that they did require accommodations. Some students at the graduate level reported that, when requesting help from a professor, they felt looked down upon. Often, students reported encountering faculty who held negative perceptions toward the ADHD diagnosis.

Some limitations of the study were the lack of contextual details available, such as the environment of the school, the climate of the school toward students with disabilities, and other environmental factors. The researchers utilized the disability service department to recruit participants for the study (Bolourian et al., 2018). Therefore, the researchers assumed that the

participating students were appropriate for the study based on their involvement with the student disability service department, which was a possible limitation. Finally, the researchers did not utilize diagnostic tools to examine the severity of participants' ADHD or ASD. Nonetheless, Bolourian et al.'s research offers evidence that stigma exists in professors toward higher education students with ADHD.

Although their research was specific to children with ADHD, Daley and Rappolt-Schlichtmann (2018) conducted a quantitative study to validate a tool on stigma relating to adolescent, middle school-aged students with learning disabilities, and their experiences with stigmatizing behavior by others. Using the *Stigma Conscious Questionnaire – Learning Disabilities* (SCQ-LD), a 5-point, Likert-scaled questionnaire, the researchers collected data from 42 participants. All students participating in the study had an average or above-average intelligence quotient (IQ) of 100 or higher, and 90% were white. The study included students with learning disabilities, including 27 students with dyslexia and 17 with both a learning disability and ADHD. Daley and Rappolt-Schlichtmann concluded that the adolescents were conscious of stigma as it related to data collected regarding self-consciousness and self-perception. They also concluded that middle school-aged students were aware of stereotypical behavior from others and that the study offered an example of how to best adapt measurement instruments to reflect specific population needs. The researchers suggested that future studies should focus on levels of stigma from society toward students with disabilities and their relationships with teachers, peers, parents, instructional, and school-related context factors. By researching various types of relationships, researchers can establish a better understanding with regard to stigmatizing behaviors.

Academic self-efficacy impacts the school performance of students with learning disabilities (Fleming & Wated, 2016). Fleming and Wated (2016) examined the relationships between the academic performance of adult students with learning disabilities, perceived stigma, and self-efficacy (Fleming & Wated, 2016). They recruited 74 students from a private college in the southeastern region of the United States who were diagnosed either with ADHD or with a learning disability. The researchers adapted the instrument *Self-Efficacy for Learning Abridged Form* (SELF-A) by Zimmerman and Kitsantas' (2014) for their study. They concluded that there was no direct relationship between academic performance and students' perceived stigma (Fleming & Wated, 2016). However, they stated that the highest levels of perceived stigma came from students who defined themselves as Caucasians or non-Hispanic. Students who were identified only by having a learning disability reportedly earned higher GPAs than did students with ADHD (Fleming & Wated, 2016). In the discussion section of the research, Fleming and Wated suggested that educational programs should be designed to promote higher levels of self-efficacy and to create a positive learning environment for students with learning disabilities and ADHD.

Feldman, Davidson, Ben-Naim, Maza, and Margalit (2016) examined academic self-efficacy in students with and without learning disabilities who were college freshmen. The researchers' purpose was "to examine predictors of loneliness and academic self-efficacy (ASE) during the first month of college" (Feldman et al., 2016, p. 67). The study recruited 344 first-year undergraduate students from a college in Rehovot, Israel and examined 85 students with learning disabilities and 146 without learning disabilities. The students identified with learning disabilities were granted accommodations under the Israeli Law of Special Education and were determined to have received the diagnosis in high school using data regarding performance in reading,

mathematics, and writing, as well as via psychoeducational evaluations. The researchers examined the students' levels of hope, optimism, academic self-efficacy, and loneliness using four different instruments: (a) a Hebrew-language adaption of the state hope scale, (b) the revised life orientation test, (c) a loneliness scale, and (d) the academic self-efficacy (ASE). The researchers distributed the instruments distributed at different time intervals, in 10 different classes. As an incentive, participants received extra credit in their classes for participating in the survey. The researchers utilized a MANOVA for preliminary analysis and to assess the model fit. It was found that the students with learning disabilities had higher levels of loneliness. Furthermore, these students also experienced lower levels of optimism and hope.

Education and non-education academic disciplines. Higher education institutions educate adult students in a variety of academic disciplines. However, most of the literature reviewed examined professors in general and did not distinguish between academic discipline areas. Few studies examined professor perceptions with regard to specific academic disciplines. The following section will focus on specific research with regard to academic disciplines.

Timmerman and Mulvihill (2015) examined the perspectives of students with disabilities that were receiving accommodations in the college setting. Researchers observed two undergraduate students enrolled in a university located in a Midwestern university known to be a disability-friendly university. Both students were females studying education; one student was legally blind, and the other had a diagnosis of autism, dyslexia, and ADHD. Researchers observed and asked qualitative questions relating to the participant's perceptions of their accommodation experiences. Further, researchers collected data on the student's experiences from grades K-12. The data was transcribed and reviewed by the researchers. Both participants stated that although they received necessary accommodations, professors did not have a full

understanding as to why the students needed them. Timmerman and Mulvihill stated that the data collected in this study should not extend to other universities or colleges and further should be limited to the data collected on the perceptions of students. Instead, future studies should focus on collecting qualitative and quantitative data on the perceptions of professors toward students with disabilities. Furthermore, the researchers cited that through their experiences collecting data, some professors were reluctant to make reasonable accommodations for students. When professors are reluctant to address the needs of the students with accommodations, reduces the likelihood that students will request accommodations in the future lessons.

Recently, a study examined social work educators' attitudes toward students with disabilities and the existence of stigma (Sniatecki et al., 2018). The researchers utilized a conceptual framework related to stigma and the cultural aspects of attitudes toward individuals with disabilities. The researchers examined the existing literature and the barriers and opportunities that may exist with regard to students with disabilities, including the role of social worker educators (Sniatecki et al., 2018). Sniatecki et al. (2018) suggested that future research should examine students with disabilities who are enrolled in social work programs and explore their lived experiences within their educational programs. Specifically, the researchers suggested that research using case studies to explore the ways in which stigma is reduced may promote more significant opportunities for students with disabilities (Sniatecki et al., 2018). As cited in this article and others, stigmatizing attitudes and negative perceptions exist from professors toward students (Bolourian et al., 2018). Sniatecki et al. (2018) suggested that future research should explore ways to reduce the stigma professors may have toward students with ADHD. Additionally, Sniatecki et al. (2018) proposed that additional research should focus on ways to reduce the stigma that can negatively affect students with disabilities.

Watson et al. (2017) examined the stigma and attitudes of higher education faculty members who taught in social work education toward individuals with mental illness. The researchers conducted a quantitative study using a web-based survey sent to faculty members of several higher education social work programs based in the United States. The researchers designed the survey to collect data on the stigma, attitudes, and perceptions that educators may have toward individuals with mental illness. Of the 2,055 faculty members invited to answer the survey, 393 responded. The researchers collected demographic data including age, race, whether the educator had a disability, gender, and whether the educator had taught a mental health course. The researchers concluded that educators under 40 years of age showed lower stigma levels and more positive attitudes toward individuals with mental illness. However, the researchers identified a small group of participants who expressed strong negative attitudes toward individuals with mental illness. This finding was highlighted by the researchers as a concern that might affect students with mental illness. Some limitations in the research included the fact that some respondents emailed the researchers questioning the broad terminology and questions in the survey and the fact that not all mental health issues are stigmatized in the same manner.

Suggested future studies included work to identify educational strategies to change negative attitudes toward individuals with mental illness. Furthermore, the current DSM categorizes ADHD as a neurological disorder; this research focused on the perceptions of students with mental illness (APA, 2013). However, mental illness and ADHD research have concluded that both are disorders associated with stigma. By furthering research on the perceptions of professors, the gap of research that currently exists regarding adults with ADHD may decrease.

Professional development, special education, and ADHD certification in higher education. Within higher education, there is a need to prepare educators adequately with professional development. Having the opportunity to take part in a professional development class can enable educators to learn improved language techniques, ways of interacting with others, conflict management (McCarthy, 2018), and the importance of engaging in professional development and continuing education (Wilson, Sztajn, Edgington, Webb, & Myers, 2017). As cited by Beaumont (2018), professors in higher education are hired based on their academic successes and may not have any formal pedagogical education.

Moriña, Cortés-Vega, and Molina (2015) examined professional development training to aid colleges in developing a more inclusive classroom design model in a Spanish university. The researchers utilized a longitudinal, biographical-narrative design approach that spanned four years and encompassed professors in several disciplines: education, experimental sciences, and health. The participants cited the unequivocal need for professors to have training in the various disabilities that students may have so they may become more aware and educated with regard to appropriate responses and perceptions toward students with disabilities. A discussion introduced ways to implement better technology in the college classroom and the need for training. The researchers suggested future studies to target the implementation of a training program in blended-learning professional development that would evaluate effectiveness.

It is imperative to examine perception levels as well as attitudes of educators toward students with disabilities (Moriña et al., 2015). This particular article is an additional research article to provide more comprehensive details, and a follow up to a previously published article on the study. The purpose of the study was to examine the potential aids and barriers to students with disabilities and elicit suggestions from students regarding how professors can improve

disabled students' educational experiences. The researchers utilized a biographical-narrative design approach and recruited 44 participants who had a disability; 38% of the students had physical disabilities, 15% had psychological disabilities, 36% had sensory disabilities, and 11% had health-related issues. The researchers concluded that professors must promote inclusion within the classroom, adapt the curriculum to meet the needs of all students, train in new technologies to aid all students, and show a positive attitude toward students with disabilities. Moriña et al. suggested that professional development opportunities should facilitate and educate instructors on different types of disabilities in order to promote awareness in higher education professors. In addition, future research should consist of the implementation of programs developed to educate professors on how best to provide services and accommodations to students with disabilities. For future research, the researchers cited that training programs were nonexistent and therefore suggested the development and evaluation of training programs for disability awareness.

Marquis et al. (2016) conducted a study examining best instructional practices and inclusive classrooms. Administrators in higher education institutions are developing inclusive classrooms in some higher educational facilities in order to bring improved educational opportunities to diverse learning populations. The researchers employed a longitudinal, qualitative design approach to collect data in three phases. Students (n = 12), educators (n = 9), and administrators (n = 4) that participated in the study were asked to reflect on their experiences in journals. The researchers concluded that professional development opportunities can enhance disability awareness and found that, when instructors have direct experiences with persons with disabilities, the persons with disabilities are impacted by the direct experience receive a positive impact with regards to their attitudes. Further, by providing faculty members with professional

development experiences regarding persons with disabilities, beneficial outcomes can be attained.

Several peer-reviewed articles on professional development encompassed the books and strategies available for implementing professional development. McCarthy (2018) presented strategies and ideas to implement for on-campus professional development. The researcher suggested that several professional development coordinators with experience planning on-campus educational courses should be planned, which are directly related to professors in higher education (McCarthy, 2018). Wilson et al. (2017) published a book on professional development in higher education. Much of the review reflects the gaps in information perceived by the authors (Wilson et al., 2017).

Richter and Idleman (2017) examined the effects of professional development and support of faculty with regard to perception of students with disabilities in online nursing educators. The researchers utilized two private universities and one state university as testing sites and offered nursing faculty members the opportunity to answer a quantitative survey. The researchers concluded that when participants received more support, their perceived level of efficacy rose. Through this research, Richter and Idleman established the need for ongoing support and professional development opportunities to increase efficacy and further develop the teaching skills of instructors. Suggested future research directions included examining the types of support and professional development that might aid educators to increase their efficacy in online teaching. The researchers also suggested future research that would include faculty members who teach any number of online courses, not just those who teach more than 51% online.

Beaumont (2018) examined professional development that spanned across disciplines in order to determine how educational institutions can best serve all professors in diverse teaching disciplines. The researchers recruited participants from a community college who taught full time as professors and collected data through reflections, surveys, and electronic assignments. The researcher aimed to investigate the perceptions of professors on the drawbacks and benefits of cross-disciplinary professional development. From the data collected, the researcher concluded that professional development should center on pedagogical development within the faculty.

The researcher also found that some professors had gaps in professional expertise and knowledge, and that some voiced that specific disciplines are so different from one another that that in itself was a source of a variety of misconceptions (Beaumont, 2018). Beaumont noted that, due to cross-disciplinary professional development, some professors experienced a level of misunderstanding amongst the academic discipline groups. Each academic discipline group may have different levels of efficacy pertaining to their perception of students. In the discussion section, Beaumont stated that professors receive the most significant benefit when they reflect upon how individual students learn, their teaching styles, and ways to further develop their practices in teaching. Future suggested studies included investigating teaching philosophies and methods within certain disciplines and comparing these methods within the individual practices of professors.

Facilitators of professional development opportunities in higher education design these programs to educate professors on various aspects of their jobs. Professors receive the most considerable advantage when given opportunities to reflect on their teaching styles, consider the individual learning needs of their students, and further develop their teaching practices

(Beaumont, 2018). When professors have opportunities to learn about disabilities, they are, in turn, increasing their awareness (Marquis et al., 2016). As suggested by Marquis et al. (2016), examining how the professional development on persons with disabilities impacts professors may provide valuable outcomes.

Review of Methodological Literature

Many available research methods can help decipher data. However, when conducting a study, it is essential to understand the research questions and how they relate to the literature, as well as the types of data sought by the researcher and the best methods for data analysis. For this methodological literature review, the researcher reviewed the relevant research articles and placed them into three categories according to methodology types: qualitative, quantitative, and mixed methods. There is a lack of research pertaining to adult students with ADHD in higher education and their relationships with faculty (Bolourian et al., 2018; Koch, Mamiseishvili, & Wilkins, 2016; Wadlington et al., 2017).

Furthermore, researchers have noted that there is little published research on the adult population with ADHD with regard to reasonable accommodations in higher education (Jansen, Petry, Evans, Noens, & Baeyens, 2018). Several articles that examined higher education students with ADHD also included adult learners with other disabilities such as ASD, dyslexia, and other psychiatric disorders (Dong & Lucas, 2016). Fuermaier et al. (2012) stated that there were no published instruments to measure the levels of stigmatization that exist toward adults with ADHD from educators. Fuermaier et al. (2014) also cited a gap of knowledge on published research on educators' levels of stigmatization toward adult students with ADHD (Fuermaier et al., 2014).

Qualitative methods and limitations. The qualitative approach to research helps to explore and give meaning and understanding to groups or individuals to recognize human or social problems (Creswell, 2018). With qualitative methods, researchers may utilize a protocol, but do not use research surveys or instruments to collect quantitative data (Creswell, 2018). Data collection in qualitative studies typically takes place in naturalistic settings where researchers conduct interviews and observe participants in their environments (Creswell, 2018). Researchers may also include their self-reflection about their roles in qualitative studies (Creswell, 2018). Studies of adult populations with an ADHD diagnosis that employ a qualitative method may use a variety of methods, such as interviews that are conducted typically in the participant environment (Creswell, 2018) to collect data (Bolourian et al., 2018; Coles, 2014; Dowd, Pak, & Bensimon, 2013; Gallo et al., 2014; Lawrence, 2009; Thompson & Lefler, 2016).

Many of the qualitative studies published examined the student's point of view and did not include data specific to the professor's point of view (Bolourian et al., 2018). Data collected in these types of studies focused on examining existing patterns in the research. Furthermore, several articles examined included an overall review of already published literature. These include Lombardi, Vukovic, and Sala-Bars (2015), who examined higher education institutions across multiple countries, including the United States (Lombardi et al., 2015). Lebowitz (2016) reviewed published, peer-reviewed articles that they categorized into several topics; however, much of the review was limited to specific parameters relating to children and adolescents with ADHD.

Quantitative methods and limitations. Quantitative researchers collect data statistically obtained through a survey or experiment (Creswell, 2018). By collecting data and examining the relationships that exist between all independent and dependent variables, a researcher can

examine a hypothesis (Creswell, 2018). Studies that utilize a pretest and posttest survey and experimental designs use a quantitative approach (Creswell, 2018; Dong & Lucas, 2016; Fuermaier et al., 2012; Fuermaier et al., 2014; Fuermaier et al., 2018; Liu et al., 2017; Masuch et al., 2018; Mulholland, 2016; Stevens et al., 2018). With a quantitative method, reliable instruments collect data, and numerical values are assigned to analyze the data and test theories statistically in order to prove or disprove the hypotheses in a study (Creswell, 2018).

When using surveys as the design for a quantitative method, researchers can study a portion of a population to examine one's opinions, attitudes, relationships, correlations, and descriptions between variables (Creswell, 2018). Stevens et al. (2018) examined faculty members' awareness of ADA laws and regulations at a private college in Pennsylvania and found that 11.6% of the faculty members surveyed felt that giving students accommodations created an unfair advantage for them. One limitation mentioned was the small sample size of participants who answered the survey and the fact that respondents were drawn from only one university (Stevens et al., 2018). Further, even though evidence of discrimination was revealed through analysis of the data, it could not be extended to other universities without further investigation.

Sciutto et al. (2000) published an instrument that examined knowledge and perceptions of teachers towards students with ADHD. The instrument utilized published data from the previous DSM-V; much of the symptomology, categorization of ADHD, and research has since changed, therefore making this instrument out of date compared to the newest revision of the DSM. This instrument would need to be modified, and internal consistency and validity would have to be analyzed prior to utilizing it further. In addition, to examine the perceptions and knowledge of professors towards adults with ADHD, many of the questions would need modification as well.

Mulholland (2016) utilized the ADHD-Knowledge and Attitude of Teachers (ASKAT), an instrument designed by Sciutto et al. (2000) and modified by Mulholland (2016), to compare the validation and reliability of the instrument to test the perceptions and attitudes of teachers toward students with ADHD. The researcher asked a total of 596 teachers from primary and secondary schools in Wales, United Kingdom, to answer the questionnaire. Mulholland (2016) stated that there were few tools available to examine the perceptions and attitudes of teachers toward students with ADHD. The researcher analyzed the data to validate the tool; however, the data collected did not examine actual perceptions of knowledge regarding ADHD.

Mulholland (2016) found that the ASKAT was a reliable tool to gain insight into the knowledge and attitudes of teachers. However, this instrument was only validated and reliable for teachers and students in primary and secondary schools, and is not appropriate for use with an adult student population. Specifically, the verbiage of the tool implies application toward students in Grades 12 and below and does not apply to the adult population. Mulholland did not discuss limitations or suggest future studies, but further research to investigate the use of this tool with adult student populations could be of value.

Fuermaier et al. (2012) found no available instruments to measure stigma toward adults with ADHD and further discovered a lack of knowledge regarding the attitudes that contribute to the stigmatization of adults with ADHD. The researchers subsequently developed and published a survey that could measure stigma levels toward adults with ADHD. Researchers found this instrument reliable and valid using participants from Germany; however, no reliability or validity testing has been completed within the United States population. In the subsequent study by Fuermaier et al. (2014), the researchers found levels of stigma toward students with ADHD to be lower in educators when compared to a group of non-educator participants recruited via flyers

and announcements. The non-educator group was not well defined and included participants who were students. While educators' stigma ratings were lower, it was not clear whether the effects of levels of stigma were manifested in educators' actual behavior toward adults with ADHD. Further, the comparison between the educator and non-educator groups could be extended to compare professors of education disciplines against those in other disciplines.

Fuermaier et al. (2014) suggested a future study comparing the stigma levels of educators with and without specific certifications in special education and ADHD. The researchers of a similar comparative study also suggested future research in the form of a comparison of teachers who did and did not receive this type of professional development and training in ADHD (Becker & Palladino, 2016). Currently, within the United States licensing system, an authentic certification in ADHD does not exist. Individuals may be exposed to ADHD in pedagogical coursework specific to individuals in teaching careers. Furthermore, researchers suggested that additional studies compare educators' frequency of contact with adults with ADHD, and consider the educators' interactions with adults with ADHD in professional versus private settings. However, there are many variables to consider when examing teacher experiences. Therefore, obtaining a quantitative measurement to express experiences may be difficult.

A study using data collected by the U.S. Department of Education (DOE) by Liu et al. (2017) examined the challenges that youth with disabilities face after high school, the characteristics of college students with disabilities, and the academic supports available to college students with learning disabilities. Overall, the study featured a large number of participants who were both adolescents in secondary schools and their parents. Because the study used a large sample size, it achieved more reliable data collection. However, the data was collected in 2009 and thus may not represent the current population.

Mixed methods and meta-analysis research and limitations. Mixed methods research utilizes both quantitative and qualitative data collection methods to help answer research questions (Creswell, 2018; Koch et al., 2016; Kuriyan et al., 2013). Kuriyan et al. (2013) conducted a longitudinal study that followed a pool of 516 students with ADHD from high school into their 30s (from 1987 to 1996) to examine the educational status and employment history. Limitations to this study consisted of the lack of accurate knowledge about the severity of the participants' learning disabilities and the lack of information on medication that the subjects may have been prescribed to treat ADHD (Kuriyan et al., 2013). Kuriyan et al. (2013) remarked that only a few studies that included longitudinal data that examined students over the age of 25 years were available.

Lightfoot et al. (2018) utilized a scoping review and various research designs to examine how students with learning disabilities such as ADHD were supported within higher education institutions. The researchers identified 242 articles related to students with disabilities such as ADHD; however, they analyzed only 44 articles for their study. Of the 44 articles, 37 were qualitative interview studies on higher education students with learning disabilities such as ADHD, which in itself was a limitation since it did not specifically address ADHD alone. The researchers also noted that the articles reviewed were limited to students who were diagnosed with ADHD and did not consider other disabilities, such as mental health conditions or other comorbid diagnoses.

Synthesis of Research Findings and Critique of Previous Research

ADHD is one of the most common learning disabilities identified in students who attend higher educational institutions (Weyandt & DuPaul, 2006). However, there is a lack of research related to adult students with attention deficit disorders who are entering higher education

(Bolourian et al., 2018; Jansen et al., 2017; Koch et al., 2016; Wadlington et al., 2017). Some researchers have noted that there are only a few studies written about the adult population with ADHD (Kuriyan et al., 2013; Ramos-Quiroga et al., 2014) and that ADHD is one of the most insufficiently understood disorders in higher education students (Fuermaier et al., 2018).

While examining the existing research articles that exist in peer-reviewed publications, the researcher of the present study noted that several themes emerged about adult higher education students with ADHD and those who teach them. The themes are: self-efficacy and stigmatization of instructors toward adults with ADHD (Becker & Palladino, 2016; Bolourian et al., 2018; Daley & Rappolt-Schlichtmann, 2018; Fleming & Wated, 2016; Fuermaier et al., 2012; Fuermaier et al., 2014; Fuermaier et al., 2018; Gallo et al., 2014; Lebowitz, 2016; Lightfoot et al., 2018; Vance & Weyandt, 2008; Williamson et al., 2014); educator versus non-educator (Sniatecki et al., 2018; Timmerman & Mulvihill, 2015); and perceptions of professors toward adult students with ADHD with regard to training in ADHD and special education (Fuermaier et al., 2014).

There are gaps of information in published research with regard to students with ADHD in the higher education system and the perceptions of professors at higher education institutions toward this student population (Timmerman & Mulvihill, 2015; Vance & Weyandt, 2008). There are also indications that there is a need for literature focused on the perceptions, attitudes, and stigma levels of professors regarding adult students with ADHD (Bolourian et al., 2018; Jansen et al., 2017; Koch et al., 2016). Furthermore, researchers have indicated the need for more studies and further investigation regarding the higher education employees' understanding of adult students with inattentive and hyperactive disorders (Bolourian et al., 2018; Koch et al., 2016; Wadlington et al., 2017).

Adult ADHD is considered to be one of the most insufficiently understood learning disorders (Fuermaier et al., 2018). A number of authors of published, peer-reviewed articles cited the need for additional research regarding adult students with ADHD (Timmerman & Mulvihill, 2015; Vance & Weyandt, 2008). Many researchers described how instructor perceptions, both negative and positive, surface in the higher education classroom (Lightfoot et al., 2018; Ramsay & Rostain, 2006). The negative perceptions of professors directly relate to the collective knowledge of the ADA laws enacted to protect people with disabilities. The rules and regulations implemented over the last 20 years require instructors to abide by these regulations in order to assist students with disabilities (IDEA, 2004; Ramsay & Rostain, 2006; Vickers, 2010). However, researchers have indicated that some students dropped out of college after a negative confrontation with a professor teacher's perception (Bolourian et al., 2018).

Several published articles indicated that students with disabilities had experienced stigma from professors when their disabilities were disclosed. Furthermore, some professors will not go out of their way to accommodate students although they are legally obligated to do so. Bolourian et al. (2018) stated that an honors student was stigmatized by a professor when accommodations were requested for academic work related to the honors program. Through a survey, Stevens et al. (2018) found statistical evidence that 11.6% of professors from a college felt that students who received accommodations had an unfair advantage over students without disabilities. Students requesting accommodations may experience resistance from their instructors, and instructors may have a lack an understanding of why accommodations are necessary (Lightfoot et al., 2018; Timmerman & Mulvihill, 2015).

Furthermore, some instructors do not understand the legal requirement to provide accommodations and may lack the professional development skills to assess the learning needs

of their students with disabilities and the legal issues concerning accommodations in the higher education classroom (Lightfoot et al., 2018; Stevens et al., 2018). Therefore, they may require additional professional development regarding higher education students with disabilities who need accommodations (Stevens et al., 2018).

Within the literature, a correlation between a diagnosis of ADHD and student success has been found (Bolourian et al., 2018; Lawrence, 2009); specifically, students with ADHD face more challenges and struggles in obtaining an education. When students do not have positive classroom experiences, they are less likely to complete coursework successfully. Bolourian et al. (2018) cited the experience of a student that was criticized by an instructor in a higher education course in front of other classmates. The student felt that the criticism caused the student to fail the course due to not being able to access the curriculum effectively within the classroom, and decided not to return the following semester (Bolourian et al., 2018).

Some professors and teachers do not believe that ADHD is a real disorder. It was noted that some professors felt that a diagnosis of ADHD was just a fad and that students used the diagnosis to receive accommodations and classroom supports that they did not need (Lightfoot et al., 2018). Fuermaier et al. (2012) noted that there were no published instruments to measure stigmatization toward adults with ADHD. However, there are published instruments for examining knowledge, perception, and stigma levels of primary and secondary education teachers (Mulholland, 2016; Sciutto et al., 2000). Therefore, Fuermaier et al. (2012) conducted research and published a tool to statistically detail the level of stigmatization educators have toward adults with ADHD. The researchers followed up the publication of their instrument with a study analyzing the level of stigma that teachers have toward adults with ADHD. However, Fuermaier et al.'s (2012) instrument was validated and found reliable by examining German

participants and did not include participants from the United States. Fuermaier et al.'s (2012) instrument to measure the levels of stigma teachers have toward adults with ADHD has only been used in two subsequently published articles. However, many of the articles reviewed in the previous sections indicated that negative attitudes and perceptions do exist in higher education instructors toward adult students with ADHD (Stevens et al., 2018) and have examined students' perceptions of these issues (Bolourian et al., 2018).

Student supports and instructors' knowledge, attitudes, perceptions, and stigma levels toward elementary and secondary students with ADHD have been heavily researched, with available instruments to quantitatively analyze results (Mulholland, 2016; Sciutto et al., 2000). Sciutto et al.'s (2000) instrument has been utilized in over 30 published articles; however, it focused solely on the perceptions, attitudes, and knowledge of teachers in primary and secondary school settings (Sciutto et al., 2000). Stevens et al. (2018) addressed this gap in part by examining instructors' perceptions of higher education students with disabilities utilizing a survey regarding ADA knowledge, which encompassed students with all types of disabilities and not solely ADHD. Therefore, while research exists regarding the existence of stigma from elementary and secondary educators toward children and adolescents and the existence of stigma from professors in higher education toward adult students with ADHD and instruments have been validated and found reliable under older versions of the DSM, there is still a need for additional research on perceptions of professors in higher education toward adults with ADHD.

Chapter 2 Summary

An estimated 11.1% of the total student population enrolled in postsecondary education is students with disabilities, according to the U.S. Department of Education's National Center for Education Statistics (Snyder et al., 2016). There are significant gaps within the research

regarding adult higher education students with a diagnosis of ADHD (Koch et al., 2016; Ramos-Quiroga et al., 2014). Reviewing the literature on inattentive and hyperactive disorders aids in understanding how critical accommodations and support services are for students with learning disabilities, and highlights gaps in the research. Furthermore, exploring the perceptions and attitudes of professors towards students with ADHD is needed.

The information presented in this literature review was obtained from peer-reviewed and published articles relating to students with ADHD. Through the literature review, a conceptual framework presents the details regarding the reasons why expanding the research on educating adults with ADHD to include the perception of the professor are critical. The literature review also describes the formal theory guiding the present study. Within the conceptual framework section, this researcher explores topical research regarding the levels of stigma that instructors have toward adult higher education students with ADHD. An examination of literature and methodological literature in various topics related to this dissertation includes: (a) living with inattentive and hyperactive disorders; (b) the stigmatization of individuals with ADHD; (c) transitioning from high school to college; (d) secondary and higher education disabilities law; (e) 504 classroom supports and accommodations; (f) student support services; and (g) instructor's perceptions. The literature reviewed was grouped by type of research method with an explanation of how the methodology was used in the present research, including the limitations that existed with the research. Lastly, a critique of previous research and the three salient themes identified by the present researcher in the reviewed literature are presented.

Through researching the levels of stigma that professors and teachers have toward adults with ADHD, the researcher aims to provide an expansion of knowledge that higher education institutions can employ to better serve and educate students with ADHD. In the proceeding

chapter, relationships between professors employed in academic disciplines of educator and non-educators will be examined to address the gaps in the literature that exist regarding adult higher education students with ADHD through a quantitative, causal-comparative research design (Fuermaier et al., 2014).

Chapter 3: Methodology

The methodology of this research study was based on a conceptual framework discussed throughout this dissertation. ADHD is a learning disorder that is impacted by stereotyping, discrimination, and negative perceptions (Mueller et al., 2012). However, there was a lack of research on college students with attention deficit disorders (Ramos-Quiroga et al., 2014). Further, there is very little existing literature on the effectiveness of accommodations made available to higher education students with disabilities (Lefler et al., 2016). The majority of research on students with ADHD examines students in primary and secondary education settings (Hart et al., 2011) and it is not clear whether the insights gained from these studies are transferable to the higher education setting. To better assist educators in serving college students with learning disabilities such as ADHD, more research is needed (Timmerman & Mulvihill, 2015; Vance & Weyandt, 2008).

Specifically, there is insufficient research on the perceptions and attitudes of educators toward adults with ADHD (Fuermaier et al., 2014). Adults with ADHD are understudied (Emmers et al., 2017), yet Gallo et al. (2014) stated that a lack of a personal connection from professors creates barriers for college students with ADHD. Researchers continue to suggest that negative attitudes and perceptions from professors persist in higher education (Lightfoot et al., 2018), yet there has been limited research on perceptions in adults with ADHD (Masuch et al., 2018; Thompson & Lefler, 2016). Furthermore, there is insufficient research and information to help college students manage their ADHD symptoms (Thompson & Lefler, 2016).

There is a documented lack of research regarding educators' perceptions of adult students with ADHD (Becker & Palladino, 2016; Timmerman & Mulvihill, 2015; Vance & Weyandt, 2008). With an increasing number of adult students with learning disabilities enrolling in higher

education institutions (Stewart, Mallery, & Jaehwa, 2010), it is imperative to extend the existing body of research to explore the ways in which college professors perceive students with the diagnosis (Timmerman & Mulvihill, 2015; Vance & Weyandt, 2008). Further, there is a need to extend the body of research to examine the influences of specific academic disciplines taught by faculty members and of training/courses on ADHD and/or special education certification with regard to stigma toward persons with disabilities (Becker & Palladino, 2016; Fuermaier et al., 2014; Sniatecki et al., 2018) in order to create positive learning environments (Fleming & Wated, 2016). Previous research conducted by Fuermaier et al. (2014) examines the stigma levels of the teacher population of Germany. This researcher expanded the body of research on teachers' perception toward adults with ADHD conducted by Fuermaier et al. (2014) to include the population of professors employed in the United States.

Chapter 3 will present the methodology and procedures used for this study. In this chapter, the researcher summarizes how the study's research was conducted and the research methods utilized to analyze the results. Further, the researcher discusses the specific population of the study's participants and details a power analysis; ethical considerations; independent and dependent variables; limitations of the study; internal and external validity; and a prediction of the expected findings.

Purpose of the Study

The purpose of this survey study was to test the theory of Stigma (Goffman, 1963) that relates to the professor groups academic types (educational/non-educational) and those who have and have not undertaken coursework in special education or ADHD within the United States to stigma, for professors at universities and colleges within higher educational institutions within the Massachusetts, Oregon, and Texas. This researcher focused on examining the relationships

that exist between academic discipline type (educator and non-educator), collecting descriptive data on academic discipline type (applied science, education, formal sciences, humanities, natural sciences, and social sciences), and training/courses taken in ADHD or certificiation in special education with regard to perceptions toward adults with ADHD. In light of the insufficient extant research on how ADHD symptoms impact learning in higher education students and the ways in which such symptoms affect professors' instructional methods and curriculum planning, research efforts in this area are critical (Asbjørnsen, Manger, & Eikeland, 2015; Koch et al., 2016). Researchers have suggested that collecting data on perceptions of adults with ADHD can help in the development of strategies that are both effective and preventative to fight against stigma (Fuermaier et al., 2012; Sniatecki et al., 2015; Vance & Weyandt, 2008). It was anticipated that, by utilizing a quantitative, experimental, causal-comparative design, the present study obtains data that may close the literature gap that exists regarding professors in higher education institutions and reported levels of stigma toward adult students with ADHD.

Research Questions and Hypotheses

Studies that examined adults with ADHD may help fill prior gaps in the literature (Ramos-Quiroga et al., 2014), specifically with regard to the perceptions that educators may have toward adults with ADHD (Fuermaier et al., 2014; Sniatecki et al., 2015; Timmerman & Mulvihill, 2015; Vance & Weyandt, 2008). However, there is limited published research on the perceptions of professors toward adults with ADHD (Masuch et al., 2018; Thompson & Lefler, 2016). Fuermaier et al. (2014) suggested that researcher should consider examining stigma professors have toward adults with ADHD.

With the noted gap of research, future research should explore the outcomes and challenges faced by adult students with ADHD resulting from the perceptions of professors (Vance & Weyandt, 2008). Fuermaier et al. (2014) suggested that future research should examine the perceptions of instructors toward adult students with ADHD by examining specific qualifications in ADHD and specific training in special education. Future research should also consider educators' personal experiences with ADHD; experiences in working with students with ADHD (Daley & Rappolt-Schlichtmann, 2018; Fuermaier et al., 2014; Harrison, 2015; Sniatecki et al., 2018); contextual factors that may increase or decrease efficacy (Hampson et al., 2018); and specific certifications or content knowledge that have familiarized them with the disorder (Fuermaier et al., 2014). Pursuing additional research in this area may help to clarify the content and curriculum needed by higher education instructors in order to successfully serve this particular student population (Fuermaier et al., 2014).

This study focused on the professors' perceptions of adults students with ADHD as suggested by past research (Fuermaier et al., 2014; Sniatecki et al., 2018; Vance & Weyandt, 2008). Fuermaier et al. (2014) suggested that future research studies should consider any special certifications and professional development experiences educators have regarding ADHD. Furthermore, this research study is an extension of the existing body of research conducted by Fuermaier et al. (2014) that examined the stigma levels of German teachers toward adults with ADHD. This research proposed to extend Fuermaier et al.'s (2014) research to include examining the stigma levels of professors toward adult students in the United States, based on the following research questions:

RQ1: If, and to what extent, is there a difference in professor perceptions of adults with ADHD when they have or have not undertaken training in ADHD or hold a special education license?

H10: There is no statistically significant difference in professor perceptions of adults with ADHD when they have or have not undertaken training in ADHD or hold a special education license?

H1A: There is a statistically significant difference in professor perceptions of adults with ADHD when they have or have not undertaken training in ADHD or hold a special education license?

RQ2: If, and to what extent, is there a difference in professor perceptions of adults with ADHD if they teach in education programs or a non-education program?

H20: There is no statistically significant difference in professor perception of adult students with ADHD if they teach in education programs or a non-education program.

H2A: There is a statistically significant difference in professor perception of adult students with ADHD if they teach in education programs or a non-education program.

Research Design

Creswell (2018) stated that quantitative research is an approach to investigate variable relationships and group differences amidst variables. The research design is a causal-comparative method in order to assess professors' perceptions of adult students with ADHD with regard to associations that exist amongst educator/noneducator groups. This research further investigated group differences that exist among educators with and without training/coursework in ADHD or

certification in special education (Adams & Lawrence, 2015). Using a quantitative, causal-comparative design, the researcher aimed to provide statistical information via data collection regarding the measurement of stigma levels that professors/instructors have toward adult students with ADHD to quantify professor perceptions. Therefore, in this research study, the independent variables examined were academic discipline type and training/coursework/certification of professors in higher education (Fuermaier et al., 2014).

For the present study, an experimental design was not appropriate due to the lack of special treatment or intervention given to the study's participants, and the resulting lack of effects on the results without these factors (Creswell, 2018; Fuermaier et al., 2012). According to Adams and Lawrence (2015), a correlational design examines the relationships and group differences between two or more variables, but their causation cannot be explained. However, a correlational design method does compare relationships between two or more variables to find a correlation (Adams & Lawrence, 2015). In the present research, the group differences of three independent variables and one dependent variable were examined.

Additionally, when reviewing the research methods employed by Fuermaier et al. (2014), the participants were placed into groups based on their responses to the demographic survey questions and a control group was employed asking the same instrument questions to compare data from the two groups; however, there was no intervention in this study and there was no pretest or posttest given to the participants. This researcher employed similar methods to Fuermaier et al. (2014), examining the differences that exist amongst two groups. The first research question examined the differences amongst the groups of educators and non-educators in relation to perceptions they hold towards adult students with ADHD. The second research

question examined the differences amongst groups of professors who have and have not taken training/coursework in ADHD or special education.

The research questions aimed to determine if and to what extent differences in groups and differences among variables exist amongst groups. This research study employed quantitative methods to examine differences in groups that exist among a population of higher education professors and possible causes for that difference (Adams & Lawrence, 2019; Creswell, 2018). Causal-comparative research design methods are also known as ex-post facto; the experiment portion of this research has already happened which creates the differences amongst the groups being examined. With regard to this study, this researcher employed research methods that examine the differences between groups of professors who teach in either education or non-education academic disciplines. Further, the researcher examined group differences that existed amongst educators who have and have not taken training/courses in ADHD or have certification in special education. Therefore, an experimental causal-comparative design approach was determined to be the most appropriate method for the present study (Adams & Lawrence, 2019; Creswell, 2018). This researcher intended to extend Fuermaier et al. (2014) research and extend it into the high education population. Fuermaier et al. (2014) employed a causal-comparative design in which participants were placed into two groups for comparison. One group consisted of teachers from the same school district in Germany and the other group consisted of participants from various professions invited to participate via public announcements, researchers' contacts, and word-of-mouth (Fuermaier et al., 2014).

A causal-comparative method is the most appropriate design for this study, since the causal-comparative research design examines group differences and associations among dependent and independent variables (Adams & Lawrence, 2015; Brewer & Kuhn, 2010).

Adams and Lawrence stated that the causal-comparative method is similar to experimental design; however, it is missing several critical aspects of experimental design. Causation exists when the relationship between variables produces a cause and an effect, in which one variable changes another variable (Adams & Lawrence, 2015). The research questions in the study conducted by Adams and Lawrence (2015) examine a causal relationship and are therefore not an appropriate design. Therefore, utilizing the same methods as Fuermaier et al. (2014) by employing an experimental causal-comparative research method with two comparison groups would be the most appropriate design for this research.

Targeted Population, Sampling Method (power) and Related Procedures

The general population for this study was professors employed in higher education institutions. The target population refers to a group as a whole from which researchers collect data and conduct analysis in order to draw empirical conclusions (Creswell, 2014). In the present study, two groups of participants were formed from a group of professors at two universities in Massachusetts, one in Texas, and one university in Oregon. Also, data was collected from invitations sent to two LinkedIn and two FaceBook groups which targeted higher education professors from many universities and colleges throughout the United States. This group of participants were not associated with any of the universities chosen for this survey. Participants were purposively assigned to one of the two groups based on their responses to the demographic survey. The demographic survey aided to purposively assign professors into dichotomous groupings: academic discipline (education and non-education) and special education licensure/coursework in ADHD (professors who have undertaken and not undertaken). The targeted population consisted of professors/instructors who educate adult students. All four

universities in the targeted population have 4-year bachelor's degree programs and graduate (Master's degree) programs, and one university has a doctoral degree program.

Sampling method. The group of participants were recruited via a campus-wide email to all professors/instructors employed by two universities located in Massachusetts, one in Texas, and one in Oregon. Further, additional participants were recruited via a post on social media groups for professors on Facebook and LinkedIn (see Appendix G). The participants taught in online or on-campus educational programs, and teach at least one higher education class. The sampling method consisted of stratified purposive sampling, in which specific criteria and characteristics were identified by certain known demographics, to enable the study of a specific data set within that population (Creswell, 2014). For the purpose of purposive sampling, demographic questions employed by this researcher sought to identify professors' academic discipline type (education or non-education) and professors' educational backgrounds (with or without training/certification in ADHD or special education certification).

Sample size calculation/power analysis. The objective of this research study was to examine the relationships between the variables. As such, a power analysis was chosen for its ability to help determine the target sample size (Creswell, 2018). First, the researcher consulted Laerd Statistics (2019) to aid in selecting the most appropriate statistical tests for research (See Appendix I). The independent variables are being measured through a demographic survey using dichotomous data, and the dependent variable is measured using a Likert-type scale, an ordinal variable.

The G*Power calculator (Faul, Erdfelder, Lang, & Buchner, 2007) was used to determine the appropriate sample size for the study. Using the G*power software program, an a priori calculation for a one-way ANOVA statistical test was selected with an effect size of .40, alpha

err probability level of 0.05, and a power of 0.80 (Faul, Erdfelder, Buchner, & Lang, 2009). Based on the G*Power calculation, the total minimum sample size generated was 52 (see Appendix E for results of the G*Power analysis).

Participation requirements. The inclusion criteria for participants in the study included professors/instructors who taught college students in higher education institutions located in the United States. Each higher education institution is located in different regions of the United States; two on the east coast, another on the west coast, and another located in the Gulf of the United States. Further, participants from invitational posting on social media are located throughout the United States. Participants teaching both online and in on-campus settings were qualified to participate. The exclusion criteria included professors/instructors who were not currently working in a teaching capacity at higher educational institutions. Faculty members were eligible to participate in the survey if they were teaching at least one course with higher education students. No other requirements were needed to participate in the study.

Inclusion criteria for groupings consisted of participants over the age of 18 years in various careers recruited via word-of-mouth, public announcements, or Facebook and LinkedIn (see Appendix G). Participants must have been residing within the United States and have earned at least a bachelor's degree. Exclusion criteria included individuals under the age of 18 years of age and participants who did not currently live within the United States were excluded.

Instrumentation

In order to collect the needed data for the independent variables (education/noneducation and professors who have undertaken and not understaken coursework in ADHD or hold a license in special education) and dependent variables (stigma/perceptions), the researcher-created demographic questionnaire (see appendix A) and the *Modified Stigmatization in Teachers*

Toward Adults with Attention Deficit Disorder (see appendix B) instrument developed by Fuermaier et al. (2012) were used. The first three questions consisted of those from the demographic survey. These methods were used to collect descriptive data regarding academic discipline type (applied science, education, formal sciences, humanities, natural sciences, and social sciences), and training/courses taken in ADHD or certification in special education, with regard to perceptions toward adults with ADHD. The demographic survey data collected information related to the independent variable categories in order to appropriately group participants for each independent variable. Further, the demographic survey data includes one additional question that is not connected to the independent variable measurement.

After the demographic questions are answered, the survey moves to the instrument questions. The instrument, *Modified Stigmatization in Teachers Toward Adults with Attention Deficit Disorder* has 37 questions, five of which are inverted. The survey possible responses consist of; Agree (1), Agree (2), Disagree (3), and Strongly Disagree (4).

Table 1

Variable Table

Variable Type	Variable
Independent Variables	Academic discipline: Education, Non-Education
	Training: Special Education/Training in ADHD, No Training
Scores	Stigma

Independent variable measurement. Each invited participant was asked to answer questions regarding the independent variable groups. Independent variable one is academic discipline, which contains two levels. These two levels include professors who teach in

education and professors who teach in non-education disciplines. Independent variable two is classroom type, training/coursework in ADHD, and/or certification in special education. The two levels consisted of; training/coursework in ADHD and/or special education certification; and no training/coursework in ADHD or special education (see appendix B). The demographic survey also collects descriptive data on academic discipline type (applied science, education, formal sciences, humanities, natural sciences, and social sciences), and training/courses taken in ADHD or certification in special education, with regard to perceptions toward adults with ADHD.

Dependent variable measurement. The modified *Stigmatization in Teachers Toward Adults with Attention Deficit Disorder* instrumental survey employed in the present study was designed and validated by Fuermaier et al. (2012) in order to measure stigmatization toward adults with ADHD. Data collection and internal validity with this instrument were collected in the Netherlands, where different special education laws are applicable when compared to the United States. The population being studied in this research focuses on the United States; therefore, this researcher calculated new internal consistency and reliability using Cronbach's Alpha α of .91. Further, this researcher changed the Likert-type scale system from a 6-point scale to a 4-point scale to avoid neutral responses, which results in the need for a new internal consistency and reliability validation.

Fuermaier et al. (2012) discussed the reliability and validity of their instrument and cited that a 6-point Likert scale was appropriate based on their analysis of data. The instrument included 37 questions that were categorized and were to be answered using a 6-point Likert-type scale with six subscales. The subscales were thoughtfully planned and replicated from previously published literature on instrumentation development and evaluation (Fuermaier et al., 2012). The researchers cited that the instrument, "as is," should be considered a "beta version" which may

need future development and tweaks (Fuermaier et al., 2012). The subscales were: (a) Reliability and Social Functioning; (b) Malingering and Misuse of Medication; (c) Ability to Take Responsibility; (d) Norm-violating and Externalizing Behavior; (e) Consequences of Diagnostic Disclosure; and (f) Etiology (Fuermaier et al., 2012). The six subscales were aligned to enable the instrument to measure the level of stigmatization a participant might possess toward an adult student with ADHD (Fuermaier et al., 2012). The instrument was validated by asking 1,261 participants to answer the questionnaire, with a psychometric sample size of 1,033 participants. The participants were recruited either through public announcements or as first-year psychology students at the University of Groningen in the Netherlands (Fuermaier et al., 2012). Fuermaier et al. (2012) sought to determine the sensitivity of the survey and examine the validity of the results obtained from 52 participants.

Fuermaier et al. (2012) completed confirmatory factor analysis (CFA) on the results and found a 90%-confidence level for root mean squared error of approximation (RMSEA) from an average of .06 (between .057 and .064). The analysis indicated that the survey offered a good model fit, with an upper limit of confidence of less than .08 (Fuermaier et al., 2012, pp. 3–4). Comparative fit index (CFI) analysis was also conducted and the researchers found a good model fit with an interval ≥ .90 to ≥ .95, with the calculated interval of .93 (Fuermaier et al., 2012). Overall internal consistency was measured using the 37 questions and calculated using the Cronbach's Alpha method ($\alpha = .91$) (Fuermaier et al., 2012). Fuermaier et al. (2012) reported an effect size of 37, with negligible effects of 0.20, small effects of $d = 0.20$, medium effects of $d = 0.50$, and large effects of $d = 0.80$. To calculate the stigma effect size of the participants, Fuermaier et al. (2012) utilized a multivariate analysis of variance (MANOVA) and a post-hoc pairwise comparison (Scheffé). Internal consistency and reliability were calculated using

Cronbach's Alpha α of .91. Finally, the scale reliabilities were calculated and found to range between .61 and.87, where .60 indicated the minimum acceptance of a subscale, and .80 indicated good reliability (Fuermaier et al., 2012). Internal consistency and reliability was recalculated in this study to ensure that the instrument is reliable within the context of United States higher education professors, and to ensure that the scale is reliable with a 4-point, Likert-type scale (See Data Collection section).

Data Collection

This study was completed using two phases to validate the modified *Stigmatization in Teachers Toward Adults with Attention Deficit Disorder* instrument and to collect data.

Readability validation phase. Fuermaier et al. (2012) published the *Stigmatization in Teachers Toward Adults with Attention Deficit Disorder* instrument in both German and English. It is important to note that when this survey was originally found reliable, it was using a German-speaking population; the author released the survey to participants in both German and English. Therefore, this researcher employed a readability phase to ensure the instrument was comprehensible and allowed for easy readability with English-speaking participants from the United States. This researcher invited six participants who earned at least a Master's degree and were educators in different disciplines to read over the demographic and instrument questions to ensure the wording was comprehensible. Of the six participants, four provided feedback via a written email to this researcher. All four participants agreed that the word "parenthood" should be changed to "parenting" on the instrument and "a" should be added to question 5. This researcher obtained permission to utilize this survey, and make the changes in the survey (see Appendix D).

Instrument validation phase. As discussed in the Instrumentation section, the modified *Stigmatization in Teachers Toward Adults with Attention Deficit Disorder* instrument was developed in the Netherlands and utilized a 6-point, Likert-type scale. Therefore, to be used in the United States and to remove the neutral response choices, validity and reliability statistics was computed. Initially, the scale was reduced from six points to four points, leaving the response options of: strongly agree, agree, disagree, and strongly disagree. Further, question 5 added "a" to "make profit" and question 16 had a one-word change: parenthood to parenting. Once the instrument was modified, validity and reliability statistics was completed by calculating a new internal consistency and reliability using Cronbach's Alpha α of .91. There were five questions on the Fuermaier (2014) survey that were reversed. First, this researcher had to reverse these questions responses. Next, the researcher utilized SPSS to calculate Cronbach's Alpha. Finally, the scale reliabilities was calculated, where .60 indicates the minimum acceptance of a subscale, and .80 indicated good reliability (Fuermaier et al., 2012). This allowed the researcher to confirm that the modified instrument is appropriate prior to data collection.

Data collection phase. Once phase 1 is completed, and the instrument was found to be reliable and validated to be used with the educator population of professors in higher education institutions, this researcher collects data to answer the research questions. Data collection was initiated by obtaining site authorization from three universities in Massachusetts, one university in Texas, and one university in Oregon via their institutional review boards (IRBs). Additional authorization was obtained via administrators of two LinkedIn and two Facebook groups to request permission to send an invitation to participate in the study to their professors/instructors. An email was composed (see Appendix F) and sent to a list of professors from all five schools requesting that they complete a survey through the online platform Qualtrics (Massachusetts

university one *n* = 400, Massachusetts university two *n* = 400, Massachusetts university three *n* = 300, Texas = 300, Oregon = 300). Further, this researcher contacted the administrators of the two LinkedIn and two Facebook groups which targets professors in higher education, to obtain permission to post the invitation and link to the Qualtrics survey (Facebook Group = 29,000, LinkedIn =10,000).

Participants were presented first with an informed consent letter and were required to electronically sign the letter before proceeding to the next page of the survey (see Appendix A). Following the completion of the informed consent letter, participants proceeded to the researcher-created questionnaire (see Appendix B), followed by the modified *Stigmatization in Teachers Toward Adults with Attention Deficit Disorder* instrument (see Appendix C; Fuermaier et al., 2012). The instrument remained open to participants until a minimum of 52 participants was obtained, as dictated by the G*power analysis (see Appendix E). A follow-up reminder email was authored by the IRB Coordinator of one of the universities along with the original invitation to participate in the instrument (see Appendix F), and sent to participants once per week for 4 weeks after the first invitation was sent.

Operationalization of Variables

The following section discusses the various independent and dependent variables within this study and how they were operatized.

Academic discipline. Measured dichotomously, this independent variable had two levels indicating two different types of academic disciplines. The category choices were: education and non-education academic disciplines.

Descriptive data. Measured nominally, this descriptive data had six levels indicating different types of academic disciplines. The category choices are: academic discipline type

(applied sciences, education, formal sciences, humanities, natural sciences, and social sciences) and training/courses taken in ADHD or certification in special education.

Perception. The dependent variable in this instrument is perception, defined by the amount or level of stigma that an individual holds toward an adult with ADHD (see Appendix F). Perception was rated using an ordinal variable since the survey utilized a Likert-type scale from Fuermaier et al. (2014) and the *Modified Stigmatization in Teachers Toward Adults with Attention Deficit Disorder*. In the suggestions for future studies portion of Fuermaier et al.'s (2014) study, it was proposed that researchers examine instructors' teaching types, as well as certifications in special education or ADHD. The suggestions for future studies also indicated that independent variables should be used to categorically analyze data regarding perceptions. Further, the current body of research that exists from Fuermaier et al.'s (2014) research is internally consistent and validated for the population of Germany. This researcher aimed to extend this research to the population of professors in the United States.

Training/coursework. Measured dichotomously, this independent variable was comprised of two levels to indicate participation in coursework related to ADHD or certification in special education. Category choices were: coursework in ADHD or certification in special education,or no coursework in ADHD or certification in special education.

Data Analysis Procedures

In order to avoid non-response bias, the Qualtrics survey utilized data programming that asked participants to answer questions from the researcher-created questionnaire and the modified *Stigmatization in Teachers Toward Adults with Attention Deficit Disorder* (Fuermaier et al., 2014). Participants were not required to answer every question in the survey and were allowed to skip questions they were not comfortable answering. Creswell (2018) suggested that

when participants are required to answer each question, this creates bias within the results. Participants may feel that the survey is cumbersome and either refuse to continue to answer the survey or click any answer to finish the survey faster. By eliminating this requirement, research has shown that this helps eliminate bias within the study (Creswell, 2018).

All information collected from the survey was saved in the Qualtrics software until at least 52 professors/instructors had participated. Following the attainment of this requirement, the Qualtrics data was downloaded to the present researcher's personal computer and then uploaded into IBM Statistical Package for the Social Science (SPSS) software. The data was encrypted for security purposes, as well as password-protected, and then converted into a quantitative set of statistical information for data analysis via SPSS. According to Creswell (2018), if data is missing or not collected and cannot be placed into variable fields, each statistical analysis program has a method for coding this information. The SPSS software contains a missing data command within the variable fields. In the program, variable fields can be left blank; however, SPSS codes the missing data fields into a single period identifier (IBM).

According to Creswell (2018), it is essential to present data in steps so that the readers can understand the processes involved and the ways in which one step leads to a subsequent step. The first step in the present study was to report the data on the number of participants from the sample who answered both the demographic and instrument survey questions (Creswell, 2018). There may be several participants who have chosen to skip over a question. Therefore, those must be reported within the data (Creswell, 2018). Descriptive statistics were then reported for the independent variables as the demographic data collected from the survey dictated how the participants were divided into their respective groups. The statistical method employed to answer the two research questions was planned as two one-way ANOVAs.

Statistical test. The dependent variable was measured using the modified *Stigmatization in Teachers Toward Adults with Attention Deficit Disorder* instrument and was measured as an ordinal variable with a Likert-type scale (Fuermaier et al., 2012). The independent variables for all research questions fall into the categorical measurement type category.

Assumption of the analysis. It is necessary to consider several assumptions when utilizing a one-way ANOVA statistical test. The first assumption is there is one dependent variable (Adams & Lawrence, 2015; Adams & Lawrence, 2019; Creswell, 2018; Laerd Statistics, 2019). With regard to this study, both of the research questions was analyzed separately in two separate, one-way ANOVAs. The second assumption is the one independent variable consists of two or more categorical groups (Adams & Lawrence, 2015; Adams & Lawrence, 2019; Creswell, 2018; Laerd Statistics, 2019). Researchers must assume that independent variables are independent of observations and that there is no relationship between the independent variable groups (Adams & Lawrence, 2015; Laerd Statistics, 2019). Additional assumptions are that there are no significant outliers in data and that data is normally distributed for each group. Further, all data must be distributed normally in multivariate normality (Adams & Lawrence, 2015). Lastly, there must be homogeneity of variances (Adams & Lawrence, 2015; Laerd Statistics, 2019). If any of the assumptions are violated, the non-parametric alternative was used.

Limitations and Delimitations of the Research Design

Limitations and delimitations are imperative to consider when conducting research. A limitation is something that a researcher cannot control within a research study (Adams & Lawrence, 2015), while a delimitation is something a researcher can control within a research study (Adams & Lawrence, 2015). The following section discusses the limitations and delimitations within this study.

Limitations. A researcher cannot control limitations that exist within a research study (Creswell, 2018). This researcher was only able to determine if group differences exist between each variable (Creswell, 2018). However, with a quantitative, causal-comparative design method, the analyzed data will not be able to determine the cause of any relationships (Creswell, 2018). The design of the survey in the present study requested that participants respond via an email invitation (see Appendix F). Therefore, no control existed over the actual number of people who answered the survey, since not every professor/instructor who received the invitation to answer the survey questions decided to answer the survey. Given the fact that this researcher is unable to know beforehand the population's answers to the demographic survey, a purposive sampling method was utilized to indicate the groupings of participants.

Fuermaier et al. (2012) designed their instrument using a 6-point, Likert Type scale (strongly disagree, disagree, somewhat disagree, somewhat agree, agree, and strongly agree). Internal consistency and reliability were configured using psychology students enrolled in an undergraduate program at the University of Groningen in the Netherlands and publicly recruited on campus and via word-of-mouth for remaining participants (Fuermaier et al., 2012). The population in this study is different than that of Fuermaier et al. (2014). Therefore, internal consistency and reliability needed to be revalidated for internal consistency using a sample from the United States. Fuermaier et al. (2012) stated that their published instrument was a "beta version" and would need to be developed further.

Delimitations. A researcher controls the delimitations, which are the conditions that exist that may influence and exist in research (Creswell, 2018). The population of professors/instructors from higher educational institutions asked to complete the survey for the present study is located in three very distinct geographical locations. Two of the universities in

this study are located in Massachusetts on the East Coast, which is generally defined to be a liberal setting, with similar educational and cultural aspects that exist at the university located in Oregon. The university in Texas is located in a more diverse and conservative setting compared to the other two universities in this study. The respondents from the LinkedIn and Facebook groups are located all over the United States and do not have a distinct location. The survey respondents were only a small portion of the population of professors/instructors employed in the United States and therefore represented a small purposive sample.

Internal and External Validity

Identifying internal and external threats to validity aids researchers in analyzing the ability to successfully make a conclusion about and finalize data in research design (Creswell, 2018). Potential threats to validity must be identified to minimize any risks associated with a research study (Creswell, 2018). Internal threats to validity pertain to the experiences, treatments, and procedures of an experiment that directly relate to participants (Creswell, 2018), while external threats occur when incorrect inferences (future or past instances, wrong characteristics, or wrong settings) are drawn from the sample and conclusions of research (Creswell, 2018).

Internal validity threats. There were no anticipated history, maturation, or regression mean threats to the internal validity in the design method employed in the present study, particularly since a single survey was used to collect demographic information that employed a valid and reliable instrument to collect dependent variable information. However, several threats to internal validity did exist within the study. Specifically, participants were professors/instructors employed at universities or colleges at the same educational institution. To reduce this threat, participants from another university or college from another state were

included, including inviting educators from LinkedIn and Facebook groups to participate in the survey.

The researcher acknowledged that the survey participants may have been predisposed to possess information regarding ADHD through professional development at their workplaces or through their career experiences. To mitigate this threat, one of the questions within the demographic survey asked whether participants had undertaken coursework in ADHD or special education license. Through this demographic survey, the statistical relationship between these two groups (one with training or education in this specific area versus the group without such training) could be better determined.

It was also acknowledged that attrition (participants who begin to participate in the study but choose to drop out prior to finishing it) might affect the survey since some participants might have chosen to answer some but not all of the questions on the survey instrument. Furthermore, it was known that some participants might have chosen to answer all the questions, but later decided to request that their results be removed from the research study. To mitigate this threat, participants were not compelled to answer every question but instead were allowed to choose the questions they wished to answer. By not forcing participants to answer all questions, this mitigated the threat of participants choosing random answers in order to complete the survey.

External validity threats. The study focused on professors/instructors employed in higher education institutions that taught adult students, with no other requirements to participate in the survey. As a result, it was acknowledged that threats to external validity could arise from the characteristics of the professors. For example, some of the participants may have been newer to teaching adult students and may have previously been employed in careers other than education. Another respondent characteristic that could pose an external validity threat was the

fact that some respondents may or may not have had special certifications or knowledge regarding ADHD. To mitigate this external threat, the demographic survey asked participants to answer what types of education they have received (including special education training), or if they had taken courses to gain knowledge regarding ADHD. Lastly, another external threat pertains to the generalizability of the findings and how the researcher will interpret the results once the data has been collected (Creswell, 2018).

Expected Findings

It was anticipated that the data collected in the present research would aid in filling critical gaps in extant research relating to higher education professors/instructors with special education experience and their perceptions toward adult students with ADHD. With regard to this research study, it was further expected that positive perceptions would be found in professors/instructors, with minimal outliers with significant levels of stigmatization toward adults with ADHD. Results are expected to be similar to those in several articles found in the literature review.

There is insufficient research on adult students with ADHD (Thompson & Lefler, 2016); thus, it was anticipated that professors/instructors without specific special education or ADHD awareness training would display higher levels of negative perceptions toward adults with ADHD. Stevens et al. (2018) found that faculty and staff of the college studied in their research required additional professional development regarding ADA regulations, including methods for supporting students that need accommodations. Specifically, it was found that 11.6% (n = 8.5) of faculty members believed that accommodations given to students with disabilities created an unfair advantage over general education students not requiring accommodations (Stevens et al., 2018). Fuermaier et al. (2014) found that teachers overall had lower levels of stigmatization

when compared to a similar group of individuals who responded to an identical qualitative instrument.

In examining correlations between educator attitudes toward adult college students with ADHD, data can be examined to further fill in the existing gaps, as suggested by research (Fuermaier et al., 2012; Fuermaier et al., 2014). By considering Goffman's (1963) theory if stigma which guides this research, the results might conclude that if professors are not aware of their perceptions toward adult students with ADHD, their perspectives and reality are false and distorted. By focusing this research on examining correlational relationships between instructor teaching methods, professional development courses in special education, and personal experiences in relationships, with family members, or through teaching experiences, this study created research on attitudes that professors have toward adults with ADHD, resulting in research that can be expanded upon to improve pedagogy and educator practices in higher education.

Ethical Issues in the Study

Researchers must anticipate any ethical issues that might arise in a study (Creswell, 2018). In the present study, the data collection site universities and colleges and the groups from LinkedIn and Facebook were not named or released publically or identified in any way. Further, Institutional Review Board (IRB) approval was requested for each university and college. Any and all updates were also reviewed and approved by each university and college's IRB.

Efforts were also made to provide anonymity and confidentiality to all participants. Personal identifying information was not published, and all data were reported in aggregate form. The survey data was collected using Qualtrics, an online research program that allows a link to be generated for electronic sharing with participants. With the data collected from

Qualtrics, the present study employed the function not to collect personally identifying information from the participants' surveys. Correspondence with participants occurred via Qualtrics, including sending the initial invitation to answer the survey questions, sending the follow-up emails, obtaining informed consent (see Appendix A), and using the instruments (see Appendices B and C). Corresponding with participants this way eliminates direct, face-to-face, and verbal conversations that may create ethical concerns about anonymity and confidentiality. Although this researcher had some names, email addresses, and IP addresses, the data collected via Qualtrics was not be associated with the responses via email. Respondents were directed to email the researcher at Concordia University's email portal. Should a respondent contact the researcher and reveal who he or she is, the respondent is choosing to reveal their identity. Through the informed consent information, respondents were informed they were revealing their identity if they choose to email the respondent personally (see Appendix A). However, the researcher cannot link their data to their identity.

Chapter 3 Summary

In Chapter 3, the methodology used in the present study was presented, detailing how the study collected data; the power analysis configuration; the limitations and delimitation of the study; and additional essential information on the methodology of this study. This chapter presented the research questions and the reliable and validated research instrument that was used for data analysis. Research information from previous literature was presented to aid in syndicate with the methodology and guiding the study on the whole. A significant portion of the research questions and the study was guided and justified by the work of Fuermaier et al. (2014) and various other relevant research-based literature.

In the following chapters, the results of the study are presented and analyzed. By examining perceptions that professors/instructors exhibit toward adult students with ADHD, research gaps that exist in this area in the higher education setting are identified in the previous section and again touched upon in this chapter. Chapter 4 presents the finalized data collected, associated tables, and analytical data to deduce an answer to the hypotheses.

Chapter 4: Data Analysis and Results

In Chapter 4, this researcher presents a non-evaluative report centered on the data collected in this study. This section includes a statistical analysis supported by figures and tables to provide a numerical response to the research questions. The data reported in this section will relate to the research questions presented earlier and will employ a quantitative, statistical analysis of the findings. While the literature has shown that educators have positive perceptions toward adults with ADHD, additional relevant research is needed to assess professors in higher education and their perceptions toward adults with attention deficit hyperactive disorder (Fuermaier et al., 2012; Fuermaier et al., 2014). Likewise, much of the prior research examined the perspectives of elementary and secondary education teachers and did not include higher education professors' perceptions (Mulholland, 2016; Sciutto et al., 2000).

This study addressed the gap in research that exists regarding professors in higher education perceptions of adults with attention deficit hyperactive disorder (Fuermaier et al., 2014). With the use of a demographic questionnaire (see Appendix B) and responses from the *Measurement of Stigma toward Adults with Attention Deficit Hyperactive Disorder* (see Appendix C), the researcher collected data on how professors in higher education perceive adults with ADHD. As cited by Creswell (2018), a quantitative design study collects data to produce a statistical analysis to validate the results of the research. This study utilized Fuermaier et al.'s (2012) instrument (see Appendix C), which measured stigma toward adults with ADHD and included a demographic questionnaire specific to creating two distinct groups to follow the causal-comparative research study methodology (see Appendix B).

In this chapter, a description of the quantitative study and the design of the research and data collection analysis and is discussed. This researcher employed a causal-comparative

research design to quantitatively collect data, which were subsequently guided by the research questions as follows:

RQ1: If, and to what extent, is there a difference in professor perceptions of adults with ADHD when they have or have not undertaken training in ADHD or hold a special education license?

H10: There is no statistically significant difference in professor perceptions of adults with ADHD when they have or have not undertaken training in ADHD or hold a special education license?

H1A: There is a statistically significant difference in professor perceptions of adults with ADHD when they have or have not undertaken training in ADHD or hold a special education license?

RQ2: If, and to what extent, is there a difference in professor perceptions of adults with ADHD if they teach in education programs or a non-education program?

H20: There is no statistically significant difference in professor perception of adult students with ADHD if they teach in education programs or a non-education program.

H2A: There is a statistically significant difference in professor perception of adult students with ADHD if they teach in education programs or a non-education program.

Description of the Sample

During the initial stages of planning this research study, the researcher consulted the G*Power program to ensure an accurate number of surveys were collected for an analysis of variance (ANOVA) and to obtain an estimate on a total sample size needed to analyze this data

(see Appendix E). For a power of .80, it was determined that an estimated total of 52 surveys would need to be completed. The following depicts the potential participants and a description of the actual participants in the study. Based on the demographic information provided, participants reported a variety of academic discipline areas: 15 in applied science (18.5%); 48 in education (59.3%); one informal science (1.2%); 10 in humanities (12.3%); two in natural sciences (2.5%); and five in social sciences (6.2%); (see Table 1).

Potential participants. The participants in this study were professors who currently teach and are employed in higher education institutions in three geographic locations within the United States: two universities in Massachusetts; one university in Texas; and one university in Oregon. This researcher employed the use of four higher educational institutions and requested an Institutional Review Board (IRB) approval from each.

Out of the five higher education institutions, a total of 1,539 potential participants (Oregon = 672, Massachusetts = 841, Texas = 26) received an invitation to respond to the survey (see Appendix F). The invitation was also submitted to two Facebook groups and LinkedIn groups (see Appendix G), which professors in higher educational institutions were part of with a potential based on the number of registered members in the groups (Facebook = 10,000, LinkedIn = 10,000). The researcher created a separate Qualtrics survey link to obtain and monitor the data collected via social media outlets. A total of 15 surveys were collected over a span of one month via social media groups on Facebook and LinkedIn. Out of the 15 surveys, eight of the surveys were completed after the IRB deadline of October 31, 2019, and were therefore not utilized in the data collection. The universities in Oregon, Texas, and Massachusetts utilized an IRB representative from the institution to send out the invitation email to participants.

The university in Oregon sent approximately 693 emails to participants with an invitation to participate in the study, with approximately 21 returned emails, “system email not valid” or “no longer at this address” messages received. Approximately 50 emails returned with a vacation message response, with a total of approximately 672 emails delivered. Three higher education institutions in Massachusetts approved the study; one university distributed 241 faculty members; the second university distributed approximately 600; the third did not distribute the survey. Approximately 841 surveys were distributed to professors at two higher education institutions in Massachusetts. Lastly, one university in Texas approved the study and distributed approximately 26 surveys to their continuing education professors and adjunct staff members.

The participants. A total of 101 online surveys via Qualtrics were completed. Twenty surveys were excluded; eight surveys were completed after the deadline of October 31, 2019; 12 surveys were excluded for respondents not completing each question. Qualtrics systematically deleted surveys that were started by potential participants but never completed. Therefore, a total of 81 surveys were analyzed.

Summary of Results

In this section, the researcher provides a summary of the steps taken to analyze the data. Further, this researcher identifies the steps taken to heighten validity and reliability with respect to the associated research questions. Next, the researcher identifies the internal threats and provides an explanation of how the threats were either reduced or limited. Finally, a justification was provided of the appropriateness of each statistical analysis used to test each hypothesis.

Researchers recognize that threats to internal validity often include instrumentation, testing, history, maturation, selection, experimental mortality, and contamination of the design (Adams & Lawrence, 2015; Creswell, 2018), starting with the design methodology of the study

(causal-comparative) since it may be difficult to explain a significant difference if it should appear within the data (Adams & Lawrence, 2015). To make this study stronger, the researcher ensured that the independent variables were closely related. Further, the researcher limited the study to one dependent variable, the perception that was quantified using an instrument that was previously determined to measure stigma levels in individuals toward adults with ADHD (Fuermaier et al., 2012; Fuermaier et al., 2014).

With regard to the internal threat of instrumentation and selection, the researcher utilized two different links and Qualtrics surveys to collect data from universities and from LinkedIn and Facebook groups. One link was sent to participants from the four universities in this study and the other link was included with the invitation to participate via LinkedIn and Facebook. Each link was not searchable; in order to participate in the survey, a participant had to click on the link directly.

Participants were able to skip and not answer questions. Therefore, experimental mortality, or the loss of participants, existed in this study. However, the Qualtrics platform removed survey data from participants who did not finish answering the questions. Qualtrics saved the data for 30 days, and if a participant were to come back, they could continue working on the survey. However, data exported from the Qualtrics survey only came from individuals who had seen every screen of the instrument. All participants were purposively selected for this study. Therefore, an internal threat did exist. However, this researcher was mindful of this, and to reduce this threat, selected universities that specialized in several academic disciplines. Further, the social media groups on LinkedIn and Facebook targeted professors and adjuncts in the United States.

This research utilized an online survey platform to collect the survey data, which is recognized by the researcher as a limitation. This may have resulted in someone who did not satisfy the participant requirements taking the survey. To reduce this threat, this researcher contacted university IRBs and requested permission to send the survey to their professors and adjunct staff. Further, each institution directed one person within the university to be a person of contact and send the survey to the institution's list of professors and adjunct faculty. During the survey collection phase, although four institutions were invited to the survey, this researcher was not able to collect the minimum sample size; therefore, the researcher also obtained data from social media groups on LinkedIn and Facebook. Prior to utilizing social media groups, this researcher was able to collect 86 total surveys with only 75 that were deemed usable, where each participant answered every question. The researcher then ran a post-hoc Cronbach's analysis to ensure the power was within an acceptable range; however, the Cronbach's alpha obtained was .78. Upon consulting with the researcher's dissertation committee, it was determined that this researcher would request and obtain IRB permission to collect surveys via two online groups on LinkedIn and Facebook which target professors and higher education professionals within the United States.

Each survey was completed via Qualtrics, an online platform for survey collection. Qualtrics automatically separates surveys that have not been fully completed (with each screen reviewed) and surveys with each screen viewed and completed. After exporting the data collected from the Qualtrics online system, this researcher imported the data set into SPSS. All the data was saved in one file and encrypted with a passcode. Five questions on the survey were inverted; therefore, this researcher reverted them to equate the correct number correlated to the Likert-type response. Another data set file was created in which this researcher edited the data.

Next, this researcher went through the data to ensure each participant answered the questions associated with the survey. If a participant did not respond to each question, the researcher deleted their responses. Also, nine of the surveys completed via Qualtrics were completed after the IRB deadline for the collection of data. Therefore, this researcher deleted those nine responses. Further, this researcher consulted a doctoral-level statistician with regard to the most appropriate statistical testing that should be completed.

With regard to internal consistency and reliability, Cronbach's alpha was calculated for both the subscales factors as suggested by Fuermaier et al. (2012) and the full scale of the instrument to measure internal consistency. To examine the reliability and validity of the instrument, this researcher utilized exploratory factor analysis. Pairwise comparisons of means were considered; in accordance with to Cohen (1988), statistical negligible effects ($d < 0.20$), small effects ($d = 0.20$), medium effects ($d = 0.50$), and large effects ($d = 0.80$) were distinguished and utilized. Also, the overall significance level was set at a total scale of $\alpha = .05$ (Cohen, 1988). However, it was determined by exploratory analysis that the instrument would be analyzed as a whole rather than by utilizing subscales.

Factor analysis was performed on the full scale with subsequent confirmatory analysis. A principal component analysis was conducted by applying orthogonal rotation (varimax). Two separate, one-way ANOVAs were conducted to examine stigma levels in professors with regard to their academic disciplines and training in ADHD or special education licensures. Assumptions of various analytical testing were completed; however, this researcher found two separate, one-way ANOVAs to be the best way to analyze the data collected. Further, a Chi-Square goodness-of-fit test statistics was completed.

Two separate, one-way ANOVAs were used to examine the two research questions. The research questions and the associated hypotheses were tested using two one-way ANOVAs for four independent variable samples. These analyses examined group differences of professors' academic disciplines (education and non-education disciplines) with regard to perceptions toward adults with ADHD. Group differences between the two groups (professors in the education discipline and professors in non-education disciplines) were not statistically significant, $F(1, 79) = 1.656$, $p = .202$. Addressing the second research question and the associated hypothesis, the researcher analyzed group differences between professors who had undertaken coursework in ADHD or had a special education licensure and those who had not undertaken coursework in ADHD and did not have licensure in special education. Group differences between the two groups were not statistically significant, $F(1, 79) = 1.656$, $p = .735$.

Detailed Analysis

In this section, this researcher presents details on instrument validity and reliability; assumption tests; and outcomes and analysis of the two research questions with regard to their associated hypotheses. First, the demographic characteristics of the sample data are presented, including the frequency tables displaying the categorical variables. Further, the instrument questions were analyzed to determine their mean, standard deviation, and participant number (see Appendix R). Next, the psychometric attributes present the reliability and validity of the testing. Finally, the statistical results was discussed including the assumptions of ANOVA and the analytical results deciphered from the data.

Demographic characteristics. The instrument, measurement of stigma toward adults with ADHD, published by Fuermaier et al. (2012), was utilized in this study. The instrument consists of 37 questions that were found to be valid and reliable within the population of

educators in Germany and the Netherlands. The original instrument consisted of six subscales which measured six areas defined by the researchers. For this study, this researcher utilized the instrument and did not consider the six subscales individually.

The demographic questionnaire at the beginning of the survey provided essential information to categorize the participant demographic data (see Appendix B). The demographic questionnaire did not collect any confidential or private information. It inquired only about the type of academic discipline a professor teaches in and whether he or she had undertaken training in ADHD or special education.

Based on the demographic information provided, participants reported a variety of academic discipline areas: 15 in applied science (18.5%); 48 in education (59.3%); one informal science (1.2%); 10 in humanities (12.3%); two in natural sciences (2.5%); and five in social sciences (6.2%); (see Table 2). For the purposes of this research survey and to provide responses to the research questions, the comparative groups are as follows: one group comprised of professors stating that they taught in education (n = 48, 59.3%) and one group comprised of professors stating that they taught in a non-education field (applied science, formal science, humanities, natural science, or social science (n = 33, 40.7%). Under the question referring to special training in ADHD or special education, 39 (48.1%) participants indicated they had taken education training in special education and/or ADHD, while 42 (51.9%) stated they had not had special education training (see Table 2).

Table 2

Descriptive Statistics (N = 93)

	n	%
Academic Discipline		
Applied Sciences (Business, Engineering and Technology, and Medicine and Health)	15	18.5
Education (Elementary, Secondary, Special Education)	48	59.3
Formal Sciences (Computer Science, Mathematics, Statistics)	1	1.2
Humanities (Arts, Performing Arts, Visual Arts, History, Languages and Literature, Law, Philosophy, and Theology)	10	12.3
Natural Sciences (Biology, Chemistry, Earth Sciences, Space Sciences, and Physics)	2	2.5
Social Sciences (Anthropology, Archaeology, Economics, Human Geography, Political Science, Psychology, Sociology)	5	6.2
Special Education / ADHD Training		
Yes, I have special education training and/or training in ADHD	39	48.1
No, I have not had special education training and/or training in ADHD	42	51.9
Education/Non-Education Discipline		
Non-Education Discipline	33	40.7
Education Discipline	48	59.3

Psychometric Attributes

Cronbach's alpha. As with Fuermaier et al.'s (2012) method to find internal consistency, this researcher calculated Cronbach's alpha for each subscale and total scale to create a measurement of internal consistency. Within the population used to measure internal consistency

and reliability for the Fuermaier et al. (2012) study, scale reliability measured high (Cronbach's α = .91). Further, Fuermaier et al. (2012) separated the six subscales, and determined that the scale reliabilities ranged between .61 and.87, where .60 was indicative of the minimum requirement and .80 was indicative of good reliability.

Within this study, the researcher determined that full instrument scale reliability was measured at high reliability (Cronbach's α = .91). Further, in the Fuermaier et al. (2012) study, the researchers separated the six subscales and determined that scale reliabilities ranged between .61 and .87; where .60 was indicative of the minimum requirement and .80 was indicative of good reliability. In the current study, scale reliabilities ranged between .65 and .81, where .60 was indicative of the minimum requirement and .80 was indicative of good reliability. However, given the amount of data collected and the results from the exploratory factor analysis, this researcher determined that the instrument would be utilized as a total scale rather than considering the six subscales as published by Fuermaier et al. (2012).

Factor analysis. This research study had a sample size of 81; there is a dearth of literature available which examines sample sizes. However, according to MacCallum, Widaman, Zhang, and Hong (1999), with a smaller sample size (n = 60), exploratory factor analysis can be used. In the Fuermaier et al. (2012) study, an exploratory factor (EFA) analysis was analyzed and performed on each subscale in order to recognize factors of stigma toward adults with ADHD. The assumptions of a factor analysis are: rule for sample size should be between 10-15 participants per question; assumption of reliable correlations using Bartlett's test; normally distributed variables; and multicollinearity/singularity.

In order to meet the assumptions of the EFA, this researcher had to consider the first assumption of sample size. As mentioned, the literature does not adequately examine the sample

size. According to MacCallum et al. (1999), with a smaller sample size (n = 60), exploratory factor analysis can be used. To meet the assumption of reliable correlations, this researcher ran a Kaiser-Meyer-Olkin value (KMO) on the sample size, for the adequacy of the sample size test for the data. The desired values are between .600 and .800, adequate for an EFA test (Laerd Statistics, 2019). The KMO measured the accuracy at .756, and the risk p = .000; therefore, the KMO and Bartlett's test found the instrument to be significant. The Bartlett's test of sphericity indicated correlations between the variables; p <.000. Bartlett's test of sphericity examines the hypothesis of having no correlations within the correlation matrix in factor analysis. Further, confirming the variables are unrelated, therefore indicating factor analysis may be used to analyze this data. Chi-Square Goodness-of-Fit, χ^2 = 1593.93, p = .000. Further, utilizing descriptive data, this researcher determined with 95% confidence that the mean total score for perception in this survey would fall between 3.14 and 3.28. This researcher found statistical differences between the study participants: (χ^2, n = 81) = 1593.93, p = .000), RMSEA = 0.03566; 95%-CI.

In order to determine the number of factors present within the instrument, according to Laerd Statistics (2019) analysis using a scree plot determines commonalities between the questions within a survey (see Appendix U). Further, Eigenvalues of all factors greater than 1 determine how many factors are present within the data. A scree plot and communalities matrix reported an Eigenvalue of greater than 1.0, which determined that there are nine factors within the instrument (Laerd Statistics, 2019). However, in Fuermaier et al.'s study (2012), the researchers determined there were 17 factors using Eigenvalues. Fuermaier et al. (2012) justified the usage of six components on the basis of using the scree plot and Cronbach's alpha for internal consistency with corrected-total correlation. This researcher determined that the data was

orthological, where factors are independent and not correlated with each other; and not oblique, where the factors are correlated. This researcher completed a factor analysis with a rotated varimax with Kaiser Normalization, with an absolute value coefficient of 0.4 (see Appendix S). Further, Appendix T illustrates the rotated component matrix for each survey question.

Assumptions. To answer the two research questions in the most appropriate way, two separate one-way ANOVAs were utilized. The following section examines the six assumptions of a one-way ANOVA for each individual research question and discusses the appropriateness of two one-way ANOVAs. The six assumptions are: There is one dependent variable being measured on a continuous level; having one independent variable with two or more categories; assumption consists of observations being independent and no relationship within each group; no significant outliers in the groups of independent variables; normally distributed dependent variable data for each independent variable group; and homogeneity of variances (Laerd Statistics, 2019).

The first three assumptions are considered the basic requirements needed when analyzing data with a one-way ANOVA (Laerd Statistics, 2019). The first assumption of one dependent variable has been met, as this study examines the dependent variable of perception toward adult students with ADHD. The second assumption, having one independent variable with two or more categories, has been met. Each research question contains one independent variable; the first independent variable is an academic discipline and the second is special education licensure. Each independent variable contains two categories within the independent variable. Both independent variables were analyzed separately. Finally, the observations within the study are independent of each other and no relationship exists within the independent variables.

This researcher analyzed the data to ensure normality (see Appendices H and M) and factor levels of the data collected in relation to the dependent and independent variables in order to ensure that the data met the assumptions of a one-way ANOVA. Therefore, to analyze the data to ensure that it was normally distributed, this researcher utilized SPSS to create boxplots (see Appendices L and Q). Further, the researcher needed to ensure that the data contained no outliers, and that there is a normal distribution of the data. In data analysis, outliers can influence the data with regard to the mean and the standard deviation and can impact the overall analysis negatively (Laerd Statistics, 2019).

Normality distribution testing analyzes data to ensure that there are no outliers within a collected data set (Laerd Statistics, 2019). A normality plot test, a Normal Q-Q Plot (see Appendices J and O), Detrended Normal Q-Q plots (see Appendices K and P) and a stem-and-leaf (see Appendix N) data chart in appendix H concluded that the data collected met this assumption. As indicated by the boxplot for all two independent variables (Education, Non-Education, Undertaken ADHD coursework/Special Education Licensure, and not undertaken ADHD coursework/Special Education), there were no outliers detected (see Appendix L). Laerd Statistics (2019) suggested when a sample size is greater than 50, a graphic such as Normal Q-Q plot should be used to determine if the data is distributed normally. In the first box plot examining data about training in ADHD/Special Education license (professors who have undertaken coursework in ADHD/Special Education license and those who have not undertaken coursework in ADHD/Special Education licensure) found in Appendix L, there are no outliers identified. In the box plot found in Appendix L that examines academic discipline (education discipline and non-education discipline) there are no outliers identified in the box plot.

Group differences in academic disciplines. Utilizing Fuermaier et al.'s (2012) measurement of stigma, a total of 48 responses for professors who indicated their academic discipline as education and 33 responses for the comparison group of professors who indicated their academic discipline as non-education were utilized. Considering the assumption of homogeneity of Levene's test in a one-way ANOVA was found to be not statistically significant ($p = .735$), when $p > .05$ in Levene's testing (see Table 2); there is no violation of assumption of homogeneity of variances, therefore meeting the assumption of homogeneity of variance (Laerd Statistics, 2019). Interpreting the results of the Tukey post analysis, when the *p*-value is found to be less than .05, this is indicative of statistical significance (Laerd Statistics, 2019). Otherwise, if the p-value is greater than .05, it is indicative of no statistical significance (Laerd Statistics, 2019). Examining the group of professors in academic disciplines of education and non-education, this researcher found a $p = .735$, therefore concluding no statistical significance between professors in education disciplines and those in other disciplines. This researcher was unable to reject the null hypothesis or accept the alternative hypothesis. Stigma levels as measured by Fuermaier et al.'s (2012) instrument was found to be not statistically significantly different for different academic disciplines, $F(1, 79) = 1.656$, $p = .735$.

Table 3

Levene's Test Homogeneity of Variance – ANOVA of Squared Deviations from Group Mean – Academic Disciplines

Source	*SS*	*df*	*Ms*	*F*	*Pr > F*
Between groups	.169	1	.169	1.656	.202
Within groups	8.071	79	.102		

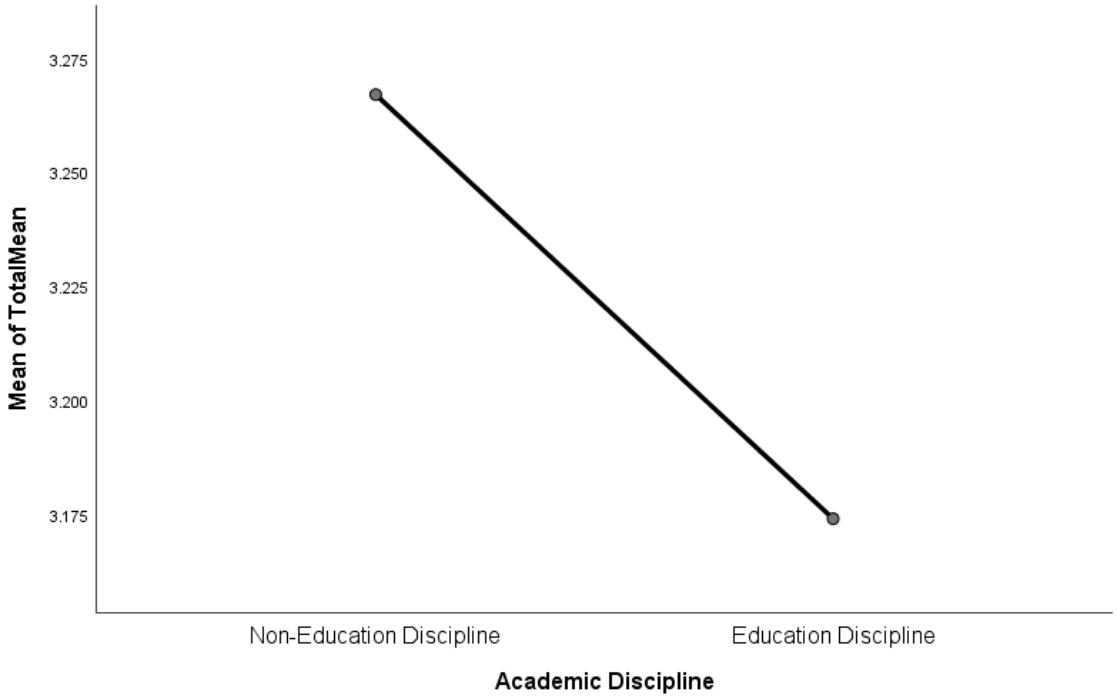

Figure 1. Mean plots: Academic discipline.

Group differences in special education certification/ADHD certificate. Utilizing Fuermaier et al. (2012) measurement of stigma, total scale result in 81 responses for professors who indicated they had undertaken courses/certification in ADHD or special education and for the comparison group of professors who indicated they had not undertaken courses/certification in ADHD or special education. Considering the assumption of homogeneity, a Levene's test in a one-way ANOVA was found to be not statistically significant ($p = .422$); when $p > .05$ in Levene's testing, there is no violation of assumption of homogeneity of variances, therefore meeting the assumption of homogeneity of variance (Laerd Statistics, 2019). Interpreting the results of the Tukey post analysis, when the *p* value is found to be less than .05, this is indicative of statistical significance (Laerd Statistics, 2019). Otherwise, if the *p*-value is greater than .05, it is indicative of no statistical significance (Laerd Statistics, 2019). Examining the group of professors with regard to training in ADHD or special education licensure, this researcher found a $p = .385$, therefore concluding statistical significance between professors with regard to

training in ADHD or special education licensure. Stigma levels, as measured by Fuermaier et al.'s (2012) instrument, was found to be not statistically significant for different academic disciplines, $F(1, 79) = .764$, $p = .422$.

Table 4

Levene's Test Homogeneity of Variance; ANOVA of Squared Deviations from Group Mean

Source	*SS*	*df*	*Ms*	*F*	*Pr > F*
Between Groups	.079	1	.079	.764	.385
Within Groups	8.161	79	.103		

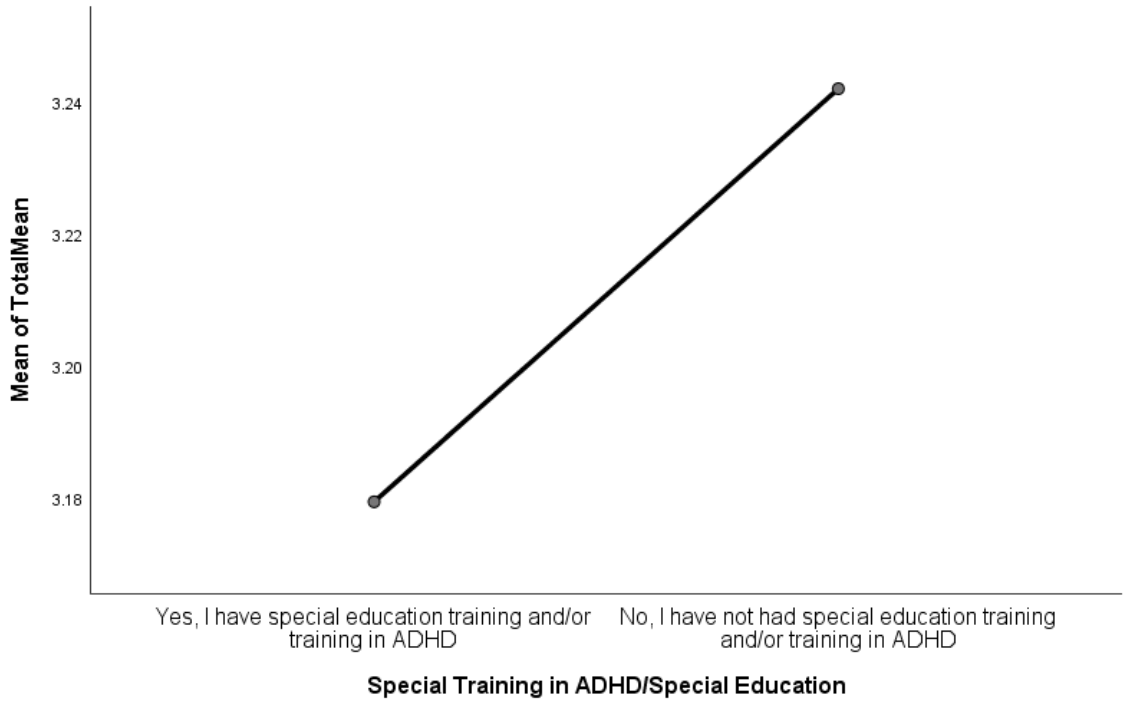

Figure 2. Mean Plots: Special training in ADHD / special education license.

Education/non-education. Participants were classified into two groups: professors with an academic discipline in education ($n = 48$) and non-education discipline ($n = 38$). This researcher found the data had no outliers, as assessed by a box plot and Q-Q Plot (see Appendix

V); data was found to be normally distributed amongst each group; homogeneity of variances was assessed by Levene's Test (p = .559); non-education discipline (M = .3.28, SD =. 37) to education discipline (M = 3.17, SD =. 34). Differences between the two groups (professors in the education discipline and professors in non-education disciplines) were not statistically significant, $F(1, 79) = 1.656$, p = .735.

Special education/ADHD. Participants were classified into two groups: professors who had undertaken coursework in ADHD or had a special education licensure (n = 42), and those who had not undertaken coursework in ADHD or had no special education licensure (n = 50). This researcher found the data had no outliers, as assessed by a box plot and Q-Q Plot (see Appendix O); data was found to be normally distributed amongst each group; homogeneity of variances was assessed by Levene's Test (p = .203); have undertaken ADHD training and/or Special Education Licensure (M = 3.17, SD =.32) to have not undertaken ADHD training and/or Special Education Licensure (M = 3.2610, SD =.37045). Differences between the two groups (professors in the education discipline and professors in non-education disciplines) were not statistically significant, $F(1, 79) = .764$, p = .385.

Instrument questions. Examining the instrument questions separately, each research question was individually analyzed (see Appendix R). On question 6, "People's attitudes about ADHD make a persons with ADHD feel worse about themselves" (n = 81, M = 1.98, SD =. 741) received a higher medium score than other questions on the survey. Question 11 (As a rule, adults with ADHD feel that telling others that they have ADHD was a mistake) was indictive of an average response of agreement from participants (n = 81, M = 2.49, SD =.673). Question 17 (Adults with ADHD have a lower self-esteem than adults without ADHD) also received a lower mean (n = 81. M = 2.72, SD = .693).

Chapter 4 Summary

Overall statistical significance aids in understanding that we can either or rejected or fail to reject the null hypothesis. With regard to academic discipline (i.e. education versus non-education discipline), the data collected determined that the two groups were not statistically significant different ($p > .05$); therefore, this researcher cannot reject the null hypothesis, nor can the null hypothesis be accepted. Therefore, this researcher found no statistical significance to consider the existence of negative perceptions of stigma toward adults with ADHD in the group of professors, with regard to academic disciplines.

With regard to ADHD coursework and/or special education (i.e. have undertaken coursework or have licensure in special education, or no coursework undertaken or licensure in special education), the data collected determined that the two groups were not statistically significant different ($p < .05$); therefore, this researcher cannot reject the null hypothesis, nor can the alternative hypothesis be accepted. Therefore, this researcher found no statistical significance to consider the existence of negative perceptions of stigma toward adults with ADHD in the group of professors, with regard to professors who have no coursework or have undertaken coursework in ADHD or have a license in special education.

Chapter 5: Discussion and Conclusion

The research focused on ADHD in the adult population is limited (Ramos-Quiroga et al., 2014; Thompson & Lefler, 2016). Further, students with disabilities comprise 11.1% of the total student population enrolled in higher education (Snyder et al., 2016). Research completed by several authors has suggested that future research should examine the perceptions of educators toward adults with ADHD (Fuermaier et al., 2014; Vance & Weyandt, 2008). Fuermaier et al. (2014) found that educators overall showed lower levels of stigmatization when compared to a similar group of individuals who responded to an identical qualitative instrument measuring stigma. However, available published literature stated that negative perceptions do exist among the population of professors that still needs to be examined (Fuermaier et al., 2014; Vance & Weyandt, 2008).

This study aimed to explore perceptions of professors in higher education toward adults with ADHD. Further, this researcher aimed to extend the body of literature that currently exists in examining perceptions of educators about ADHD. In conjunction with an instrument published by Fuermaier et al. (2012), this researcher sought to examine group differences among professors in academic disciplines (education and non-education) and coursework undertaken in ADHD or special education. Finally, this researcher aimed to validate an instrument used to measure stigma levels toward adults with ADHD within the United States population of professors in higher education.

In Chapter 5, in conjunction with the study's conceptual framework and methodological findings, this section will assess how well this dissertation addressed the results and problems of the study. Further, a discussion on the limitations of the study, as well as implications for future

practice, policy, and theory are discussed in this chapter. Future research recommendations was included, as well as insights and interpretations of this researcher's findings.

Summary of the Results

The purpose of this quantitative, causal-comparative study was to examine if, and to what extent, group differences exist between professors' perceptions toward adults with ADHD, and the independent variables of their specific teaching content disciplines of non-education/education and coursework/certifications in special education or ADHD. Based on a review of available topical research and the personal experiences of the researcher, this researcher developed the research study based on a conceptual framework utilizing Goffman's (1963) theory of stigma to guide this study. Further, this researcher used a quantitative causal-comparative approach and sought to collect data, and to further analyze it based on this study's research questions.

Through the formal theory of stigma (Goffman, 1963) and two research questions, this researcher attempted to analyze professors' differences in perception of adult students with ADHD as influenced by their academic teaching disciplines (i.e., education versus non-education) and ADHD course work and/or special education licensure (i.e., have undertaken ADHD coursework and/or "have a special education licensure" or "have not undertaken ADHD coursework and do not have special education licensure"). Goffman (1963) theorized stigma as the perception of negative attributes, such as being mentally ill or disabled; being a criminal; or having affiliations to particular race or ethnicity; which exist in society and yield an unfavorable social identity. It is assumed that stigma is the perceived assumption of undesirable deviance and is dependent upon reaction levels, which thus creates stigma (Bos et al., 2013; Goffman, 1963).

While examining the available literature on perceptions of professors toward adult students with ADHD, this researcher found a gap in relevant information. The literature review revealed that although most students stated that they had good experiences with their university professors, some students felt subjected to negative stigma (Bolourian et al., 2018). A study conducted by Becker and Palladino (2016) concluded with a finding that a small subgroup of faculty members held negative perceptions toward students with disabilities. Further, Stevens et al.'s (2018) research concluded that 11.6% of faculty felt that by giving students accommodations for a documented disability, they had given these students an unfair advantage.

Since beginning an examination of the available literature and designing this dissertation study, this researcher was not able to find sufficient literature in peer-reviewed journals with regard to perceptions of professors toward adult students with ADHD. The gap mentioned earlier still remains largely unfilled. However, there has been recent relevant literature published relating to perceptions of people with ADHD.

A recent, systematic, psychometric review conducted by Sastre-Rus, García-Lorenzo, Lluch-Canut, Tomás-Sábado and Zabaleta-Del-Olmo (2019) included the instrument utilized in this study by Fuermaier et al. (2012). The researchers stated that even though ADHD is a known disorder, some professors often doubt its existence. Further, the researchers examined several instruments available which quantify stigma and perceptions toward others with various mental illnesses. Fuermaier et al's. (2012) instrument was the only instrument identified within the systematic, psychometric review. Sastre-Rus et al. (2019) stated that the quality of the assessment published by Fuermaier et al. (2012) was found to be good, with a fair rating of validity for the methodological quality of the content.

Additionally, Masuch et al. (2018) examined internalized, perceived stigma, and anticipated discrimination toward adults with ADHD. The researchers concluded that for adults with ADHD, their levels of anticipated discrimination are highly prevalent (Masuch et al., 2018). Further, discrimination that is anticipated and internalized stigma in adults with ADHD correlate with the symptoms of ADHD, quality of life, distress, and self-esteem. Finally, ADHD correlates to public stereotypes and is much different than the stereotypes of those with related mental illnesses (Masuch et al., 2018).

Research questions. The research questions that guided this research were:

RQ1: Is there a difference in professors' perceptions of adults with ADHD when they have or have not undertaken training in ADHD or hold a special education license?

H10: There is no statistically significant difference in professors' perceptions of adults with ADHD when they have or have not undertaken training in ADHD or hold a special education license?

H1A: There is a statistically significant difference in professors' perceptions of adults with ADHD when they have or have not undertaken training in ADHD or hold a special education license?

RQ2: Is there a difference in professors' perceptions of adults with ADHD if they teach in education programs or a non-education program?

H20: There is no statistically significant difference in professors' perception of adult students with ADHD if they teach in education programs or a non-education program.

H2A: There is a statistically significant difference in professors' perception of adult students with ADHD if they teach in education programs or a non-education program.

Research Question 1. With regard to academic discipline (i.e., education versus non-education discipline), the data collected determined that the two groups were not statistically different ($p = .559$); therefore, this researcher failed to reject the null hypothesis, nor can the alternative hypothesis be accepted. $F(1, 79) = 1.656$, $p = .735$

Research Question 2. With regard to ADHD coursework and/or special education (i.e., have undertaken coursework/have licensure held in special education, or no coursework undertaken or licensure in special education), the data collected revealed that the two groups were not statistically significant different ($p > .05$); therefore, this researcher cannot reject the null hypothesis, nor can the alternative hypothesis be accepted. $F(1, 79) = .764$, $p = .385$

Discussion of the Results

This research study examined the group differences that existed among higher education professors' perceptions toward adults with ADHD with regard to academic discipline and coursework undertaken in ADHD or special education licensure. The results of the data collected showed that there was no statistical significance between professors' perceptions of adults with ADHD with regard to their academic discipline type. Additionally, the second research question examined professors' ADHD coursework and/or licensure in special education. The results analyzed for this independent variable found no statistical significance between the groups with regard to coursework undertaken in ADHD and/or special education licensure.

Although the researcher analyzed the data for both research questions, there was no statistical significance between the groups of professors with regard to academic discipline

(education and non-education disciplines) and coursework in ADHD or special education (undertaken or not undertaken), and this study extended published research literature by Fuermaier et al. (2014). This research extended the published research referenced in Chapter 2 of this dissertation, which examines stigma and negative perceptions that may or may not exist from professors in higher education toward adults with ADHD. The statistical analysis showed that there was no statistical significant between the two groups of professors with regard to academic discipline (professors in education and professors in non-education academic disciplines) and professors who have or have not undertaken courses in ADHD or hold a special education licensure.

The data collected was based on a small sample size with a lower power. However, the data is evidentiary that negative perceptions and stigma have no statistical value between higher education professors' perceptions toward adult students with ADHD with regard to their academic disciplines and courses undertaken in ADHD or licensure in special education, $F(1, 79) = .764$, $p = .385$. However, a deeper analysis is needed to evaluate professors' attitudes and perceptions toward adult students with ADHD. Compared to the Fuermaier et al. (2012) and Fuermaier et al. (2014) studies, this study utilized a small number of participants. Further, continued research examining perceptions of professors is imperative due to the increasing rates of students with disabilities enrolling in postsecondary education (Kim & Aquino, 2017; Sniatecki et al., 2015).

Discussion of the Results in Relation to the Literature

The diagnosis of ADHD can be associated with stigmatizing behaviors toward groups of individuals with ADHD (Mueller et al., 2012). Many of the symptoms exhibited by students with ADHD may violate the standards of "normal" behavior (Dosreis et al., 2010). Students may have

experienced negative perceptions and perceived stigma, which may have prevented them from seeking out accommodations from student services offices or their professors (Bolourian et al., 2018). However, the results of this research survey concluded that there is no statistical significance in stigma toward adults with ADHD with regard to professors' academic discipline or coursework in ADHD/special education. The 37 questions in the survey asked participants to rate the stereotypical criteria of someone with ADHD, on a scale of 1 to 4. Perceptions and stigma may impact their experiences with faculty members; perceptions of themselves and others; and degree program choices (Lightfoot et al., 2018).

Examining perceptions of professors toward adult students with ADHD continues to be an essential research area that requires future research. Students with ADHD continue to enroll in higher education at increasing rates (Kim & Aquino, 2017; Sniatecki et al., 2015). Further, students with disabilities comprise 11.1% of the total student population enrolled in higher education (Snyder et al., 2016), making it imperative that researchers examine the ways in which stigma can be reduced in order to increase the likelihood of these students graduating with degrees. However, this study concluded that there was no statistical significance between professors' professors in education versus non-education academic disciplines.

Becker and Palladino (2016) contended that the ways in which professors approach the individual accommodations that students with disabilities need could help or hinder the true intent of disability laws, further contributing to unrealistic accommodations on the part of the students. Within the existing body of research, researchers reported that some students felt that professors were non-accommodating and belittling toward students with disabilities (Becker & Palladino, 2016; Bolourian et al., 2018). Further, research has shown that professors may not

have sufficient knowledge with regard to the laws and regulations of the ADA (Stevens et al., 2018).

Many studies have indicated that professors are willing to accommodate students with disabilities (Bourke et al., 2000; Murray et al., 2008; Thompson et al., 1997). However, research has shown some professor may be unwilling to be accommodate or may "tone down" the needs of students with disabilities (Becker & Palladino, 2016). Although this study concluded that there was no statistical significance with regard to stigma toward adults with ADHD when considering professors' academic disciplines or coursework taken in ADHD or special education licensure, additional research is needed. Due to these perceptions and stigma, future research is needed to understand the impacts of discrimination that students may face, as well as the nature of the behaviors of individuals with ADHD (Lightfoot et al., 2018).

Instrument reliability. Fuermaier et al. (2012) mentioned that there is a lack of an available instrument that would effectively and accurately measure stigma towards adults. Further, the gap of research literature that examines adults with ADHD could be the direct result of a lack of available assessment instruments to accurately determine perceptions and stigma toward adults with ADHD (Fuermaier et al., 2014). Many of the available instruments are out of date and do not follow the DSM-IV guidelines for an ADHD diagnosis; they examine only perceptions of children and adolescent students with ADHD and were published years prior (Fuermaier et al., 2012; Fuermaier et al., 2014, Sciutto et al., 2000). Existing published instruments examine children and adolescents, and do not distinguish perceptions or stigma with regard to the separate groups of children, adolescents, and adults with ADHD (Fuermaier et al., 2012; Fuermaier et al., 2014). Fuermaier et al.'s (2012) *Measurement of Stigma Levels Towards Adults with ADHD* was found reliable and validated amongst the Netherlands population;

however, it had not been utilized within the United States population of educators. This study focused on finding this instrument to be reliable and validated for use with the United States population of educators. This researcher concluded that additional research is needed to enhance this instrument or that another, better instrument should be developed.

Limitations

This study included several limitations. The first limitation was the fact that this researcher had no control over the limitations that may have existed within the study (Creswell, 2018). The second limitation was that, by utilizing a quantitative-correlational design method, this researcher was not able to determine the cause of that relationship through a correlational design method. The third limitation was the lack of control over the actual number of participants answering the survey or the inability to know the participants' responses to demographic survey questions. The final limitation was the need to revalidate the internal consistency of the instrument within the United States population, as Fuermaier et al. (2012) and Fuermaier et al.'s (2014) studies suggested future research to further develop the instrument.

With regard to the first limitation, this researcher did not have any control over the limitations that existed in the study. With regard to the second limitation, both research questions were found to not be statistically significant: perceptions of professors towards adults with ADHD with regard to academic discipline, and perceptions of professors towards adults with ADHD with regard to the existence of ADHD coursework or special education licensure. The researcher was able to examine the relationships between groups; however, it was not possible to determine a cause for one research question being statistically significant while the other was not statistically significant.

With regard to the third limitation, the majority of the data was collected from educational institutions in Oregon and Massachusetts. A small number of participants were professors in Texas. Over 1,200 participants from these institutions were invited via email to participate in the study; however, only a small number (n = 86) of these participants responded and participated. The remainder of the participants was solicited from social media groups on Facebook and LinkedIn for professors in higher education.

Lastly, the data collected showed a high internal consistency using Cronbach's alpha (a = .913). Therefore, it was found to be internally consistent using the data collected from the United States population. However, this study obtained a small number of surveys. The considerations for future research with regard to this study are discussed later in this chapter.

While completing the literature review, this researcher found a gap in studies that examined adults with ADHD with regard to professors' perceptions toward adults with ADHD. Quantitative surveys that focused on the perceptions/knowledge of persons with ADHD focused mainly on children and adolescents. Instruments such as Sciutto et al.'s (2000) focused on children and did not include the updated DSM criteria for symptomology or diagnosing of ADHD. The Fuermaier et al. (2012) instrument was found reliable and valid by Fuermaier et al. (2012) and through a subsequent study in 2014 by the same authors. Fuermaier et al. (2014) utilized the Likert-type scale in the instrument by Fuermaier et al. (2012) to elicit responses to a questionnaire that allows for the measurement of stigma toward adults with ADHD. This is the only instrument at the time of writing this dissertation that examines perceptions of individuals toward adults with ADHD through six subscales by collecting data on a Likert-type scale. However, the way in which the instrument was set up may have caused participant bias. Prior to answering the instrument questions, participants were made aware that the study was examining

perceptions of professors toward adults with ADHD. Therefore, participants may have considered their responses to the questions more carefully in particular ways. Research stipulates that when participants' responses to a self-report questionnaire are influenced by social desirability responses, there is a tendency for participants to portray a favorable image of themselves (van de Mortel, 2008). However, van de Mortel (2008) found that when participants were reporting on attitudes toward certain groups or discrimination experiences, there was no statistically significant indicator of social desirability response. Some respondents personally reached out to this researcher, indicating that "N/A" or "I Don't Know" should have been added to the response choices, as some questions may have warranted this type of response. Statements that include a neutral value should be used because Nederhof (1985) found that they are less likely to provoke biased responses.

Another reason why the results may have deviated from the researcher's expectations is that the two studies this dissertation was modeled upon Fuermaier et al. (2012) and Fuermaier et al. (2014), which utilized a higher number of participants. Fuermaier et al. (2014) had a total of 340 participants, and Fuermaier et al. (2012) had a total of 1,261. Both studies were able to utilize factorial analysis to compare results, and also had sufficient data to analyze the six subscales within the instrument. However, this study did not collect as much data as either of the two studies conducted by Fuermaier et al. (2012, 2014).

Implications of the Results for Practice, Policy, and Theory

The results indicated no statistical significance with regard to negative perceptions by professors toward adults with ADHD; however, continued research is needed to examine perceptions at a deeper level. Examining the results of study is imperative to understand the direction research should consider going forward, further the results concluded, and understand

how findings may impact practice, policy, and theory going forward. The data collected within this study concluded that there was no statistical significance with regard to the two research questions. Therefore, this researcher could not reject the null hypothesis or accept the alternative hypothesis. Literature reviewed for this study concluded that stigma and negative perceptions toward adults with ADHD and disabilities continue to exist among professors in higher education (Bolourian et al., 2018; Fuermaier et al., 2012; Fuermaier et al., 2014). Therefore, the following section discusses the implications of this research with regard to practice, policy, and theory.

With regard to practice, this research has no direct implications on how professors educate adult students with ADHD. However, with continued examination of the perceptions that professors hold toward adult students with ADHD, the practice of how professors educate and interact with students who have disabilities such as ADHD could potentially be modified. According to Stevens et al. (2018), 11.6% of professors felt that students who received accommodations for disabilities were given an unfair advantage. Further, reports by students with ADHD indicated that some professors negatively affected students by belittling them or engaging in negative interactions with them. Additionally, researchers should consider examining pedagogical approaches to determine best practices for professors and how they should educate students with disabilities.

With regard to policy, this research also does not directly affect or extend any published policy or hypothesize the creation of a new policy. Further, this research does not directly result in the need to change policy.

However, with additional research and examination of perceptions of professors toward adult students with ADHD, the theoretical concepts in Goffman's (1963) theory on stigma can be

further examined. Goffman (1963) theorized that individuals hold stigma against certain groups of people who fall into several categories, such as disability. Further, it is hypothesized that additional examination of perceptions of professors toward adults with ADHD could prompt the implementation of policy changes.

Recommendations for Future Research

Negative experiences and stigmatizing behaviors are underreported (Thompson & Lefler, 2016). It is imperative that future research examines stigma and perceptions toward individuals with ADHD (Thompson & Lefler, 2016). Continued research and examination of the perceptions of educators toward adults with ADHD is needed to fill gaps of information that currently exist within the literature, and further evaluation of the assessment tools that examine perceptions and stigma are also critical. However, with regard to this research, there was no statistical significance for either of the research questions.

If this study were to be replicated, this researcher would propose several changes. First, it is important to consider the sample size; a larger number of participants should be recruited from a variety of universities and colleges. Future studies utilizing this instrument should consider purposively sampling a larger population, including a small sampling from each state in the United States, to achieve a more accurate depiction of United States professors' perceptions. Data collected, examined, and analyzed showed no statistical findings with regard to both research questions. This researcher found a low response rate (n = 81) in comparison to Fuermaier et al.'s (2014) study (n =340). To broaden the response to collect data, a mixed-methods study is advisable. Utilizing both a quantitative and qualitative method within the research could produce better evidence to further examine perceptions of professors toward adults with ADHD. Further, access to populations of professors was limited within this study.

This research utilized higher education institutions in Massachusetts, Texas, and Oregon. Future research should consider utilizing at least one university or college from additional states within the United States.

Second, when applying to the individual IRBs at colleges and universities, it should be clarified that the survey is for all professors, adjuncts, and educators who instruct students 18 years of age and older. One university refused to distribute the survey to their traditional staff members because they felt that the study was focused more on adults and did not consider students in the traditional program. In addition, the time of year in which data is collected from universities and colleges should be considered. Most of the participant data in the present study was collected over the summer; one university waited two months before sending out the invitation to their staff members at the beginning of the new academic year. If this study were to be repeated, the survey should be sent out in late September or October, with a repeat sending at the beginning of November, for greater participation from potential respondents.

Another suggested change would be to use a different instrument. The instrument in the present study consisted of questions that may seem biased, which may have created socially acceptable responses and research bias within the study. This could have been the result of a not statistically significant finding within the data analyzed. This researcher had a few participants who reached out to inquire how an instrument such as Fuermaier et al.'s (2012) could effectively quantify perceptions.

Future research should examine professors' perceptions with regard to their own personal experiences toward individuals with ADHD, in professional and personal settings utilizing qualitative research methods. By examining experiences in personal relationships, such as with close family members, a better understanding of perceptions can be presented. Additional future

research should consider examining perceptions of higher education educators as compared to those of secondary (middle and high school) educators to determine if negative levels of perceptions exist amongst these two groups. Future studies should also consider creating a more reliable instrument to assess perceptions of individuals toward adults with ADHD. The Fuermaier et al. (2012) instrument is currently the only researched and published instrument that examines such perceptions.

Conclusion

Having a better understanding of the challenges of adults with ADHD is imperative for future research, and for the professors who teach these adults in higher education institutions. Continuing research on the negative and positive perceptions that professors have toward adults with ADHD will help future research and the professional development provided to educators in higher educational institutions.

This dissertation examined two research questions. To answer these two research questions, a study was conducted that surveyed professors (adjuncts, full time/tenured professors, educators) of four universities located in Massachusetts, Oregon, and Texas. This researcher found no statistically significant relationships between academic disciplines, $F(1, 79) = 1.656$, $p = .735$. Moreover, this researcher did not find a statistically significant relationship between professors who completed ADHD/disability-related professional training, $F(1, 79) = .764$, $p = .385$. As a result of these findings, this researcher accepted the first null hypothesis (H01) and rejected the alternative hypothesis (HA1).

Although this study focused on the level of perceptions (negative and positive) that professors have toward adults with ADHD, other factors play a role in the level of perceptions. Additional factors and approaches should be considered in future research, including the

personal experiences, frequency of contact, and familial/friend relationships that professors have with others with ADHD (both adult and adolescent); a qualitative analysis of perceptions; and an exploration of perceptions of educators in different types of school settings (private, not-for-profit, and for-profit educational institutions) (Fuermaier et al., 2014). Considering professors' perceptions toward adults with ADHD is beneficial to the administrators of higher education institutions as well as to the students both with and without disabilities. It is the hope of this researcher that this valuable research will make positive impacts to better the educational environment for all.

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Appendix A: Informed Consent

CONSENT FOR SURVEY (click consent) with follow-up recruitment

The purpose of this study is to examine perceptions professors have towards adult students with attention deficit hyperactive disorder.

The study has two phases; each phase has the same data collection. The first will use the data to run validation and reliability of the instrument for the United States Population, and the second will run statistics based on the independent variables. We expect approximately 76 volunteers to take this online survey. The survey can be completed between June 2019 and October 2019 and may remain open for a period of approximately two months. This online survey will ask you questions about your teaching experiences. Completing the survey should take approximately 20 minutes of your time. The survey will ask you how many years you have taught and other information.

There are no risks to participating in this study other than the everyday risk of your being on your computer as you take this survey. The benefit is that your answers will help us gather information to fill in the gaps of research around teaching adult students with ADHD. You could benefit by reflecting on your individual answers to these questions listed on the instrument.

Your personal information will be protected. This survey is firewall and password protected so that only the researcher (me) can see your answers and they cannot be linked to your identity. The information/topic of the questions is not sensitive or risky. However, if you were to write something that might allow someone to possibly deduce your identity possibly, we would remove this information, and we would not include this information in any publication or report. All data will be destroyed three years after the study ends.

You can stop answering the questions in this online survey if you want to stop.

Please print a copy of this for your records. If you have questions you can talk to or write the principal investigator, Alexandria M Vassallo at [Redacted]. If you want to talk with a participant advocate other than the investigator, you can write or call the director of our institutional review board, Dr. OraLee Branch (email [redacted] or call [redacted]) or Dr. Jessica Carlson (email [redacted] or call [redacted], chair of the Institutional Review Board (IRB) at [redacted]. The IRB is a body that protects research participants.

Click the button below to consent to take this survey.

Appendix B: Demographic Questionnaire

Demographics Questionnaire

This section is primarily to be used to collect demographic information for the study. Your responses will be kept confidential and private. Any personal identifier information will not be published or used in the study. Further, your responses will not be published in connection to your name or email address. The first part of this survey will ask you demographic information. Please answer these questions to the best of your ability. Each question in this demographic survey is optional. We appreciate you taking the time to take this survey and provide data for this research study.

1. **Which academic discipline area do you teach in?**
    a. **Applied Sciences** (Business, Engineering and Technology, and Medicine and Health)
    b. **Education** (Elementary, Secondary, Special Education)
    c. **Formal Sciences** (Computer science, mathematics, statistics)
    d. **Humanities** (Arts, performing arts, visual arts, history, languages and literature, law, philosophy, and theology)
    e. **Natural Sciences** (Biology, Chemistry, Earth Sciences, Space Sciences, and Physics)
    f. **Social Sciences** (Anthropology, Archaeology, economics, human geography, political science, psychology, sociology)
2. **Have you undertaken any special training in ADHD or Special Education?**
    a. Yes, I have special education training and/or training in ADHD
    b. No, I have not had special education training and/or training in ADHD

Appendix C: Measurement of Stigma Toward Individuals Adult ADHD

Original: Measurement of Stigmatization toward Adults with Attention Deficit Hyperactivity Disorder (Fuermaier et al., 2014). The survey is completed using the Likert-type scale. – 3 = strongly disagree - 2 = disagree -1 = somewhat disagree 1 = somewhat agree 2= agree 3 = strongly agree

The modified version of the Measurement of Stigmatization Toward Adults with Attention Deficit Hyperactive Disorder has four ratings: Strongly Agree, Agree, Disagree, and Strongly Disagree.

Survey Questions

1. Adults with ADHD are bad parents and have problems with raising children.

2. I would mind if my investment advisor had ADHD.

3. Many adults with ADHD simulate the symptoms.

4. Adults with ADHD misuse their medication (sell it to others, take too much . . .) .

5. ADHD is invented by drug companies to make a profit.

6. People's attitudes about ADHD make persons with ADHD feel worse about themselves.

7. Many adults with ADHD exaggerate their symptoms in order to be medicated.

8. Adults with ADHD are of lower social status.

9. ADHD is a childhood disorder and not seen in adults.

10. Adults with ADHD lie more often than adults without ADHD.

11. Adults with ADHD have a lower IQ than adults without ADHD.

12. Adults with ADHD are more often involved in traffic errors.

13. As a rule, adults with ADHD feel that telling others that they have ADHD was a mistake.

14. I would not mind if a doctor who has ADHD treated me.

15. Adults with ADHD care less about other's problems.

16. ADHD is caused by bad parenting.

17. Adults with ADHD are able to take care of a group of children in kindergarten.

18. I could tell when a person around me has ADHD.

19. Adults with ADHD act without thinking.

20. Adults with ADHD have a different sense of humor than adults without ADHD.

21. Adults with ADHD have a lower self-esteem than adults without ADHD.

22. Extensive exposure to video games and TV shows can cause ADHD.

23. Adults with ADHD do not engage enough in sports.

24. Adults with ADHD feel excluded from society.

25. You cannot rely on adults with ADHD.

26. If I had a business, I would not hire a person with an ADHD diagnosis.

27. Adults with ADHD are self-focused and egoistic.

28. I would go on a date with someone with ADHD.

29. I would mind if the teacher of my children had ADHD.

30. Many adults pretend to have ADHD just to get access to medication. .

31. Adults with ADHD are less able to give advice.

32. Adults with ADHD have no problems in making friends.

33. Adults with ADHD are less successful than adults without ADHD.

34. ADHD is a consequence of childhood trauma.

35. Adults with ADHD are able to lead a group of people.

36. Under medication, adults with ADHD are less trustworthy.

37. Adults with ADHD cannot deal with money.

Appendix D: Permission to Use Survey from the Author

Fuermaier, A.B.M. [redacted] Thu, Dec 27, 2018 at 3:00 PM

To: Alexandria Vassallo [redacted]

Cc: Klaus Lange [redacted]

Dear Alexandria,

Thanks for your interest in our research. You are welcome to make use of the items as we described them in our article.

Good luck in your doctoral studies!

Anselm

[Quoted text hidden]

--

Dr. Anselm Fuermaier | Department of Clinical and Developmental Neuropsychology | University of Groningen |

Appendix E: Power Analysis from G*Power

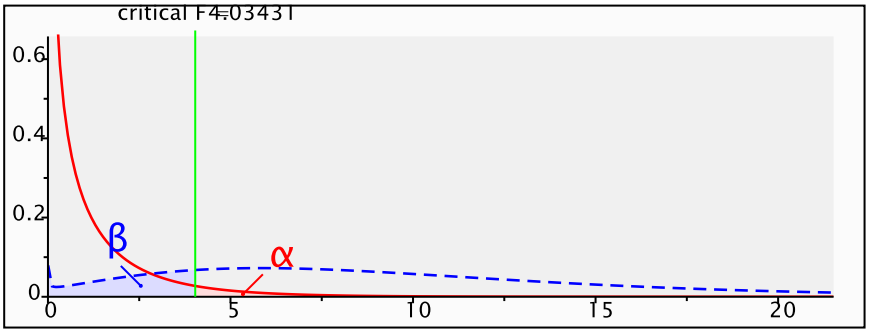

Figure 3. Power analysis from G*Power.

F tests - ANOVA: Fixed effects, omnibus, one-way

Analysis:	A priori: Compute required sample size		
Input:	Effect size f	=	0.40
	α err prob	=	0.05
	Power (1-β err prob)	=	0.80
	Number of groups	=	2
Output:	Noncentrality parameter λ	=	8.3200000
	Critical F	=	4.0343097
	Numerator df	=	1
	Denominator df	=	50
	Total sample size	=	52
	Actual power	=	0.8074866

Appendix F: E-mail Invitation

Dear Professor,

My name is Alexandria Vassallo, M.Ed and I am a Doctoral Candidate for the Doctoral of Education program at Concordia University in Portland, Oregon. I am currently collecting data and research on perceptions professors have towards adult students with attention deficit hyperactive disorder (ADHD) through a measurement instrument published by Fuermaier et al. (2012).

Your voluntary participation is requested in this survey! You will be asked to answer some questions about your knowledge, perception, and attitude towards adult students with ADHD using an instrument created by Fuermaier et al. (2012). Please be assured that your responses will be kept confidential to the extent of state and federal laws.

The study should take you around 20 minutes to complete. Your participation in this research is voluntary. You have the right to withdraw at any point during the study, for any reason, and without any prejudice. If you would like to contact the Principal Investigator in the study to discuss this research, please e-mail [redacted].

Please note that this survey is best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.
>>>> Survey Link Here <<<<<<
Your participation is greatly appreciated!

Alexandria M Vassallo, M.Ed
[email redacted]

Appendix G: LinkedIn and Facebook Posting Verbiage

I am a Doctoral Candidate for the Doctoral of Education program at Concordia University in Portland, Oregon. I am currently collecting data and researching perceptions professors have towards adult students with attention deficit hyperactive disorder (ADHD) through a measurement instrument published by Fuermaier et al. (2012). Your participation in this research is voluntary, and any personal information collected will not be used in the publication of the survey and will remain confidential and private.

>>>> Survey Link Here <<<<<<
Your participation is greatly appreciated!

Appendix H: Normality Plots: Case Summary

		N	%	*N*	%	*N*	%
Total Standard Deviation	Non-Education Discipline	38	97.4%	1	2.6%	39	100.0%
	Education Discipline	54	100.0%	0	0.0%	54	100.0%

Education / Non-Education			Statistic	*SE*
Non-Education Discipline	Mean		.6385	.02562
	95% Confidence Interval for Mean	Lower Bound	.5866	
		Upper Bound	.6905	
	5% Trimmed Mean		.6371	
	Median		.6478	
	Variance		.025	
	Std. Deviation		.15796	
	Minimum		.33	
	Maximum		1.04	
	Range		.71	
	Interquartile Range		.21	
	Skewness		.102	.383
	Kurtosis		.047	.750
Education Discipline	Mean		.6787	.02579
	95% Confidence Interval for Mean	Lower Bound	.6270	
		Upper Bound	.7304	
	5% Trimmed Mean		.6786	
	Median		.6857	
	Variance		.036	
	Std. Deviation		.18950	
	Minimum		.24	
	Maximum		1.16	
	Range		.92	
	Interquartile Range		.25	
	Skewness		.036	.325
	Kurtosis		-.044	.639

Education / Non-Education	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	*df*	*Sig.*	Statistic	*df*	*Sig.*
Non-Education Discipline	.076	38	.200*	.989	38	.969
Education Discipline	.051	54	.200*	.993	54	.990

Appendix I: Stem-and-Leaf Plots: Education / Non-Education

Stem-and-Leaf Plots: Education / Non-Education

TotalStandardDeviation Stem-and-Leaf Plot for
Education = Non-Education Discipline

Frequency	Stem & Leaf
3.00	3 . 247
5.00	4 . 24689
6.00	5 . 225666
12.00	6 . 112245677899
6.00	7 . 223368
5.00	8 . 01568
.00	9 .
1.00	10 . 4

Stem width: .10
Each leaf: 1 case(s)

TotalStandardDeviation Stem-and-Leaf Plot for
Education = Education Discipline

Frequency	Stem & Leaf
1.00	2 . 3
4.00	3 . 4479
4.00	4 . 0799
8.00	5 . 00344577
12.00	6 . 011234456889
13.00	7 . 0112224678999
4.00	8 . 0249
7.00	9 . 0016899
.00	10 .
1.00	11 . 5

Stem width: .10
Each leaf: 1 case(s)

Appendix J: Normal Q-Q Plots for Education / Non-Education

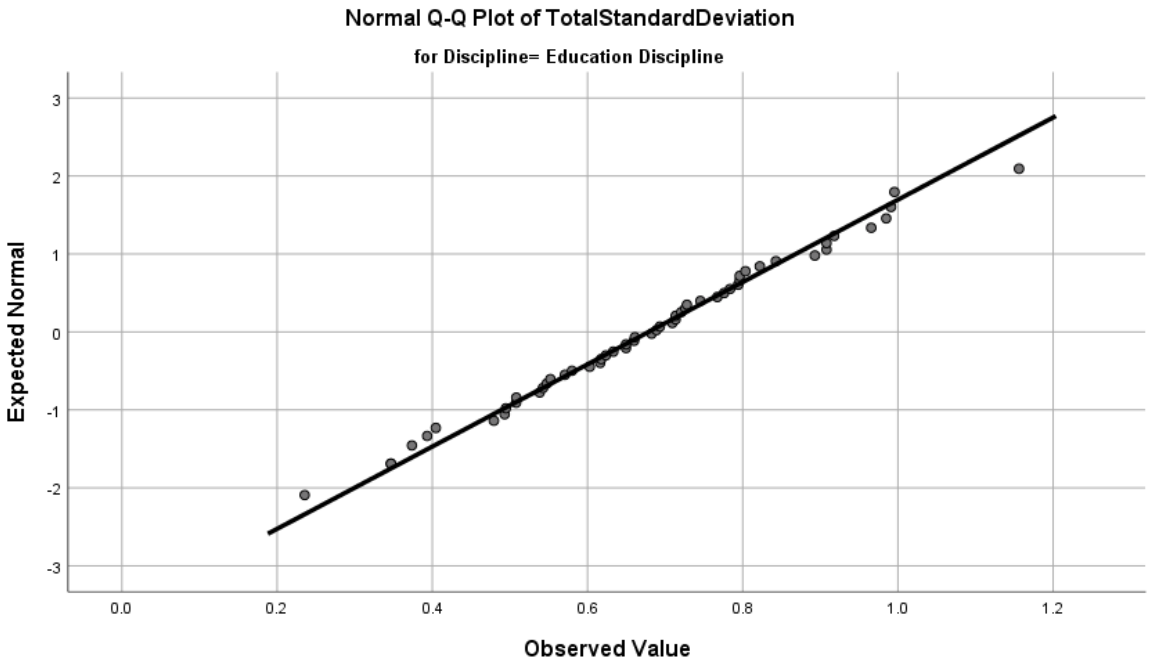

Figure 4. Normal Q-Q plot: Education/non-education.

Appendix K: Detrended Normal Q-Q Plots: Education / Non-Education

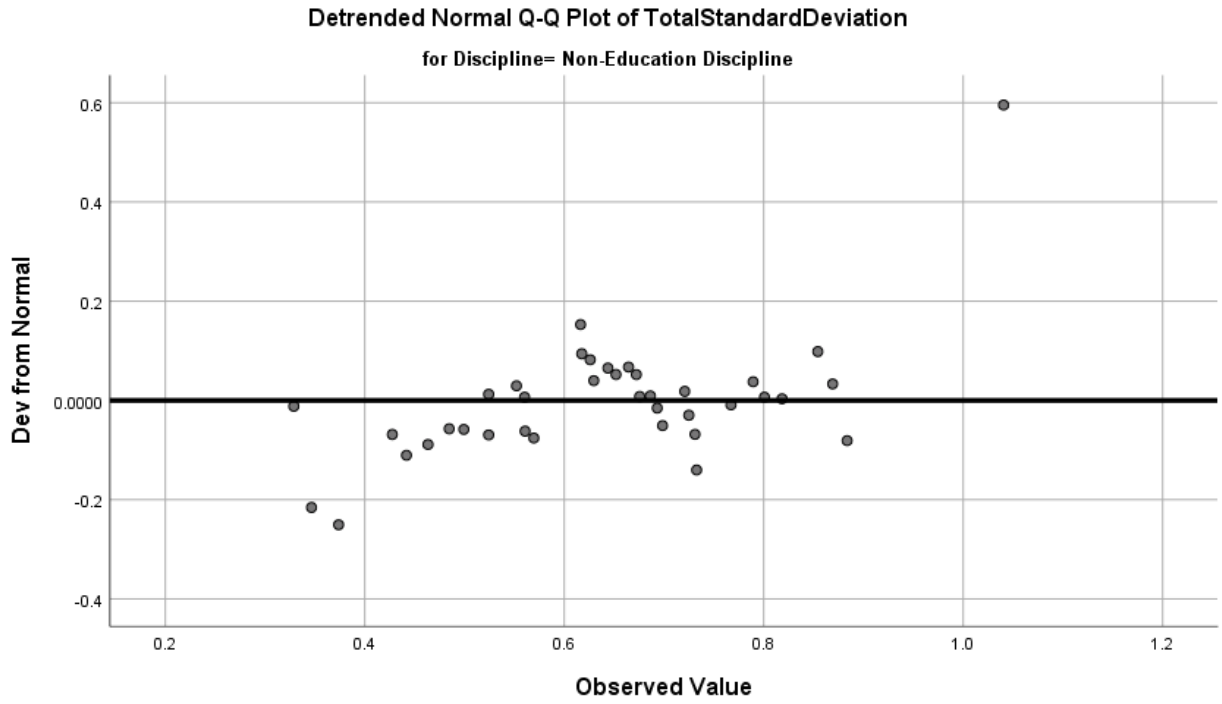

Figure 5. Detrended normal Q-Q plot: Education/non-education.

Appendix L: Box Plot: Education / Non-Education

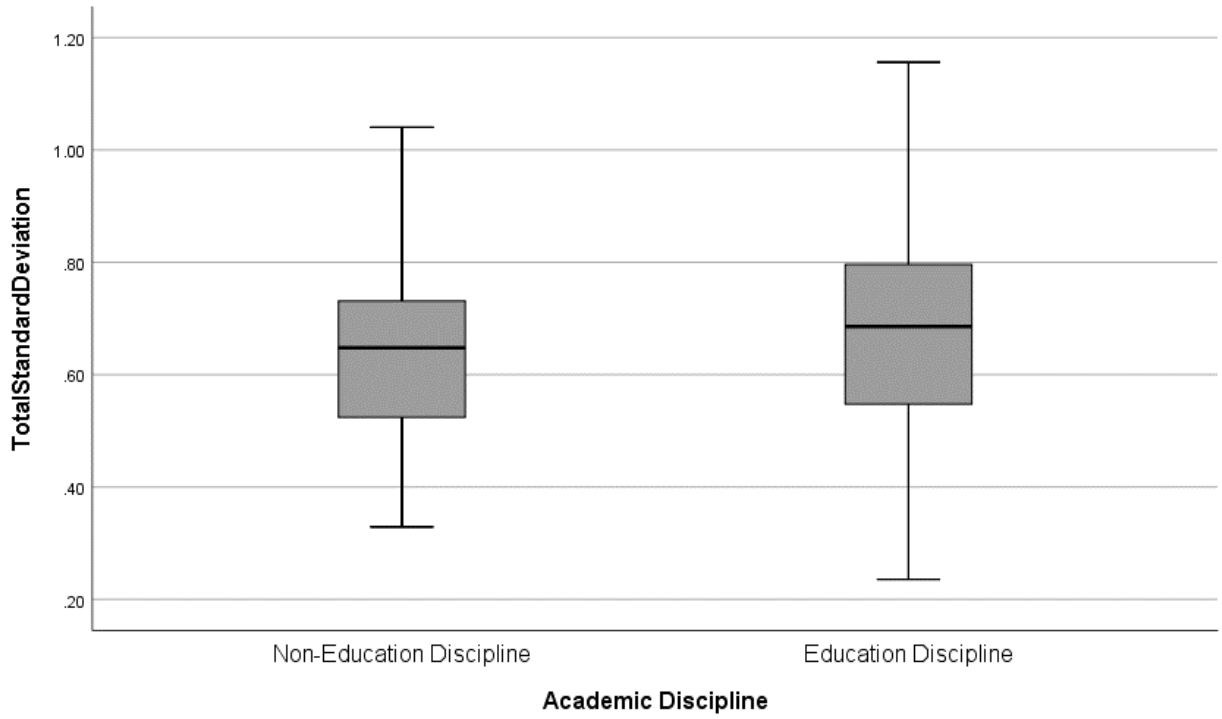

Figure 6. Box plot: Education / non-education.

Appendix M: Normality Plots Case Process Summary: Special Training in ADHD/Special Education

Special Training in ADHD/Special Education	Cases					
	Valid		Missing		Total	
	N	%	*N*	%	*N*	%
Yes, I have special education training and/or training in ADHD	42	97.7%	1	2.3%	43	100.0%
No, I have not had special education training and/or training in ADHD	50	100.0%	0	0.0%	50	100.0%

Special Training in ADHD/Special Education			Statistic	Std. Error
Yes, I have special education training and/or training in ADHD	Mean		.7039	.02693
	95% Confidence Interval for Mean	Lower Bound	.6495	
		Upper Bound	.7583	
	5% Trimmed Mean		.7021	
	Median		.6910	
	Variance		.030	
	Std. Deviation		.17451	
	Minimum		.35	
	Maximum		1.16	
	Range		.81	
	Interquartile Range		.22	
	Skewness		.244	.365
	Kurtosis		.070	.717
No, I have not had special education training and/or training in ADHD	*M*		.6270	.02457
	95% Confidence Interval for Mean	Lower Bound	.5776	
		Upper Bound	.6764	
	5% Trimmed Mean		.6250	

Median	.6407	
Variance	.030	
Std. Deviation	.17373	
Minimum	.24	
Maximum	1.04	
Range	.80	
Interquartile Range	.23	
Skewness	.014	.337
Kurtosis	-.127	.662

Special Training in ADHD/Special Education	Kolmogorov-Smirnov[a] Statistic	*df*	*Sig.*	Shapiro-Wilk Statistic	*df*	*Sig.*
Yes, I have special education training and/or training in ADHD	.093	42	.200*	.989	42	.944
No, I have not had special education training and/or training in ADHD	.058	50	.200*	.990	50	.954

Appendix N: Stem-and-Leaf Plots: Special Training in ADHD/Special Education

TotalStandardDeviation Stem-and-Leaf Plot for
QID67= Yes, I have special education training and/or training in ADHD

Frequency	Stem & Leaf
2.00	3 . 49
3.00	4 . 079
5.00	5 . 04577
13.00	6 . 0112344458899
7.00	7 . 1122789
6.00	8 . 004589
5.00	9 . 01689
1.00	Extremes (>=1.16)

Stem width: .10
Each leaf: 1 case(s)

TotalStandardDeviation Stem-and-Leaf Plot for
QID67= No, I have not had special education training and/or training in ADHD

Frequency	Stem & Leaf
1.00	2 . 3
5.00	3 . 24477
6.00	4 . 246899
9.00	5 . 022345666
11.00	6 . 11225667789
12.00	7 . 022233466899
3.00	8 . 126
2.00	9 . 09
1.00	10 . 4

Stem width: .10
Each leaf: 1 case(s)

Appendix O: Normal Q-Q Plot Training in ADHD/Special Education

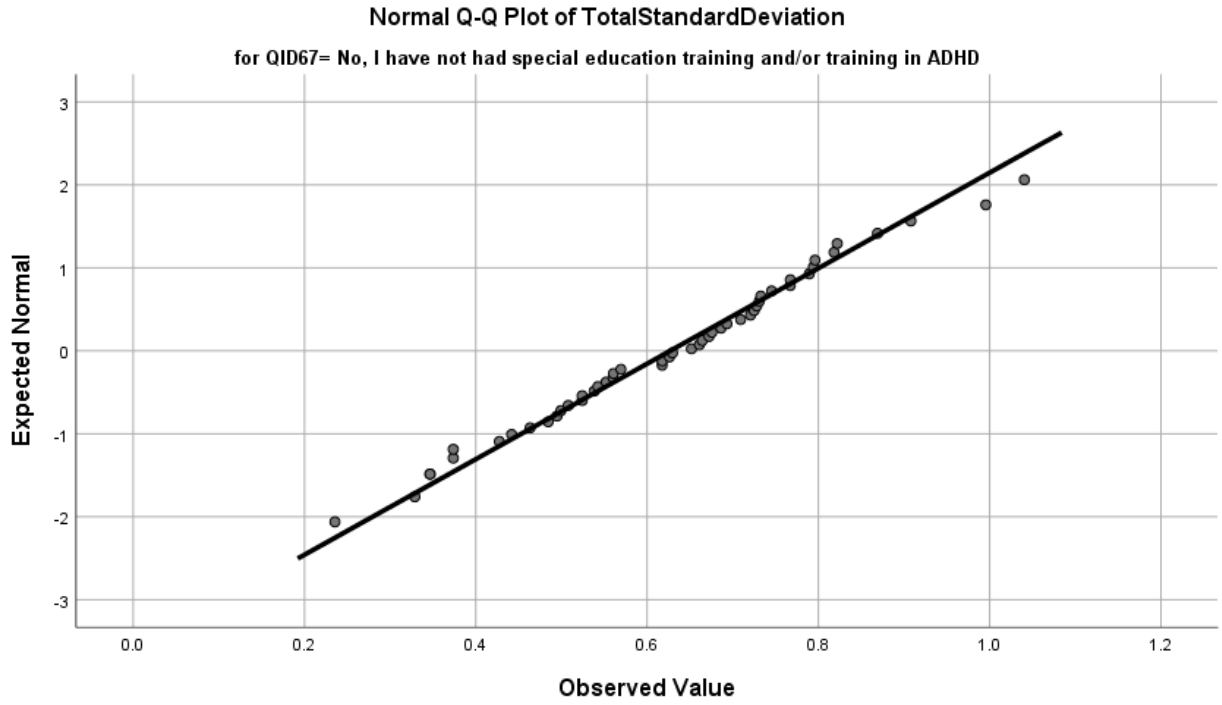

Figure 7. Normal Q-Q plot training in ADHD/special education license.

Appendix P: Detrended Normal Q-Q Plot: Special Training in ADHD/Special Education

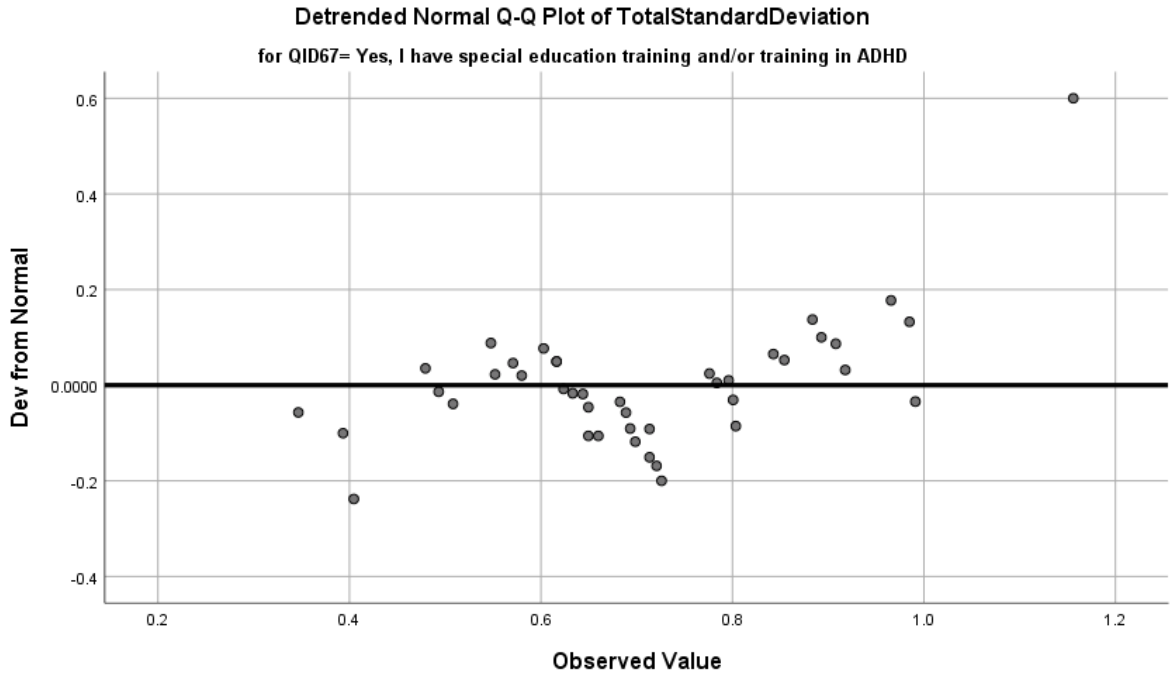

Figure 8. Detrended normal Q-Q plot: Special education.

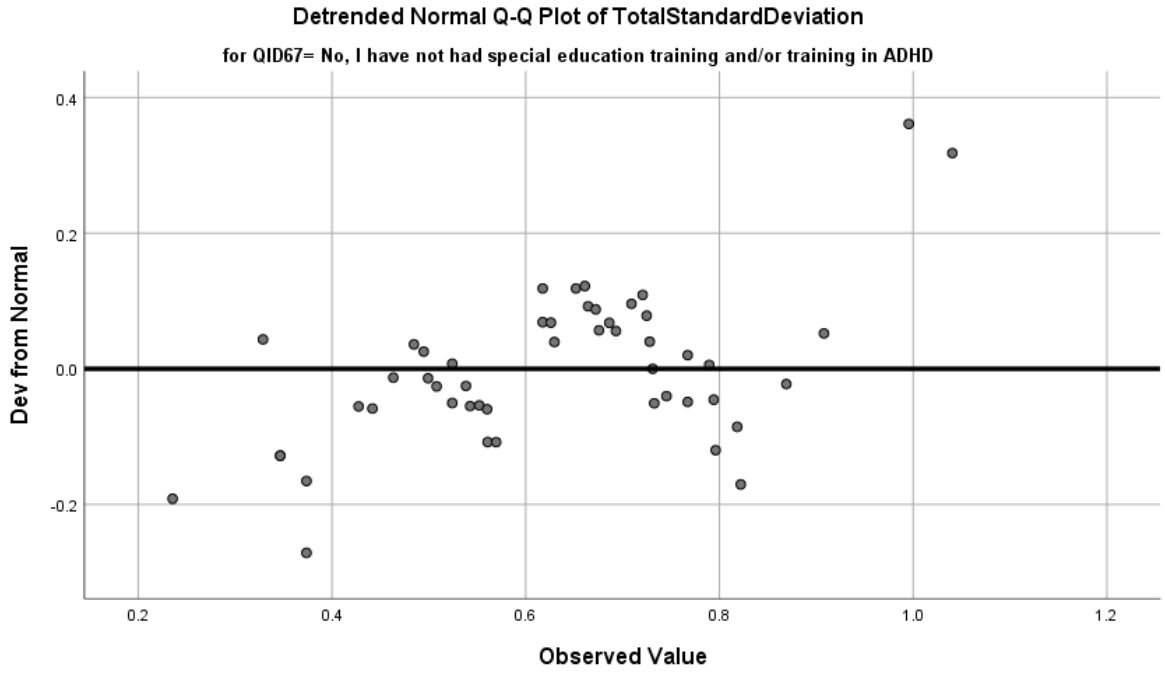

Figure 9. Detrended normal Q-Q plot: No special education/training in ADHD.

Appendix Q: Box Plots: Special Training in ADHD/Special Education

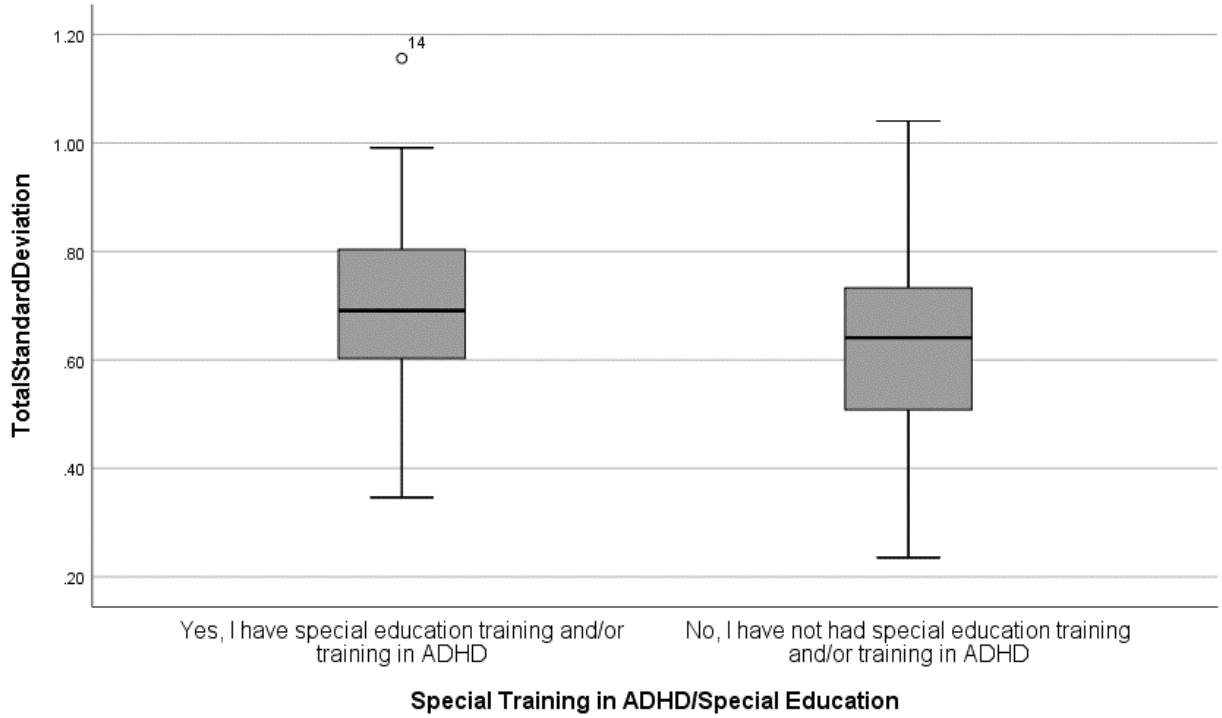

Figure 10. Box plots: Special training in ADHD/special education license.

Appendix R: Instrument Questions

Instrument Questions

Instrument Question	*N*	*M*	*SD*
Which academic discipline area do you teach in?	81	2.40	1.32
Academic Discipline	81	1.59	.49
Special Training in ADHD/Special Education	81	1.51	.50
Special Training in ADHD/Special Education	81	1.52	.503
Adults with ADHD are bad parents and have problems with raising children.	81	3.65	.504
I would mind if my investment advisor had ADHD.	81	3.19	.808
Many adults with ADHD simulate the symptoms.	81	3.05	.740
Adults with ADHD misuse their medication (sell it to others, take too much . . .) .	81	3.25	.537
ADHD is invented by drug companies to make a profit.	81	3.52	.635
People's attitudes about ADHD make persons with ADHD feel worse about themselves.	81	1.98	.741
Many adults with ADHD exaggerate their symptoms in order to be medicated.	81	3.19	.635
Adults with ADHD are of lower social status.	81	3.56	.592
ADHD is a childhood disorder and not seen in adults.	81	3.65	.616
Adults with ADHD lie more often than adults without ADHD.	81	3.44	.632
Adults with ADHD have a lower IQ than adults without ADHD.	81	3.67	.570
Adults with ADHD are more often involved in traffic errors.	81	3.00	.652
As a rule, adults with ADHD feel that telling others that they have ADHD was a mistake.	81	2.49	.673
Adults with ADHD care less about other's problems.	81	3.47	.550
ADHD is caused by bad parenting.	81	3.72	.553
I could tell when a person around me has ADHD.	81	2.65	.777
Adults with ADHD act without thinking.	81	2.91	.711
Adults with ADHD have a different sense of humor than adults without ADHD.	81	3.01	.642
Adults with ADHD have a lower self-esteem than adults without ADHD.	81	2.72	.693
Extensive exposure to video games and TV shows can cause ADHD.	81	3.15	.691
Adults with ADHD do not engage enough in sports.	81	3.22	.725

Adults with ADHD feel excluded from society.	81	2.70	.601
You cannot rely on adults with ADHD.	81	3.44	.671
If I had a business, I would not hire a person with an ADHD diagnosis.	81	3.49	.635
Adults with ADHD are self-focused and egoistic.	81	3.28	.575
I would mind if the teacher of my children had ADHD.	81	3.30	.749
Many adults pretend to have ADHD just to get access to medication.	81	3.23	.729
Adults with ADHD are less able to give advice.	81	3.53	.526
Adults with ADHD are less successful than adults without ADHD.	81	3.31	.645
ADHD is a consequence of childhood trauma.	81	3.47	.634
Under medication, adults with ADHD are less trust worthy.	81	3.54	.653
Adults with ADHD cannot deal with money.	81	3.43	.569
I would go on a date with someone with ADHD.	81	3.2469	.73
Adults with ADHD have no problems in making friends.	81	2.3827	.73
Adults with ADHD are able to lead a group of people.	81	3.5062	.59
Adults with ADHD are able to take care of a group of children in kindergarten.	81	3.3580	.61
I would not mind if a doctor who has ADHD treated me.	81	3.1235	.67

Appendix S: Rotated Factor Analysis

Table 5.

Rotation Method: Varimax with Kaiser Normalization.

	Factor		
	1	2	3
I would mind if the teacher of my children had ADHD.	.762		
Adults with ADHD are less able to give advice.	.734		
If I had a business, I would not hire a person with an ADHD diagnosis.	.695		
Adults with ADHD are able to take care of a group of children In kindergarten.	.672		
Adults with ADHD are able to lead a group of people.	.670		
Adults with ADHD cannot deal with money.	.603		
I would go on a date with someone with ADHD.	.580		
Adults with ADHD are self-focused and egoistic.	.579		
ADHD is caused by bad parenting.	.578		
Adults with ADHD are less successful than adults without ADHD.	.575		.412
Adults with ADHD are bad parents and have problems with raising children.	.568		
Adults with ADHD have a lower IQ than adults without ADHD.	.541		
I would not mind if a doctor who has ADHD treated me.	.533		
I would mind if my investment advisor had ADHD.	.502		
ADHD is a consequence of childhood trauma.	.493		
You cannot rely on adults with ADHD.	.478		
Adults with ADHD are of lower social status.	.468		
Under medication, adults with ADHD are less trustworthy.	.434		
Adults with ADHD care less about other's problems.	.433		
ADHD is a childhood disorder and not seen in adults.	.425		
ADHD is invented by drug companies to make a profit.	.401		
Many adults with ADHD simulate the symptoms.		.633	
Adults with ADHD act without thinking.		.586	
Adults with ADHD are more often involved in traffic errors.		.548	
Adults with ADHD misuse their medication (sell it to others, take too much . . .) .		.535	
Many adults pretend to have ADHD just to get access to medication.		.521	

Many adults with ADHD exaggerate their symptoms in order to be medicated.	.441	
Adults with ADHD have a different sense of humor than adults without ADHD.	.430	
Extensive exposure to video games and TV shows can cause ADHD.	.406	
Adults with ADHD lie more often than adults without ADHD.		
I could tell when a person around me has ADHD.		
Adults with ADHD do not engage enough in sports.		
Adults with ADHD feel excluded from society.		.639
As a rule, adults with ADHD feel that telling others that they have ADHD was a mistake.		.589
Adults with ADHD have a lower self-esteem than adults without ADHD.		.514
People's attitudes about ADHD make persons with ADHD feel worse about themselves.		.484
Adults with ADHD have no problems in making friends.		.422

Appendix T: Rotated Component Matrix

	1	2	3	4	5	6	7	8	9
I would not mind if a doctor who has ADHD treated me.	.727		.188	.141			.138	-.129	.280
I would mind if the teacher of my children had ADHD.	.717	.230	.256	.249			.183		
I would go on a date with someone with ADHD.	.664	.194			-.119		-.112		-.188
If I had a business, I would not hire a person with an ADHD diagnosis.	.601		.234		.218			.364	
Adults with ADHD are able to take care of a group of children in kindergarten.	.577	.102		.303		.224		.302	
Many adults with ADHD exaggerate their symptoms in order to be medicated.	-.131	.769		.297	.157	-.133	.205		
ADHD is invented by drug companies to make a profit.	.333	.725	.101		-.176		.109		-.201
Adults with ADHD misuse their medication (sell it to others, take too much . . .) .	.118	.693	.296		.136	.170	.137		.117
Many adults pretend to have ADHD just to get access to medication.	.157	.649	-.138	.203	-.136	.163			.472
Extensive exposure to video games and TV shows can cause ADHD.	.182	.439	.141	.120		.372		.254	
Adults with ADHD are self-focused and egoistic.	.354	.368	.285	.358		.287	-.207	.110	
Adults with ADHD have a lower IQ than adults without ADHD.	.216		.826	.172			.127	.134	
Adults with ADHD are of lower social status.	.165		.767	.281			.172		
ADHD is a childhood disorder and not seen in adults.	.169	.147	.758						
Adults with ADHD are bad parents and have problems with raising children.	.205	.219	.256	.680			.130	.220	-.126
Adults with ADHD care less about other’s problems.	.267	.158		.598					.146

Adults with ADHD are able to lead a group of people.	.573			.594			.146	.176	.154
Adults with ADHD lie more often than adults without ADHD.		.159	.448	.589		.177	.116		
Adults with ADHD cannot deal with money.	.310	.188	.208	.472	.198	.222		.264	
Adults with ADHD have a lower self-esteem than adults without ADHD.					.855				
Adults with ADHD feel excluded from society.					.696		.360	.157	
People's attitudes about ADHD make persons with ADHD feel worse about themselves.				.187	.674		-.110	-.247	.256
Adults with ADHD are less successful than adults without ADHD.	.488		.197		.512			.228	
You cannot rely on adults with ADHD.	.370			.296	.416		.316	.169	-.127
Adults with ADHD have a different sense of humor than adults without ADHD.				.104		.790	.115	.229	
Adults with ADHD are more often involved in traffic errors.	.265		.268	.165	.117	.642	.250	-.222	.217
Adults with ADHD act without thinking.	.122	.196			.156	.586	.549		-.120
I could tell when a person around me has ADHD.	-.181		-.275	.427	.153	.494	.284		.156
Adults with ADHD do not engage enough in sports.	.365	.441			.109	.485	-.134		
Many adults with ADHD simulate the symptoms.		.201	.236	.170	-.164	.223	.661		.328
As a rule, adults with ADHD feel that telling others that they have ADHD was a mistake.					.323	.137	.629	-.382	.153
I would mind if my investment advisor had ADHD.	.534		.134	.216		.120	.606	.150	
ADHD is a consequence of childhood trauma.	.147			.266	.103	.112		.747	

Adults with ADHD are less able to give advice.	.529	.225	.141	.227			.535	.139
ADHD is caused by bad parenting.	.363	.412			.203	-.264	.446	-.254
Under medication, adults with ADHD are less trustworthy.	.282	.141	.335	-.202	.131	.190	.443	.131
Adults with ADHD have no problems in making friends.			.110	.284		.219		.723

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 9 iterations.

Appendix U: Scree Plots

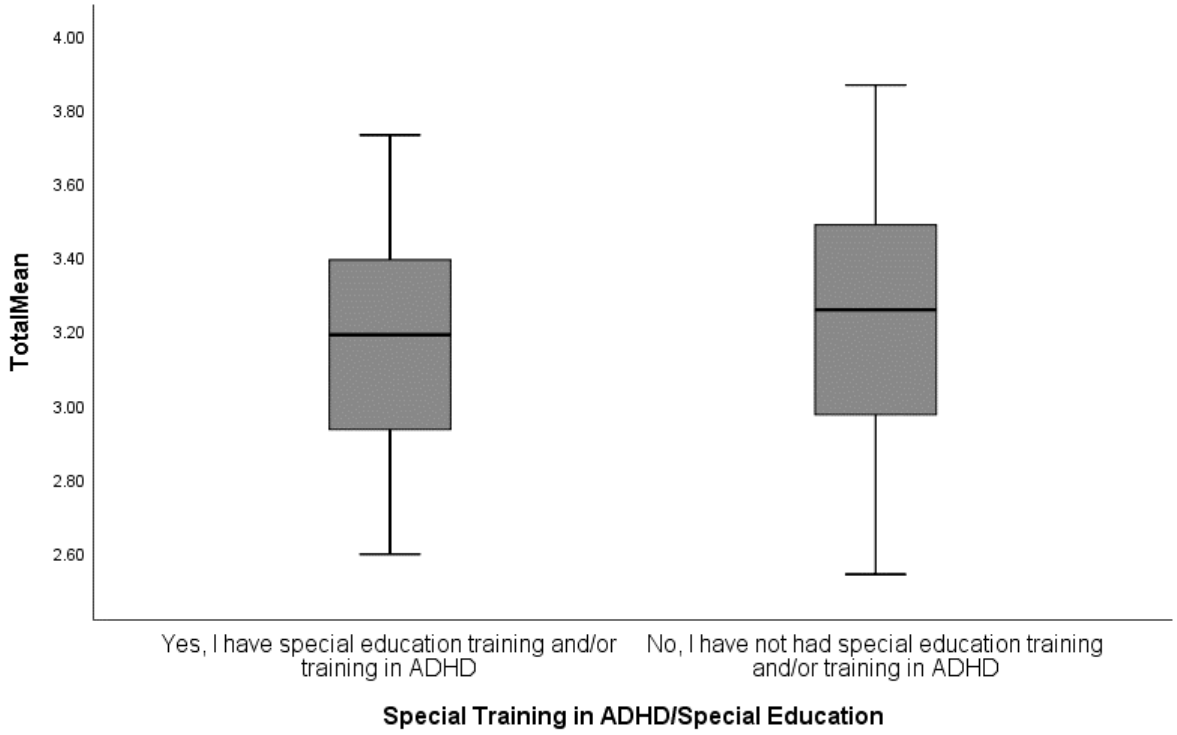

Figure 11. Normal Q-Q box plots ADHD training/Special education certification.

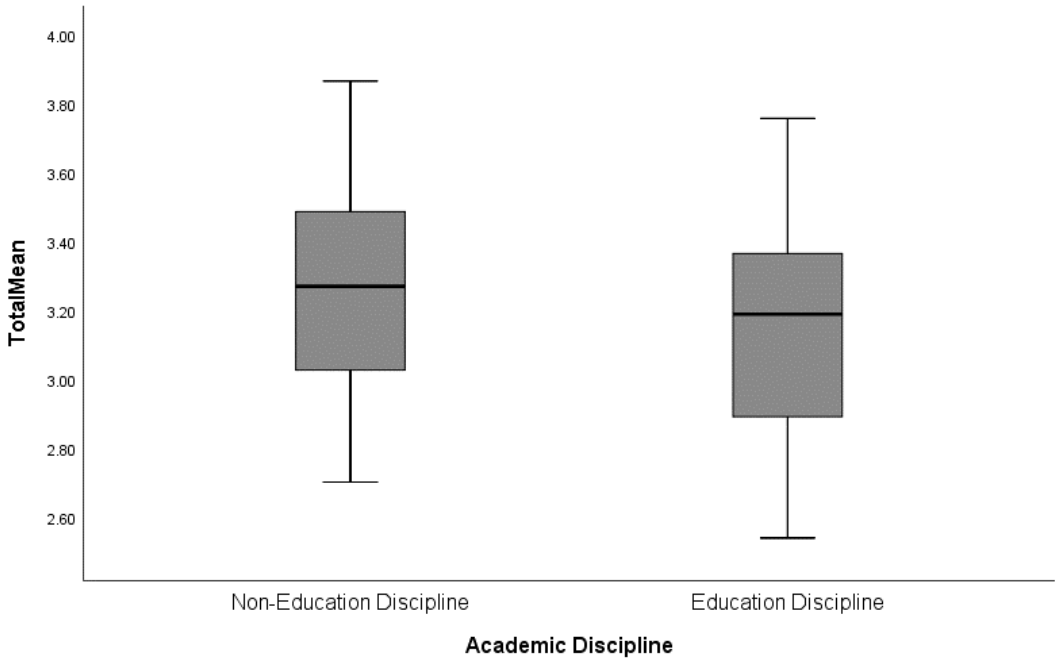

Figure 12. Normal Q-Q box plots academic disciplines.

Appendix V: Normal Q-Q Plots

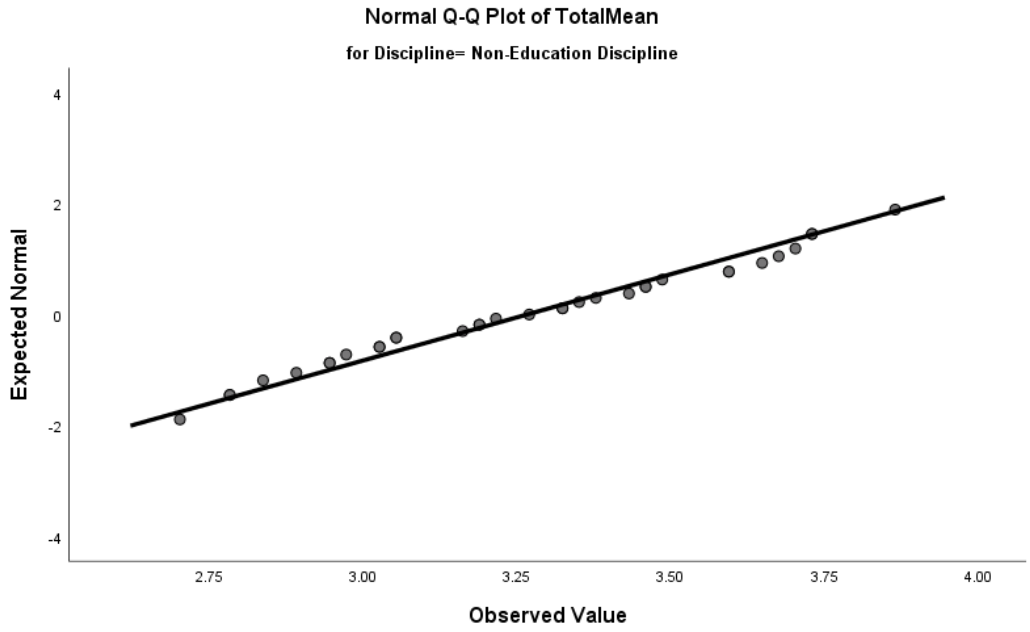

Figure 13. Normal Q-Q plots academic disciplines; Non-education

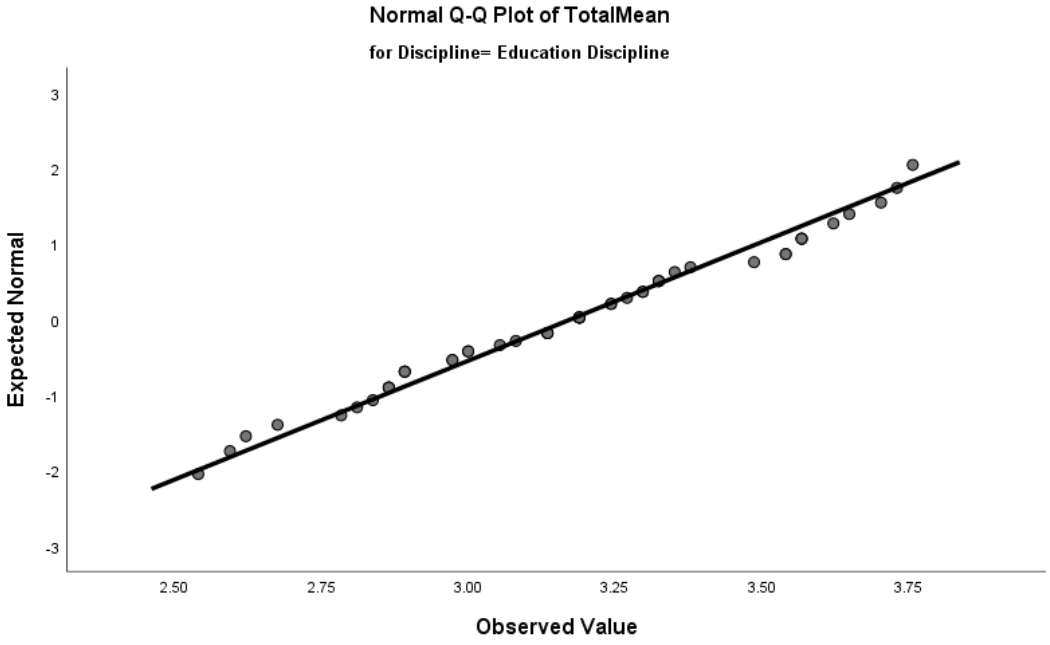

Figure 14. Normal Q-Q plots ADHD training/special education certification; education.

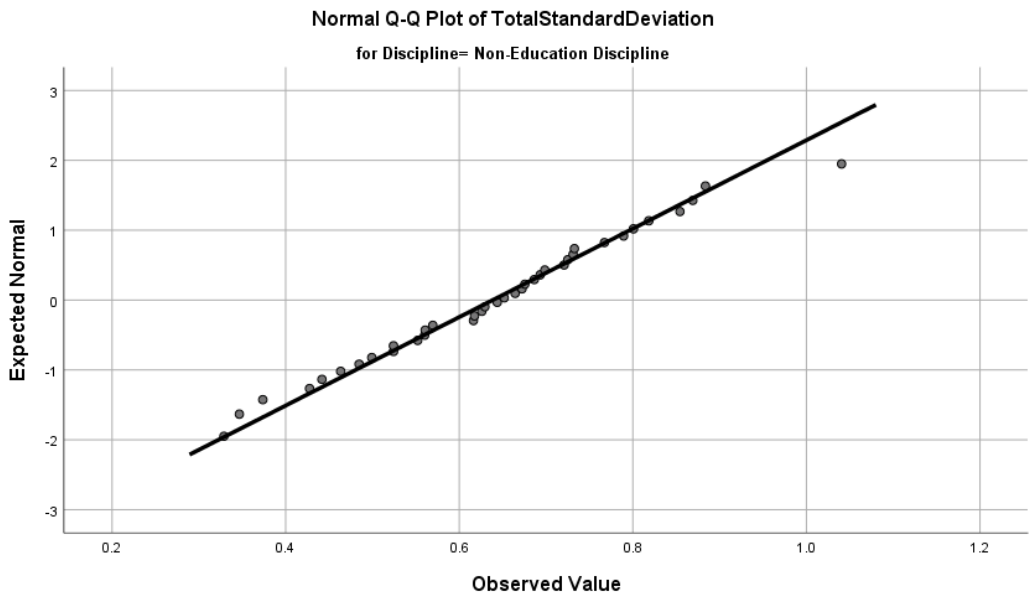

Figure 15. Normal Q-Q Plots undertaken coursework in ADHD / special education license.

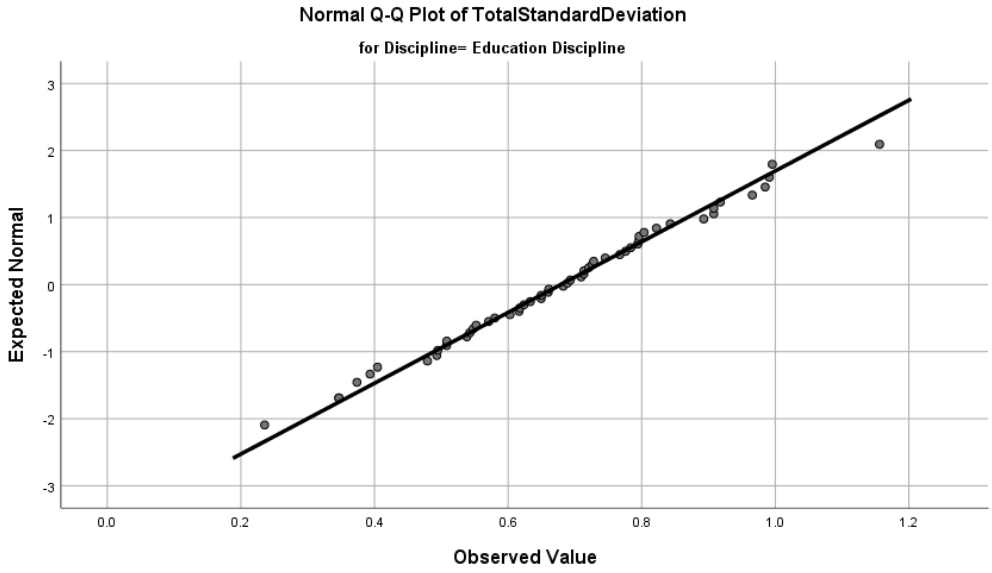

Figure 16. Normal Q-Q plots not undertaken coursework in ADHD/special education.

Appendix W:Statement of Original Work

The Concordia University Doctorate of Education Program is a collaborative community of scholar-practitioners, who seek to transform society by pursuing ethically-informed, rigorously-researched, inquiry-based projects that benefit professional, institutional, and local educational contexts. Each member of the community affirms throughout their program of study, adherence to the principles and standards outlined in the Concordia University Academic Integrity Policy. This policy states the following:

Statement of academic integrity.

> As a member of the Concordia University community, I will neither engage in fraudulent or unauthorized behaviors in the presentation and completion of my work, nor will I provide unauthorized assistance to others.

Explanations:

> **What does "fraudulent" mean?**
>
> "Fraudulent" work is any material submitted for evaluation that is falsely or improperly presented as one's own. This includes, but is not limited to texts, graphics and other multi-media files appropriated from any source, including another individual, that are intentionally presented as all or part of a candidate's final work without full and complete documentation.
>
> **What is "unauthorized" assistance? "**
>
> Unauthorized assistance" refers to any support candidates solicit in the completion of their work, that has not been either explicitly specified as appropriate by the instructor, or any assistance that is understood in the class context as inappropriate. This can include, but is not limited to:
>
> - Use of unauthorized notes or another's work during an online test
> - Use of unauthorized notes or personal assistance in an online exam setting
> - Inappropriate collaboration in preparation and/or completion of a project
> - Unauthorized solicitation of professional resources for the completion of the work.

Statement of Original Work (Continued)

I attest that:

1. I have read, understood, and complied with all aspects of the Concordia University–Portland Academic Integrity Policy during the development and writing of this dissertation.

2. Where information and/or materials from outside sources has been used in the production of this dissertation, all information and/or materials from outside sources has been properly referenced and all permissions required for use of the information and/or materials have been obtained, in accordance with research standards outlined in the *Publication Manual of The American Psychological Association.*

Alexandria Marie Vassallo

Digital Signature

Alexandria Marie Vassallo
Name

May 22 2020
Date