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Assessment and Intervention Practices for Attention Deficit Hyperactivity Disorder (ADHD): A National Survey of School Psychologists

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ASSESSMENT AND INTERVENTION PRACTICES FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD): A NATIONAL SURVEY OF SCHOOL PSYCHOLOGISTS

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This study examined school psychologists' assessment and intervention practices regarding ADHD. Five hundred school psychologists who practiced in a school setting and were regular members of the National Association of School Psychologists were randomly selected to complete and return a questionnaire titled Assessment and Intervention Practices for ADHD: A National Survey of School Psychologists. The instrument, which collected data on demographics, assessment practices, diagnostic practices, and intervention practices, was developed by the author for the purpose of this study. Data were analyzed using descriptive statistics, Pearson *r* and Spearman *rho* correlation coefficients, binary logistic regression, and Mann-Whitney *U* tests.

With a return rate of 49.2%, the main finding of this study was that the majority of school psychologists are conducting assessments and providing interventions for ADHD. Results showed that 77.2% of the respondents conduct ADHD assessments and 90.7% provide ADHD interventions, but only 26.8% reported

that they provide an ADHD diagnosis. The majority of respondents indicated that they are well-trained, qualified, and confident within ADHD assessment, diagnostic, and intervention practices.

The most notable correlations were between level of education, licensure, and indication of providing a diagnosis of ADHD. A relationship existed between years of experience and beliefs about being well-trained to assess for ADHD and to provide ADHD interventions. Results showed that licensure was a significant predictor in determining if school psychologists were more likely to conduct assessments for ADHD. Level of education, SES, national certification, and beliefs about being qualified to diagnose ADHD were significant in differentiating whether or not school psychologists were more likely to provide a diagnosis of ADHD when warranted. State certification and beliefs about being qualified to assess for ADHD to determine if the disorder exists were significant in differentiating whether or not school psychologists were more likely to provide interventions for ADHD. Significant differences were found for level of education, licensure, confidence to assess and diagnose ADHD, and qualifications to diagnose ADHD and assess for ADHD to determine services and if the disorder exists between the groups of school psychologists who provide and do not provide an ADHD diagnosis.

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I would like to begin by thanking Dr. Edward Levinson, my committee chair, for his continual support and advice. He has been a longtime mentor and has provided sage advice for my career and with my dissertation project. He graciously agreed to continue to be my committee chair after his retirement from the Department of School Psychology. I want to wish him an enjoyable and fruitful retirement. I would also like to thank each of my committee members, Dr. Barker, Dr. Damiani, and Dr. Kovaleski, for their assistance and dedication throughout my dissertation project. I am thankful for their feedback and direction. The final product is a result of their honest critique throughout the process.

Taking on such an endeavor did not seem like such a daunting task early in my career and life. It was not until becoming a husband and father that my struggle with time divided me. I believe that the most important gift a man can give to his son and his family is the gift of time. Rather than taking time away from my family, I chose to complete the vast majority of my dissertation at night when most normal people are sleeping. Even though I lost many hours of sleep and probably have aged considerably more than normal, I was able to make many lasting memories with my family during waking hours. It was difficult dedicating such a huge chunk of time and effort to

such a project. There were days when I did not know if I was going to be able to complete my dissertation. At times, the project became overwhelming. There were days when I did not have the time or energy to work on my dissertation, but I tried to achieve even the simplest task to keep moving forward. In the end, I somehow found the determination needed to finish this project.

I want to thank my family for giving me the motivation to finish and their loving support. My wife, Amy, provided all of the love and support a man could ever need. The truth be told, I probably would never have finished my doctorate if it was not for her motivation. My son, Ethan, was my favorite distraction from my dissertation. We spent so much time together during the years it took me to complete my dissertation. Even though my dissertation took me way longer than it should have, I would not have traded being such a big part of the early years of Ethan's life for anything. I would like to thank and remember my dog, Emily. Unfortunately, she passed away during the completion of my dissertation. She was a great dog and friend.

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CHAPTER I

INTRODUCTION

At a meeting with several school psychologists in Northeastern Pennsylvania, the issue was raised regarding the role of the school psychologist in evaluating attention deficit hyperactivity disorder (ADHD). One school psychologist stated that he evaluates and participates in interventions for ADHD. Another school psychologist mentioned that it was a medical diagnosis and school psychologists should not and cannot evaluate for ADHD. Another school psychologist believed school psychologists can evaluate and provide interventions for ADHD, but she personally did not feel competent enough to do this. This occasion exemplifies the ambiguity and difference of opinion found in the field of school psychology with regard to ADHD assessment and intervention.

Practicing school psychologists commonly encounter differing beliefs as to whether a school psychologist can evaluate for ADHD and as to whether a school psychologist can identify or diagnose a student with ADHD as part of their school's evaluation team. The different beliefs may come from parents, school psychologists, or other professionals. Some believe that a school psychologist can actually evaluate, identify, or diagnose ADHD, while others believe it is beyond the role of the school psychologist. There are also varying

degrees of participation of school psychologists in intervention activities. It can become confusing when there does not seem to be an agreement on the topic. The following information details the various parts of the study including the statement of the problem, research questions, hypotheses, relevance of the study, definition of terms, assumptions, and limitations.

Statement of the Problem

The purpose of this study is to examine variables related to the assessment and intervention practices of school psychologists regarding ADHD. This study attempts to add to the limited body of research investigating those specific practices and help reduce the ambiguity that is currently associated with those practices.

Previous studies have examined the assessment practices of school psychologists, but they have not analyzed ADHD assessment specifically (Goh, Teslow, & Fuller, 1981; Hutton, Dubes, & Muir, 1992; Wilson & Reschly, 1996). Some studies have investigated school psychologists' practices regarding ADHD, but no studies have surveyed both assessment and intervention practices in detail (Cushman, LeBlanc, & Porter, 2004; Demaray, Schaefer, & Delong, 2003; Koonce, 2007; Miller, 2005; Moore, DuPaul, & Power, 2005; Smith, 1999). There have been studies that included school psychologists as part of the sample along with various other professionals (Chang, 2001; Handler, 2000;

Hennigen, 1997; Rosenberg & Beck, 1986; Ullman & Doherty, 1984). Those studies are not specific enough to examine the role of the school psychologist. Therefore, there seems to be a need to define the role of the school psychologist in assessing and intervening for ADHD.

School psychologists are frequently involved with children with ADHD especially since the estimated prevalence of ADHD is between 3%-7% in school-age children according to the DSM-IV-TR (American Psychiatric Association, 2000). Children with ADHD spend a great deal of time in a school setting where the structured environment provides many taxing requirements of a child with ADHD. Children with ADHD exhibit symptoms and impairments that need to be addressed in the school setting (DuPaul & Stoner, 1994; Power, Atkins, Osborne, & Blum, 1994). In addition, provisions established under the Education of All Handicapped Children Act of 1975 and Section 504 of the Rehabilitation Act of 1973 create implications for school psychologists regarding their responsibilities in assessing and intervening for a child with or suspected of having ADHD (Ahearn, Gloeckler, & Walton, 1993; Davila, Williams, & MacDonald, 1991).

Because of the likelihood of a school psychologist's involvement in assessing and intervening with ADHD due to prevalence, mandates, and the importance of such involvement, this study examines specific assessment and intervention practices for ADHD.

There is no single test that can detect the existence of ADHD (Greenhill, 1998). No standard battery of assessments has been endorsed as a gold standard in assessment of ADHD (Barkley, 1998; Fowler, 1992). ADHD evaluations should include several methods of data collection using various sources of information within multiple settings (Hoff, Doepke, & Landau, 2002; Pelham, Fabiano, & Massetti, 2005; Tobin, Schneider, Reck, & Landau, 2008). ADHD assessment ends up being a complex process that needs to be comprehensive in evaluating the primary symptoms of ADHD, associated symptoms of ADHD, and comorbidity of other psychiatric disorders (American Psychiatric Association, 2000; Barkley, 1998, 2006).

Children with ADHD frequently experience academic and social difficulties in school that create numerous referrals to school psychologists. School psychologists are in an ideal position to gather information and data to help in the assessment and intervention of children with ADHD (Power et al., 1994). The Education of All Handicapped Children Act of 1975 and Section 504 of the Rehabilitation Act of 1973 create

responsibilities for public schools in assessing children with or are suspected of having ADHD. As a result, school psychologists are frequently involved in the assessment of ADHD. This study examines the various ADHD assessment practices of school psychologists as part of the process of assessing for the primary symptoms of ADHD, associated symptoms of ADHD, and comorbid psychiatric disorders. It is important to survey the assessment practices in order to verify the assessments children with ADHD are receiving.

Children with ADHD are required to learn, follow rules, interact appropriately with others, participate in instructional activities, minimize distractions, and refrain from disturbing others while in school. The symptoms and impairments of ADHD need to be addressed in the school environment (DuPaul & Stoner, 1994). School psychologists have access to and are in the ideal position to help create, provide, and monitor interventions (Power et al., 1994). This study examines a wide variety of intervention practices that school psychologists are using for ADHD within the school. It is important to understand their intervention practices in order to ensure that the needs of children with ADHD are being met.

Research Questions and Hypotheses

Based on the existing ADHD literature, the following research questions and hypotheses were generated:

Research Question 1: What percentage of school psychologists surveyed conduct assessments for ADHD, provide a diagnosis of ADHD, refer to an outside professional for an ADHD assessment, provide interventions for ADHD, and refer to an outside professional for interventions with ADHD?

Hypothesis: It was hypothesized that the majority of school psychologists surveyed would report conducting some form of ADHD assessments. Previous results indicated that 92% of school psychologists routinely conduct some form of ADHD assessments (Miller, 2005). In Demaray et al. (2003), all of the school psychologists surveyed reported doing some form of assessment for ADHD. However, over half of those surveyed also referred to an outside professional for additional assessment. According to Smith (1999), 57% of school psychologists surveyed reported that they did some form of assessment.

It was hypothesized that the minority of school psychologists surveyed would report providing a diagnosis of ADHD. In 1999, Smith's study found that 57% of school psychologists surveyed noted that they performed some form of assessment for ADHD, but made a referral to a physician for a

diagnosis. Only 8% of the school psychologists surveyed indicated that they were qualified to diagnose ADHD. In a more recent study, a significant number of school psychologists reported they do not believe school psychologists are qualified to diagnose ADHD and only 30% actually do diagnose ADHD (Demaray et al., 2003).

Determining the percentage of school psychologists surveyed that provide interventions for ADHD was an exploratory question with no hypothesis. The only study that surveyed some form of ADHD intervention was Moore et al. (2005). In that study, the majority of school psychologists surveyed believed that medication monitoring for effects on ADHD was an appropriate professional activity. However, only 54.5% of the school psychologists surveyed were actually monitoring the effects of the medication.

Determining the percentage of school psychologists surveyed that refer to an outside professional for an ADHD assessment was an exploratory question with no hypothesis. Determining the percentage of school psychologists surveyed that refer to an outside professional for interventions with ADHD was an exploratory question with no hypothesis.

Research Question 2: How frequently are the school psychologists surveyed assessing for ADHD and what percentage of their caseload is comprised of ADHD assessments?

Hypothesis: This was an exploratory question with no hypothesis. Only one study reported an average of 17 referrals per year for ADHD (Demaray et al., 2003).

Research Question 3: How frequently are the school psychologists surveyed providing interventions for ADHD and what percentage of their caseload is comprised of providing interventions for ADHD?

Hypothesis: This was an exploratory question with no hypothesis.

Research Question 4: What is the level of agreement that the school psychologists surveyed indicate for statements regarding their qualifications in assessing for ADHD, diagnosing ADHD, and providing interventions for ADHD?

Hypothesis: It was hypothesized that the majority of the school psychologists surveyed would report being qualified to assess for ADHD, but significantly less would report being qualified to diagnose ADHD. Previous results indicated 92% school psychologists routinely conduct some form of ADHD assessments (Miller, 2005). In Demaray et al. (2003), all of the school psychologists surveyed reported doing some form of assessment for ADHD. However, over half of those surveyed also referred to an outside professional for additional assessment. According to Smith (1999), 57% of school psychologists surveyed noted that they did some form of assessment for ADHD, but only

made a referral to a physician for a diagnosis. Only 8% of the school psychologists surveyed affirmed that they were qualified to diagnose ADHD. In a more recent study, a significant number of school psychologists reported they do not believe school psychologists are qualified to diagnose ADHD and only 30% actually do diagnose ADHD (Demaray et al., 2003). Determining how often the school psychologists surveyed indicate they are qualified to provide interventions for ADHD was an exploratory question with no hypothesis.

Research Question 5: What is the level of confidence of the school psychologists surveyed regarding their ability to assess, to diagnose, and to provide interventions for ADHD?

Hypothesis: It was hypothesized that the school psychologists surveyed would be confident in their ability to assess for ADHD, but less confident in their ability to diagnose ADHD. Further, it was hypothesized that the school psychologists surveyed would be confident in their ability to provide interventions for ADHD. In a study by Smith (1999), school psychologists rated their overall confidence regarding assessment and intervention practices for ADHD to be within the somewhat confident to very confident range.

Research Question 6: When assessing for ADHD, how frequently do the school psychologists surveyed administer the various chosen assessment instruments?

Hypothesis: Because this study goes into greater detail regarding the various and specific assessment instruments used, this was an exploratory question with no hypothesis. Previous studies suggest that school psychologists are using multiple sources, methods, and settings in order to assess for ADHD (Demaray et al., 2003; Koonce, 2007). According to Koonce, school psychologists used interviews, observations, rating scales, psychological testing, educational testing, visual-motor testing, neuropsychological testing, and projective methods in assessment of ADHD. More specifically, 65% of school psychologists surveyed by Koonce maintained that certain tests were used more often such as a Wechsler Intelligence Scale for Children, Behavior Assessment System for Children, Conners Rating Scales, and Woodcock-Johnson Tests of Achievement (Miller, 2005). In another study, rating scales, interviews, and observations were shown as being most frequently used by school psychologists with 73% using some form of intelligence testing, 67% using some form of achievement testing, and 30% using some form of projective assessment (Demaray et al.). Finally, one study reported that the majority of school psychologists surveyed indicated that they were likely to do an interview.

Twenty five percent of those school psychologists also noted that they would use an intelligence test and slightly greater than a quarter reported some form of achievement test use (Smith, 1999).

Research Question 7: When providing interventions for ADHD, how frequently do the school psychologists surveyed provide the various identified interventions for ADHD?

Hypothesis: Because this study goes into greater detail regarding the various and specific interventions provided, this was an exploratory question with no hypothesis. In 1999, Smith found that 80% of the school psychologists surveyed indicated that medication in general was effective and 93% reported that psychostimulant medication decreases ADHD symptoms. In addition, the most likely interventions provided were consultation with teacher, development of contingency management techniques, monitoring effectiveness of classroom interventions, and referral to physician for medication. The least likely interventions to be offered were facilitating parental support groups, providing parent trainings, and conducting student counseling. Smith's results revealed that only 14% of the school psychologists surveyed considered a Section 504 plan when a student did not qualify for special education services.

Finally, Moore et al. (2005) found that 54.5% of the school psychologists surveyed were actually monitoring the effects of medication.

Research Question 8: What is the level of agreement that the school psychologists surveyed indicate for statements regarding their qualifications in assessing for ADHD to determine if the disorder exists, to determine the need and appropriateness of special education or Section 504 services, and to develop appropriate interventions?

Hypothesis: This was an exploratory question with no hypothesis.

Research Question 9: What are the beliefs of the school psychologists surveyed regarding their training in ADHD assessment and in providing ADHD interventions?

Hypothesis: It was hypothesized that the majority of school psychologists would report being well-trained in assessment and intervention of ADHD. According to Demaray et al. (2003), 88% of the school psychologists surveyed reported being well-trained. This sample reflected doctoral level school psychologists reporting to be better trained than non-doctoral level school psychologists. Of the school psychologists surveyed, the majority believed they were prepared best for consultation specifically and least prepared for intervention in general (Smith, 1999).

One study found that 58.1% of school psychologists surveyed indicated no formal training in monitoring the effects of medication on ADHD (Moore et al., 2005).

Research Question 10: Is there an association between the demographic variables, assessment variables, diagnostic variables, and intervention variables? The demographic variables included the surveyed school psychologists' geographic location, community setting, SES, sex, level of education, years of experience, and credentials. The assessment variables were the surveyed school psychologists' beliefs of being well-trained in ADHD assessments, level of confidence in ability to assess for ADHD, beliefs of being qualified to assess for ADHD in general, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, beliefs of being qualified to assess for ADHD to develop interventions, and indication of conducting ADHD assessments. The diagnostic variables included the surveyed school psychologists' beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, and indication of providing a diagnosis of ADHD.

The intervention variables included the surveyed school psychologists' beliefs of being well-trained in ADHD interventions, beliefs of being qualified to provide ADHD interventions, level of confidence in ability to provide ADHD interventions, and indication of providing ADHD interventions.

Hypothesis: This was an exploratory question with no hypothesis. In Smith (1999), school psychologists' highest degree earned was significantly related to how well the school psychologists rated themselves in providing consultation for ADHD. However, no significant differences were found when surveying school psychologists about conducting ADHD assessments, providing interventions for ADHD, and measuring their level of confidence regarding ADHD when comparing sex, degree, and experience. Koonce (2007) found a possible relationship between the use of ADHD assessments and geographic location. However, 63.4% of the school psychologists surveyed noted that they worked in the northeast region of the United States. That resulted in the oversampling of the region. Due to an over-representative sample, results could not be generalized across the other regions surveyed. Demaray et al. (2003) reported that doctoral level school psychologists were more likely that non-doctoral school psychologists to provide medication monitoring and consultation as an intervention, but no explanation could be concluded.

Research Question 11: Are there certain demographic, assessment, diagnostic, and intervention variables that are associated with the likelihood that the school psychologists surveyed conduct ADHD assessments, diagnose ADHD, and provide ADHD interventions? The demographic variables, assessment variables, diagnostic variables, and intervention variables used in this research question are the same as in research question 10.

Hypothesis: This was an exploratory question with no hypothesis.

Research Question 12: Is there a difference between the school psychologists surveyed who indicate that they conduct ADHD assessments and school psychologists who indicate that they do not conduct ADHD assessments for the variables of geographic location, community setting, SES, sex, level of education, years of experience, credentials, beliefs of being well-trained in ADHD assessments, beliefs of being qualified to conduct ADHD assessments, level of confidence in ability to conduct ADHD assessments, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, beliefs of being qualified to assess for ADHD to develop interventions, beliefs of being qualified to diagnose ADHD, and level of confidence in ability to diagnose ADHD?

Hypothesis: This was an exploratory question with no hypothesis.

Research Question 13: Is there a difference between the school psychologists surveyed who indicate that they provide an ADHD diagnosis and school psychologists who indicate that they do not provide an ADHD diagnosis for the variables of geographic location, community setting, SES, sex, level of education, years of experience, credentials, beliefs of being well-trained in ADHD assessments, beliefs of being qualified to conduct ADHD assessments, level of confidence in ability to conduct ADHD assessments, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, beliefs of being qualified to assess for ADHD to develop interventions, beliefs of being qualified to diagnose ADHD, and level of confidence in ability to diagnose ADHD?

Hypothesis: This was an exploratory question with no hypothesis.

Research Question 14: Is there a difference between the school psychologists surveyed who indicate that they provide interventions for ADHD and school psychologists who indicate that they do not provide interventions for ADHD for the variables of geographic location, community setting, SES, sex, level of education, years of experience, credentials, beliefs of

being well-trained in ADHD assessments, beliefs of being qualified to conduct ADHD assessments, level of confidence in ability to conduct ADHD assessments, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, beliefs of being qualified to assess for ADHD to develop interventions, beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, beliefs of being well-trained in ADHD interventions, beliefs of being qualified to provide ADHD interventions, and level of confidence in providing ADHD interventions?

Hypothesis: This was an exploratory question with no hypothesis.

The variables used to answer the research questions can be viewed as a path diagram in Figure 1.

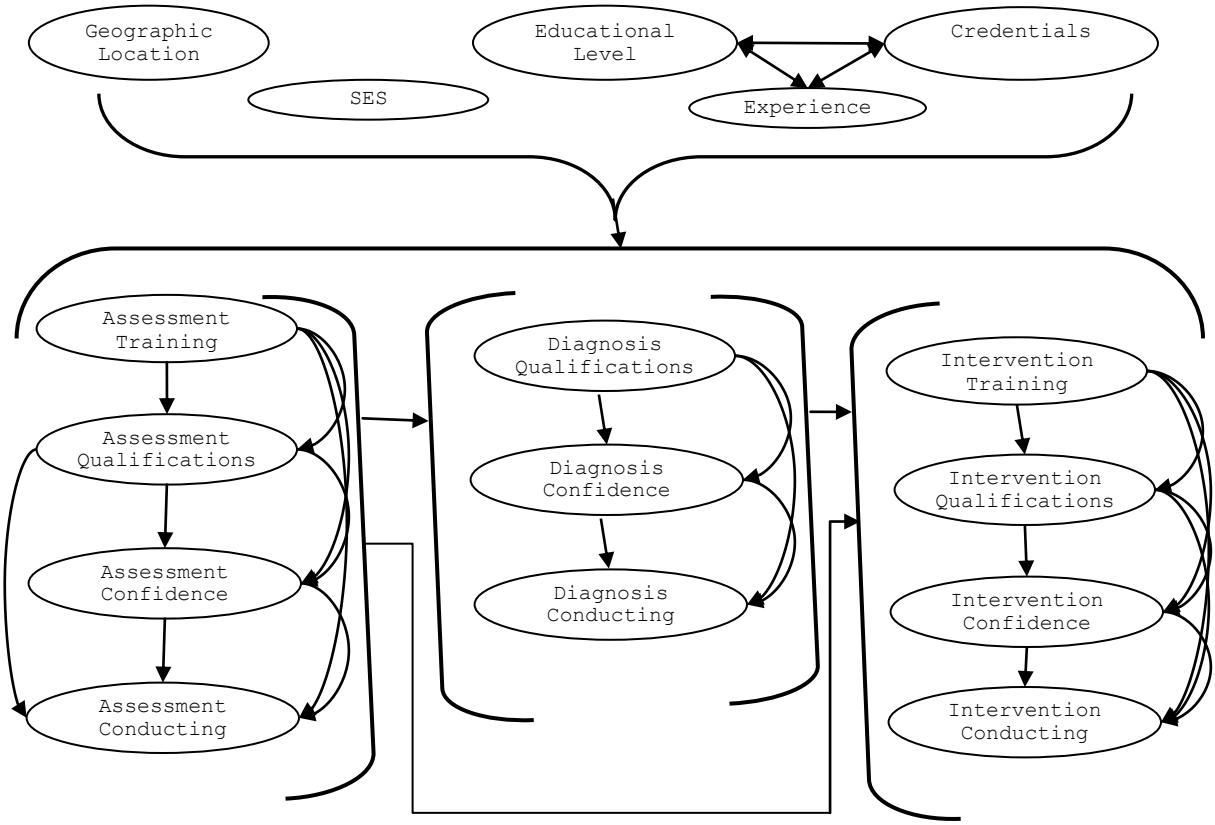

Figure 1. Path diagram of variables.

Relevance of Study

ADHD is one of the most challenging behavioral problems for practitioners and teachers (Koonce, 2007). Estimates of its prevalence among school-aged children range from 3% to 7% (American Psychiatric Association, 2000; Barkley, 1998). Children with ADHD often experience academic and social difficulties in school (DuPaul & Stoner, 1994; Power et al., 1994). ADHD is one of the most common referrals to school psychologists and mental health clinics (Barkley, 1998; Brown,

2002; Cotugno, 1993; DuPaul & Stoner, 1994; Power et al., 1994). With frequent referrals, school psychologists are in an ideal position to be actively involved in the assessment and intervention of ADHD (Power et al., 1994). Because school psychologists are expected to assess and treat children with ADHD, it is important to survey their assessment and intervention practices (Reid, Reason, Maag, Prosser, & Xu, 1998). ADHD is a commonly found problem within the school environment. With such a significant concern occurring in schools, it is important for school psychologists to have role clarity in the area of assessment and intervention for ADHD.

Although many authorities have identified recommended practices in the assessment and intervention of ADHD (American Academy of Child and Adolescent Psychiatry, 1997; American Academy of Pediatrics, 2000; Atkins & Pelham, 1991; Barkley, 1998; Barkley, 2006; DuPaul & Stoner, 2003; DuPaul, Stoner, & O'Reilly, 2002; DuPaul, Stoner, & O'Reilly, 2008; Hoff, Doepke, & Landau, 2002; Pelham, Fabiano, & Massetti, 2005; Power & Mautone, 2008; Tobin, Schneider, Reck, & Landau, 2008), a review of the literature revealed that research of the specific assessment and intervention practices of school psychologists for ADHD is needed. In 1998, Reid et al. found only a few studies that examined actual practices for ADHD in the schools and Barkley (1998) found limited survey research investigating

the actual practices of psychologists and their methods used with ADHD. There were studies that have analyzed the assessment practices of school psychologists, but they provided limited information regarding assessment practices specifically devoted to ADHD (Goh et al., 1981; Hutton et al., 1992; Wilson & Reschly, 1996). There were a few studies based solely on school psychologist practices regarding ADHD (Cushman et al., 2004; Demaray et al., 2003; Koonce, 2007; Miller, 2005; Moore et al., 2005; Smith, 1999). The focus of these studies varied. Some studies surveyed training, assessment practices, knowledge, practices in general, attitudes, and medication monitoring practices. No studies surveyed both the assessment and intervention practices in detail. Few studies included school psychologists as part of the sample along with various other professionals, but these studies were not specific enough and are becoming outdated (Chang, 2001; Handler, 2000; Hennigen, 1997; Rosenberg & Beck, 1986; Ullman & Doherty, 1984).

A parent that suspects their child's school performance or social/emotional functioning is being adversely affected due to ADHD has the right to request a complete evaluation at the public school district's expense (Ahearn et al., 1993; Davila et al., 1991). These responsibilities for public schools are a result of the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA) and Section 504 of the

Rehabilitation Act of 1973. Thus, schools are likely to be involved in issues relating to the assessment of and intervention for ADHD. School psychologists play a role in the assessment and intervention of ADHD in the schools. This study looks to provide some clarity into the practices of school psychologists for ADHD assessments and interventions. This information may lead to improved training practices and preparedness of school psychologists. It may also lead to better assessment and interventions practices that will benefit students with ADHD.

A standard battery of assessments has not been endorsed as a gold standard in order to diagnose and assess for ADHD (Barkley, 1998; Fowler, 1992). The assessment process is further complicated because there is no single test that can detect the existence of ADHD (Greenhill, 1998). Furthermore, no single, specific assessment model for assessing ADHD has been endorsed by professional organizations such as National Association of School Psychologist (NASP), American Psychological Association (APA), American Academy of Child and Adolescent Psychiatry (AACAP), and the American Academy of Pediatrics (AAP) (Koonce, 2007). Therefore, a variety of assessment instruments and interventions were surveyed in this study in order to gain information about more specific practices. Even though many of the assessments that were

surveyed cannot reliably identify ADHD in itself, they are useful in making a differential diagnosis for ADHD and looking for comorbid disorders and associated symptoms and impairments of ADHD (Barkley, 2006; Landau & Burcham, 1995). A variety of interventions were surveyed despite their level of effectiveness. A goal of this study was to identify a wide variety of assessment and intervention practices.

Definition of Terms

Attention Deficit Hyperactivity Disorder (ADHD) – ADHD is a developmental disorder in which the main diagnostic features include significant problems with inattention, hyperactivity, and impulsivity. The current, most common diagnostic criteria for ADHD come from the Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition – Text Revision (DSM-IV-TR). The DSM-IV-TR provides three different coding options, ADHD, Combined Type, ADHD, Predominantly Inattentive Type, and ADHD, Predominantly Hyperactive-Impulsive Type (American Psychiatric Association, 2000).

National Association of School Psychologists (NASP) – NASP is a non-profit association that represents school psychology and supports school psychologists in enhancing the mental health and learning of all children. It has over 25,000 members from across the United States and other countries.

School Psychologist – As defined by NASP, school psychologists are highly trained in both psychology and education. They need to complete a minimum of 60 graduate credits and a 1200-hour internship to obtain a specialist-level degree. Their training prepares them to provide consultation, evaluations, interventions, prevention, and research and planning. School psychologists need to be certified and/or licensed by the state in which they practice.

Assumptions

Since this study was designed to collect information through a survey method, the first assumption was that the randomized procedure used to select the sample was representative of the whole population by selecting current regular members of NASP working primarily in a school setting as a school psychologist. Another assumption was that the level of reading and writing skills typically exhibited by the participants support the appropriateness of a self-administered questionnaire. The next assumption was that the survey respondents answered each item in the survey in a thoughtful, honest, and accurate manner. The final assumption was that each of the survey respondents interpreted the items in similar ways.

Limitations of the Study

The first limitation was that the participants of the study were all regular NASP members who stated they are practicing school psychologists working primarily in a school setting. This means that only school psychologists that joined this professional organization were included and results may not be reflective of all school psychologists' practices. When determining the degree to which this study can be generalized to the general population, the results of this study were limited to how well the sample of school psychologists who are regular members of NASP represents school psychologists as a whole.

Because of the nature of survey research, response bias was a possible limitation. Furthermore, when completing a self-administered mail survey, the respondents may have been biased due to their interest level and knowledge about the topic being studied (Dillman, 1978). The effect of social desirability may have caused some respondents to provide responses based on their knowledge of recommended practice rather than their actual practice. Due to the voluntary nature and effect of social desirability, the participants' responses may not have been indicative of their actual assessment and intervention practices (Fisher, 1993). Even with an acceptable return rate, there was a possibility of differences between the respondents and those who did not return the survey.

The survey was carefully designed in order to assess an extensive variety of assessments and interventions with the possibility for respondents to include other options through open-ended items. A possible limitation was that some assessment and intervention practices were missed even with the use of open-ended items. Furthermore, the assessment instruments included in the survey were representative of the most recent editions available at the time. Because of the nature of publishing assessment instruments, the most recent revised editions may not have been presented during the time of taking the survey and therefore the results may not have been indicative of current usage of those limited number of instruments. Although this study attempted to gain usage information for a wide variety of assessment and intervention practices, it did not explain how school psychologists use the information gained through assessment and during intervention. In addition, the study did not yield information that was related to perceived importance of the assessment and intervention practice in the decision-making process or why the assessment or intervention was selected.

Another limitation of this study was the lack of established reliability and validity information for the survey instrument used. To help establish content validity for the survey, an expert panel was used to review the survey and a

pilot study was conducted on a small, convenient sample. To help establish reliability, the survey was administered a second time to the pilot study group.

Finally, the prevalence of ADHD can vary significantly due the function of age, sex, and other factors. It was possible that the selection of an assessment battery would vary based on these variables (Barkley, 1998; Koonce, 2007). Based on this information, a possible limitation of this study was the survey of general assessment practices rather than looking for assessment practices based on a specific age and/or sex.

Summary

This chapter outlined the importance of studying the assessment and intervention practices of school psychologists regarding ADHD. The social and academic difficulties children with ADHD experience in school are challenging for educators. Due to these difficulties and the estimated prevalence among school-aged children, ADHD is one of the most common reason for referrals to school psychologists. School psychologists are expected to assess and provide interventions to children with ADHD. In order to understand and improve ADHD assessment and intervention practices, this study surveyed school psychologists' assessment and intervention practices.

This chapter presented several research questions and related hypotheses, which addressed demographic variables and how often school psychologists are performing ADHD assessments and interventions.

The research questions and hypotheses focused on school psychologists' assessment instrument and intervention usage for ADHD and their beliefs regarding training, qualifications, and level of confidence with ADHD assessments and interventions. The research questions and hypotheses were designed to study relationships and differences between various ADHD assessment and intervention practices. Definitions and assumptions of the study were provided. Finally, this chapter detailed possible limitations of the study such as the generalizability of the results, the effect of social desirability and nonresponse, the reliability and validity of the survey instrument, and the use of general practices versus more case-specific practices. In the next chapter, the literature that guided this study will be reviewed and discussed.

CHAPTER II

LITERATURE REVIEW

The following information covers the history of ADHD, the etiology of ADHD, the prevalence of ADHD, the history of ADHD in education, the assessment practices of ADHD, the intervention practices for ADHD, and the history of previous survey studies. A path diagram showing the structure of the literature review can be seen in Figure 2.

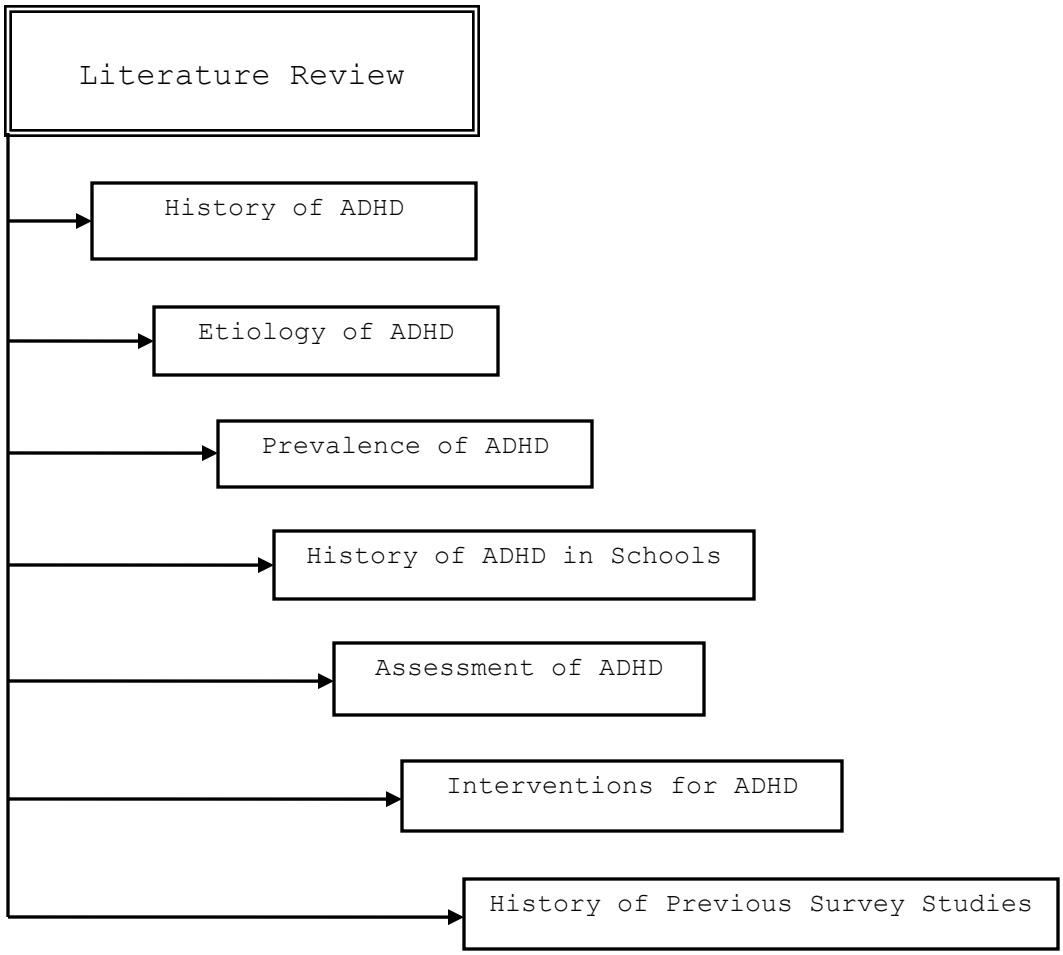

Figure 2. Path diagram of the literature review.

History of ADHD

When surveying the assessment and intervention practices of a disorder such as ADHD, it is important to explore its history and origin in order to understand the framework in which assessment and intervention are based. It has only been a few decades that ADHD has been recognized as a psychiatric disorder. However, the history and conceptualization of ADHD is much longer and more complicated. ADHD as a disorder has been known by a variety of names throughout its history. It has been referred to as encephalitis lethargica, minimal brain damage, minimal cerebral palsy, mild retardation, minimal brain dysfunction, hyperkinesis, atypical ego development, hyperkinetic reaction of childhood, attention deficit disorder (ADD), and ADHD (Armstrong, 1995; Barkley, 1998; Kessler, 1980).

The conceptualization of ADHD is believed to have originated with George Still. He is one of the earliest authors to write about a behavioral condition that is most like the condition of ADHD we know today. Still (1902) published lectures that described 43 children in his clinical practice who had serious problems with sustained attention, being overactive, aggressive, defiant, resistant to discipline, and excessively emotional. These children displayed poor self-control, spitefulness, cruelty, dishonesty, and a need for immediate gratification. Still often considered these characteristics as

being part of a deficit in moral control of behavior and volitional inhibition. A person with these deficits does not have the capacity to understand the consequences of their behavior over time in relation to processing information about themselves and their actions.

Still's ideas regarding the lack of moral control of behavior are linked to the contemporary ADHD related concepts of self-awareness, working memory, and rule-governed behavior (Barkley, 2006). Still shared many other similarities with researchers today such as describing the greater proportionality of males than females, age of onset, propensity for accidental injuries, increased threats to others, genetic factors, and comorbid conditions (Barkley, 2006).

According to Still (1902), parenting practices were a factor when assessing for the condition. Proper parenting practices were needed in order for a child to be included in the category of lack of moral control. It meant that this category was reserved for children who displayed an organic condition despite adequate parental guidance. Still proposed the possibility of biological predisposition due to heredity, but mostly the condition was due to pre- or post-natal injuries.

Alfred Tredgold (1908) also wrote about similar behavioral and learning deficiencies. Both Still and Tredgold believed that interventions such as environmental accommodations and medication could be used for temporary improvements, but the relative permanence of the condition was noted.

Within North America, the history of ADHD is frequently traced back to an encephalitis epidemic that occurred in 1917-1918. Children that were infected with encephalitis and survived were found to develop several behavioral symptoms such as inattentiveness, hyperactivity, and impulsivity (Barkley, 2006). These characteristics were similar to the ones present in the conceptualization of modern ADHD. After the encephalitis epidemic, many papers were written reporting the observed symptoms of inattentiveness, hyperactivity, and impulsivity that were a result of encephalitis. The disorder was referred to as postencephalitic behavior disorder and it was thought to be a result of brain damage. Due to the amount of children affected, there was a significant amount of interest in the behavioral disorder and that the brain injury appeared to be the cause of behavioral manifestations. Several different types of brain injuries were studied and were found to be connected to cognitive and behavioral impairments. These behavioral impairments included inattentiveness, hyperactivity, and impulsivity (Ebaugh, 1923; Strecker & Ebaugh, 1924; Stryker,

1925). Levin (1938) used the similarity of hyperactive symptoms in children and behavioral difficulties of primates with frontal lobe lesions to propose a cause due to some defect in forebrain structures.

Straus and Lehtinen (1947) believed that if brain injury was the cause of inattentiveness, hyperactivity, and impulsivity, then those symptoms alone were evidence of brain injury. Children who displayed these symptoms were considered brain-injured whether or not there was any evidence of a brain injury. Since this concept lacked any evidence of a brain injury, the classification would later change to minimal brain damage and eventually the concept of minimal brain dysfunction by the 1950s and 1960s (Barkley, 2006). Strauss and Lehtinen's text included several educational accommodations for brain-damaged children such as smaller class sizes, more carefully regulated classrooms, and reducing distraction within the classroom environment. These recommendations served as the precursor to special education services and are still commonly used today with children with ADHD.

From 1937-1941, several papers were published regarding the beginning of medication as a treatment for behavioral disordered children (Bradley, 1937; Bradley & Bowen, 1940; Molitch & Eccles, 1937). The administration of stimulant medications resulted in improved behaviors and academic performance.

Even though this discovery was a result of coincidence, later studies would confirm such a medication benefit (Laufer, Denhoff, & Solomons, 1957).

Laufer et al. (1957) investigated the neurological mechanisms underlying the behavioral symptoms. They were the first to use the term hyperkinetic impulse disorder to refer to the collection of symptoms we now call ADHD. Through their research with stimulant medication, they determined that hyperactivity was a prominent behavior in the disorder. The disorder was also characterized by behavioral difficulties with short attention span, poor concentration, impulsivity, unpredictability, irritability, explosiveness, need for instant gratification, and poor frustration acceptance. Laufer et al. discussed how the disorder could affect classroom performance, visual-motor difficulties, and reading and math difficulties.

During the late 1950s and early 1960s, the idea of brain damage in children as the cause of ADHD was beginning to be criticized. In particular, it was troublesome that there was no corroborating evidence between the symptoms and documented brain damage (Birch, 1964; Herbert, 1964; Rapin, 1982). The concept of minimal brain dysfunction was slowly discredited and it was found to be too vague, lacked neurological evidence, was overinclusive, and provided little or no prescriptive value (Kirk, 1963). It was eventually recognized, that in documented

cases of brain damage, the resulting behaviors were not consistent across cases. Hyperactivity was only noted in a minority of cases. Brain injured children did not display common characteristics. Children with hyperactivity rarely had substantial evidence of brain damage (Barkley, 1998).

The idea of minimal brain dysfunction did have some utility. It focused on neurological mechanisms rather than environmental ones such as parenting practices. The idea of minimal brain dysfunction was replaced by more specific labels for the various cognitive, learning, and behavioral disorders it included. The new names were based on observable behaviors that more specifically described the deficits.

Laufer and Denhoff (1957) and Chess (1960) moved the shift of minimal brain dysfunction to that of hyperactivity syndrome with specific behavioral characteristics. Chess's work was important because it emphasized activity as the defining feature and stressed the need to use objective data in addition to subjective data. It also moved the fault away from parents and further separated the concept of hyperactive syndrome from that of brain damage. Chess suggested a multimodal treatment approach that recommended parent counseling, behavior modification, psychotherapy, medication, and special education services. Hyperactivity symptoms were viewed as relatively benign and alleviated by puberty most of the time. This belief

was widely held among clinicians well into the 1980s (Barkley, 2006). Most of the treatment for ADHD was therefore short-term. In 1968, hyperactivity was first included in the Diagnostic and Statistical Manual of Mental Disorders (DSM-II; American Psychiatric Association, 1968). It was referred to as hyperkinetic reaction of childhood disorder and it was characterized by overactivity, restlessness, distractibility, and short attention span. It occurred especially in young children and it usually diminished by adolescence.

In the 1970s, a great deal of research was published on ADHD that redefined the characteristics of ADHD. Hyperactivity had become a serious and popular subject that was investigated thoroughly. Research solidified the movement away from the concept of brain damage toward the idea of more subtle biological or genetic factors. The defining features of hyperactivity were broadened to include characteristics such as impulsivity, short attention span, low frustration tolerance, distractibility, and aggressiveness (Douglas, 1972). Douglas also found that as the child got older there were changes in behavior and failing grades. Proponents of this new view of ADHD argued that deficits in attention and impulse control occurred as much or more than difficulties with hyperactivity.

This movement, that now included all three aspects of ADHD: hyperactivity, inattention, and impulsivity, was further supported by changes in the Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III; American Psychiatric Association, 1980). The nomenclature was changed from hyperkinetic reaction of childhood disorder to attention deficit disorder with or without hyperactivity. The definition put more emphasis on symptoms of inattention and impulsivity. This version of the manual provided more specific diagnostic criteria and specific symptom lists. It also provided cutoff points of symptoms, guidelines for age of onset and duration, and exclusionary criteria. The DSM-III's inclusion of the ADD subtypes of with or without hyperactivity was controversial (Barkley, 2006). At the time, there was little empirical evidence to support the inclusion of these subtypes. The 1970s also marked the beginning of the use of parent and teacher rating scales. The rating scales were used to assist in a diagnosis of ADHD rather than relying solely on clinical judgment for the diagnosis.

During the 1980s, research continued at a rapid rate and numerous studies were conducted regarding the subtyping of ADD. Research often focused on differentiating the disorder from other psychiatric conditions and the use of more specific diagnostic criteria (Barber, Milich, & Welsh, 1996; Barkley,

1990). Another renaming occurred with the publication of the DSM-III-R (American Psychiatric Association, 1987). ADD was now renamed to be called ADHD. The revision provided a single list of symptoms and a single cutoff score that replaced three separate lists and cutoff scores in the DSM-III. The list of symptoms was based on more empirically based behaviors. There was also a new need to view symptoms as developmentally inappropriate when compared to a child's mental age. The DSM-III-R removed the exclusionary criteria of coexistence of mood disorders. Subtypes were removed and ADHD was now classified as a disruptive behavior disorder along with Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD).

During the latter half of the 1980s, a new conceptual theory was proposed due to research that noted variability with inattention based on situational variables. It was found that the presence and degree of ADHD symptoms was dependent upon instructional and motivational factors (Douglas & Peters, 1979; Rosenthal & Allen, 1978; Routh, 1978; Sroufe, 1975). These findings led to the hypothesis that a deficit in motivation may be a better model to explain ADHD. This new conceptualization changed the view of ADHD and led to theories of ADHD that included components of motivation or effort. Children with ADHD have more difficulty with sustained effort during repetitive tasks.

They have more difficulty with motivation when the rewards or goals are delayed (Barber, Milich, & Welsh, 1996; Barkley, 1990).

Also during this decade, Herbert Quay implemented Jeffrey Gray's model of anxiety to explain ADHD. Gray's model identified systems of inhibition and activation. Quay used those systems to explain the poor inhibition and impulsivity evident in children with ADHD (Gray, 1982, 1987, 1994; Quay 1987, 1988, 1997).

Another significant part of the 1980s was dedicated to researching the social-ecological impact of ADHD on the children, parents, teachers, siblings, and peers affected by ADHD. Greater refined research methods were being used to explore the unique features of ADHD as differentiated from other psychiatric disorders. Researchers often continued to focus on subtyping. During this time, research was done on possible etiologies of ADHD. Researchers also stopped solely relying on clinical-referred samples and started to use community-derived samples (Barkley, 1998).

Advances in assessment tools for ADHD were also notable during the 1980s. General behavior rating scales were developed that were more comprehensive, provided better norms, and included better development procedures. Rating scales specific to ADHD and continuous performance tests were created for

commercial use. Continuous performance tests measure symptoms of inattention, vigilance, and impulsivity through the use of repetitive tasks (Gordon, 1983). More emphasis was given to direct behavioral observations that were more objective than the subjective ratings of parents and teachers.

Interventions for ADHD continued to progress during the 1980s. Better research designs were providing information regarding comparisons of the effectiveness of single versus combined treatment approaches. Treatment of ADHD included cognitive behavioral therapy and self-directed interventions. Specific parent training programs were created for families of children with ADHD to provide training in behavior management techniques such as differential attention, time-out, and home token economy systems. During this era, several improvements were made in the area of classroom management techniques for children with ADHD. Social skill training was used to help children with ADHD improve social skills deficits. Medication treatment of ADHD expanded to various psychopharmaceutical options (Barkley, 1990).

During the 1980s, public awareness of ADHD increased dramatically. Several parent support associations were created in response to the public demand. These organizations were influential in changing federal regulations to include ADHD as an educational disability that qualified the child for special

education services (Barkley, 2006). When the Education of All Handicapped Children Act of 1975 was passed, it did not provide special education services for ADD or ADHD unless other indicators qualified students under another eligibility category. The Education of All Handicapped Children Act of 1975 included a concept of minimal brain damage as part of the learning disability category, but it precluded many children with ADHD who did not have another disability as well from receiving special education services. Children with ADHD often did not receive the services they needed despite exhibiting educational needs. It was not until 1990 with the reauthorization of the Individuals with Disabilities Education Act (IDEA) that children with ADHD would be eligible for special education services based on that disability alone.

During the 1990s, there appeared to be a shift towards a view of ADHD being influenced by neurological and genetic factors rather than by social and environmental factors. There were many studies that incorporated neuroimaging technologies in the study of ADHD. Studies used techniques such as positron emission tomography (PET) and magnetic resonance imaging (MRI) (Castellanos, Giedd, Eckburg, et al., 1994; Castellanos, Giedd, Marsh, et al., 1996; Filipek et al., 1997; Hynd, Semrud-Clikeman, Lorys, Novey, & Eliopulos, 1990; Zametkin et al., 1990). Numerous studies clarified and reinforced the role of

genetic factors of ADHD (Biederman, Faraone, & Lapey, 1992; Biederman, Faraone, Mick, et al., 1995; Biederman, Keenan, & Faraone, 1990; Edelbrock, Rende, Plomin, & Thompson, 1995; Gilger, Pennington, and DeFries, 1992; Levy & Hay, 1992; Pauls, 1991). It was also a time when a deficit in behavioral inhibition and self-regulation was discovered to be a possible distinguishing factor between ADHD and other mental and developmental disorders (Barkley, 1997b; Nigg, 2001). ADHD in adults also came to be widely accepted during the 1990s.

In 1994, the DSM-IV was published with a new set of criteria for ADHD (American Psychiatric Association, 1994). The new criteria set forth the categories of ADHD – Predominately Inattentive Type, ADHD – Predominately Hyperactive-Impulsive Type, ADHD – Combined Type, and ADHD – Not Otherwise Specified. New requirements included evidence of pervasiveness across settings and impairment within a major domain of functioning. Concerning treatment, the Multimodal Treatment Study of ADHD (MTA) was conducted to determine what combinations of treatment were most effective for ADHD (MTA Cooperative Group, 1999).

From 2000 until the present, ADHD research continued to explore heredity, molecular genetics, and neuroimaging. Research in the areas of neuropsychology and subtyping continued to receive a lot of attention. Research continued as to how comorbid conditions impact impairment, prognosis, and treatment

of ADHD. There have been advances in treatment. Results from the MTA have continued to be interpreted and debated. New developments in the way medications are administered in the form of sustained-release delivery systems revolutionized the way ADHD is treated (Barkley, 2006). Finally, in 2000, DSM went through its latest revision (American Psychiatric Association, 2000). The DSM-IV-TR provided the most rigorous and most empirically based criteria in the history of ADHD (Barkley, 2006).

Over the years, ADHD has matured into a well-studied and widely accepted developmental disorder. ADHD has become one of the most studied childhood disorders and has also become one of the most common referrals in education (Barkley, 2006). After reviewing some of the historical contexts of ADHD, it also becomes important to understand the possible etiologies of the disorder.

Etiology of ADHD

According to Barkley, it is now plausible to make broad conclusions regarding the causes of ADHD. Experts within the field have little doubt about the multiple etiologies that may lead to ADHD. There is strong evidence suggesting that neurological and genetic factors are the main contributors to the disorder. There is no longer a social-environmental theory about the cause of ADHD that is consistent with the research

(Barkley, 2006). Environmental influences can affect the severity of the disorder, but cannot be attributed as a cause (Barkley, 1998). The cause of ADHD can best be explained through neurological and genetic factors. Although the theories of ADHD mainly focus on neurological and genetic causes, ADHD has also been known to be caused by toxins, streptococcal infection, and side effects of medications.

Neurobiological factors have received the most attention as possible causes. Some structural brain damage was initially proposed as the cause of ADHD symptoms, but only minor structural differences have been found between an individual with ADHD and a control group (Barkley, 2006). Using structural and functional imaging techniques, studies have shown that the area of the brain with differences is the area of the prefrontal cortex. ADHD research provided substantial support to reveal deficits in behavioral inhibition, sustained attention, resistance to distraction, and executive functioning that is mediated by the prefrontal cortex (Barkley, 1997a; Hervey, Epstein, & Curry, 2004; Tannock, 1998).

The neurotransmitters, dopamine and norepinephrine, are thought to be less prevalent in the frontal cortex area of the brain and can contribute to symptoms of ADHD. This hypothesis came from the research on psychostimulants where the availability of neurotransmitters is increased through use of

the medication (DuPaul & Stoner, 2003). Psychophysiological research through electroencephalograph (EEG) studies have indicated that there is reduced arousal to stimulation, diminished sensitivity to reinforcement, increased slow wave or theta activity in the brain, and decreased beta or fast-wave activity in the brain in connection with symptoms of ADHD such as inattention and concentration (Beauchaine, Katkin, Strassberg, & Snarr, 2001; Hastings & Barkley, 1978; Pliszka, Liotti, & Woldorff, 2000; Rosenthal & Allen, 1978). A review of studies that measured cerebral blood flow in children with ADHD versus nondisabled children established that there was reduced flow to the frontal lobes, striatum, and cerebellum. This reduced blood flow rate was consistent with the notion of underactivity in those regions (Hendren, De Backer, & Pandina, 2000). Children with ADHD have smaller overall brain size and greater reductions in brain volumes of the anterior frontal lobes, the basal ganglia, and cerebellar vermis (Tannock, 1998). Functional MRIs established differences in typical brain activity in the frontal region, basal ganglia, and cerebellum of children with ADHD and nondisabled children (Rubia et al., 1999; Teicher et al., 2000).

Finally, there are several pregnancy behaviors and complications that are connected to an increased risk for ADHD such as maternal smoking, maternal alcohol consumption, and low birth weight that is related to minor brain hemorrhaging. There are possible connections between certain amino acid levels and levels of stress and anxiety during pregnancy (Barkley, 2006). This abundant amount of information has provided a strong basis for the neurological factors involved in ADHD.

There was a strong basis for the genetic factors involved in ADHD as an inheritable disorder that runs in families. This conclusion was evidenced by research that demonstrates a higher rate of concurrent and past ADHD symptoms in immediate family members of children with ADHD in comparison to non-ADHD children and families (Faraone, Biederman, Lehman et al., 2000; Faraone, Biederman, Mick, et al., 1993). In studies that compared biological relatives to that of adoptive parents and siblings, it was found that a higher incidence of ADHD occurs within biological families (van den Oord, Boomsma, & Verhulst, 1994).

Barkley (2006) presented numerous studies that used large samples of twins worldwide to help explain how much can be attributed to genetic contribution. The research indicated that 50-95% of the variation in the traits of ADHD can be attributed to genetics with the average being 80% or higher. The twin studies further contradict the social-environmental theory of

ADHD by carefully ruling out the environmental factors in those studies. Shared environmental factors did not play a significant role in these studies. These genetic factor estimates are among the highest for emotional and behavioral disorders (Barkley, 1998). The most recent research has come in the area of molecular genetics where the studies have provided some initial support for an association between certain genes and symptoms of ADHD (Comings, 2000).

Based on the majority of the research, the practical conclusion about the etiology of ADHD is that the cause of ADHD can best be explained through neurological and genetic factors. It is only within the past decade that an overwhelming amount of information has clearly pointed to the etiology of ADHD. The causes of ADHD are important, but it is also necessary to understand the number of children and adults suffering from the disorder.

Prevalence of ADHD

Depending on the population sampled and the methods used, the prevalence of ADHD has been estimated to be between 3%-7% in school-age children according to the DSM-IV-TR (American Psychiatric Association, 2000). Because of the variance among estimates, it becomes important to describe estimates based on differing methods.

When examining prevalence studies established through the use of rating scales, the estimates appeared to be much higher than the DSM-IV-TR. Using teacher rating scales, Nolan, Gadow, and Sprafkin (2001) found a prevalence rate of 18.2% among preschool aged children. The prevalence among elementary aged children was 15.9% and 14.8% for secondary aged children. The use of rating scales to determine estimates produced findings that vary based on age, sex, and source of ratings (Nolan, Gadow, & Sprafkin, 2001). Prevalence rates also varied depending on the country being surveyed (Barkley, 2006). Another way that prevalence studies tried to determine estimates was through reviewing school records to determine the percentage of children identified as having ADHD.

Similar estimates to that of the DSM-IV-TR were found regarding children being diagnosed with ADHD when using school records (Jensen et al., 1995). Jensen reviewed school records from four different communities and found prevalence rates ranged from 1.6% to 9.4% with an average of 5.8%. LaFever, Dawson, and Morrow (1999) found a disproportionate percentage of children diagnosed with ADHD according to a study of school records from two Virginia school districts in grades two through five. The rates ranged from 18% to 20% for white males and prevalence rates for stimulant medication use ranged from 7% to 10%. The estimates were two to three times higher than reported

in the DSM-IV (LaFever, et al, 1999). A more recent study employing school records presented results that indicated prevalence rates more similar to that of the DSM-IV. Tjersland, Grabowski, Hathaway, and Holley (2005) found a prevalence rate for ADHD of 4.4% and prevalence rate for psychostimulant medication use of 4%.

The final method typically used for calculating prevalence rates for ADHD was the use of clinical diagnostic criteria. Because a clinical diagnosis is typically more comprehensive, these estimates appeared to be a closer approximation. When using the DSM-IV criteria, clinical diagnostic studies found estimates between 7.4% and 9.9% (Barbaresi et al., 2002; Hudziak et al., 1998).

The prevalence of ADHD was influenced by sex, geographic location, SES, and ethnicity factors. In studies that use clinic-referred samples, males were more likely to be diagnosed with the disorder by a ratio that ranged from 2:1 to 10:1 with an average of 6:1. Community-based samples typically found proportional ratios of males to females ranged from 2.5:1 and 5.1:1, with an average of 3.4:1 (Ross & Ross, 1982). The research suggested that these differences were most likely due to girls manifesting lower symptom levels and being considerably less likely to manifest aggressive behaviors (Barkley, 2006).

Prevalence of ADHD diagnosis and medication treatment estimates often differed substantially depending on the different regions within the United States (American Academy of Pediatrics, 2000). In 2005, the Center for Disease Control and Prevention's (CDC) report indicated that the prevalence of ADHD diagnosis ranged from a low of 5% in Colorado to a high of 11% in Alabama. The prevalence of ADHD treatment through the use of medication ranged from a low of 2% in California to a high of 7% in Arkansas. In comparison, Southern states had generally higher prevalence rates of ADHD diagnosis and medication treatment (CDC, 2005). Several studies found that medication treatment varied over regions of the United States (Gadow, 1981; Morrow, Morrow, & Haislip, 1998; Wennberg & Wennberg, 2001). Cox, Motheral, Henderson, and Mager (2003) found that students in the Midwest region were 1.55 times and students in the South region were 1.71 times more likely to receive medication treatment for ADHD when compared to the Western region of the United States. There were mixed results regarding the treatment of ADHD within urban and rural settings. Some studies suggested that children with ADHD in urban settings were more likely to receive medication treatment in comparison to children with ADHD in rural settings (Cox et al., 2003; Zito, Safer, dos Reis, Magder, & Riddle, 1997).

There were some studies that suggested there were no differences between urban and rural settings (Bussing, Zima, & Belin, 1998; Rappley, Gardiner, Jetton, & Houang, 1995).

Ethnicity and SES were found to be factors that influence the prevalence of ADHD diagnosis and medication treatment. Low SES was indicated as a risk factor for ADHD and has an impact on medication treatment of ADHD (Biederman, Milberger, et al., 1995). Studies have indicated higher rates of medication treatment of children with ADHD whose families have a higher income in comparison to a lower income (Bussing et al., 1998; LaFever, Hannon, & Dawson, 1997). Studies have indicated a disparity among ethnic groups regarding medication treatment of ADHD. Whites used medication as a treatment of ADHD two to nine times more frequently than nonwhites (Hoagwood et al., 2000; LaFever et al., 1999; Olfson et al., 2003; Rowland et al., 2002; Safer & Malever, 2000; Zito et al., 1997; Zito et al., 1998). Barkley (2003) argued that ADHD occurs across all SES and ethnic backgrounds when controlling for co-existing conditions such as CD and ODD.

History of ADHD in Schools

Because of the prevalence and symptoms of ADHD in schools, it is important to understand school psychologists' practices regarding ADHD. The Education of All Handicapped Children Act of 1975 was federal legislation that provided for special

education services to all eligible students. The law required a free and appropriate education in the least restrictive environment for all students. For students to receive special education services, they had to qualify under one of the established eligibility categories. In the Education of All Handicapped Children Act of 1975, ADHD did not fit in any of those categories. Following this law, school districts did not recognize a responsibility to identify and provide special education services for children with ADHD unless they were also covered under another eligibility category.

In 1990, the special education law was reauthorized under a new name, the Individuals with Disabilities Education Act (IDEA). This reauthorization required a name change in the law, changes in terminology, addition of transitioning components, and addition of disability categories. It was still unclear as to whether or how ADHD fit into this law. After much debate and pressure, the confusion regarding ADHD and the law was addressed.

A significant change in attitude towards ADHD can be traced back to a memorandum issued by the U.S. Department of Education in September of 1991 (Davila et al., 1991). This memorandum offered guidance towards how children with ADHD were eligible for special education services under IDEA. According to this memorandum, children with ADHD would be considered eligible for

special education and related services under the IDEA category of "other health impairment." Children received services for having ADHD as their sole criteria for the first time. Previously, children with ADHD also had to have another disability that fit under the law in order to qualify. This memorandum also provided guidance as to the additional civil rights students with ADHD were allowed under Section 504 of the Rehabilitation Act of 1973. Children with ADHD who did not meet the criteria under IDEA, but still demonstrated a physical or mental impairment that substantially limits a major life activity, such as school, received protection. Protection under Section 504 afforded an individual plan that would be implemented by the school to ensure full participation in educational activities. The memorandum also provided reminders to schools regarding their childfind responsibilities and how they now extended to students with ADHD. Part of that responsibility was conducting evaluations for children with ADHD. The responsibilities continue today even under the most recent version of the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA).

IDEA and Section 504 legislation both ensure students receive a free and appropriate education; both allow parents to request an evaluation due to an educationally related disability of their child at the school's expense; both have procedures to

ensure a child's educational program is individualized to meet the identified child's unique needs; and both offer some form of due process in order for parents to contest a school district's decision (Ahearn et al., 1993; Davila et al., 1991; Hakola, 1992).

While IDEA and Section 504 have many similarities, they also differ in how the child qualifies for their services and procedures. IDEA has several parental rights and built in safeguards. Section 504 offers less specific procedures. In order for a child to qualify under IDEA, the child must demonstrate a disability and a need for special education services or related services. Under Section 504, a child may not qualify for an individualized education program (IEP), but they may still demonstrate an impairment that limits a major life activity. Section 504 allows for modifications and accommodations at school or in the classroom. IDEA provides services for school-aged children between the ages three through twenty-one. Section 504 can follow a child beyond the age of twenty-one to help with employment, public access to buildings, transportation, and higher education (Ahearn et al., 1993; Hakola, 1992).

These provisions under IDEA and Section 504 legislation have implications for school psychologists regarding their responsibilities in assessing and intervening for child with, or

suspected of having, ADHD. If a parent suspects their child's school performance or social/emotional functioning is being adversely affected due to ADHD, they have the right to request a complete evaluation at the public school district's expense (Ahearn et al., 1993; Davila et al., 1991). Based on this notion, schools are more likely to be involved in issues relating to the diagnosis and treatment of ADHD.

Professional organizations for physicians, clinical psychologists, and school psychologists have debated who is qualified to diagnose ADHD (American Academy of Child and Adolescent Psychiatry, 1997; American Academy of Pediatrics, 2000; Demaray et al., 2003; Koonce, 2007). Identification of ADHD can be made through a medical diagnosis by a pediatrician or psychiatrist (American Academy of Child and Adolescent Psychiatry, 1997; American Academy of Pediatrics, 2000). The medical practitioner often prescribes medication as an intervention for ADHD (Conners, 2006). Presumably, this is why ADHD falls under the "other health impairment" category of IDEA. Physicians have comprehensive knowledge of a child's development. They are able to diagnose congenital and acquired disorders using clear physiological indications. Because no physiological markers or medical tests have been discovered to screen or test for ADHD, physicians may not be best suited for this diagnosis (Greenhill, 1998; Hynd et al., 1991). Physicians

may have limited information regarding the child's behavior at home or in school. This information is critical when making an ADHD diagnosis.

Clinical psychologists are competent in several psychological and behavioral assessments that can be used to diagnose ADHD. They are typically well versed in and use the DSM criteria. They can provide a differential diagnosis and treatment for all types of childhood disorders (American Psychological Association, 2002). Clinical psychologists face similar difficulties as physicians in obtaining information from the school setting.

School psychologists have access to firsthand knowledge of a student's behavior in a school setting. The nature of school requires that children sustain attention while suppressing impulsivity and hyperactivity to complete school-related activities. These requirements make it more likely for students to exhibit symptoms and behaviors of ADHD than in a physician's or psychologist's office (DuPaul & Stoner, 1994). School psychologists are well-trained in a variety of assessment instruments that are included in the typical, accepted battery for ADHD assessment. Schools are not required to have medical evaluation information in order to make educational decisions regarding a child's ADHD diagnosis. There is a difference between the school-based categories under IDEA and the more

extensive criteria outlined in the DSM (U.S. Department of Education, 2006). School psychologists are able to participate in a consultative role and provide interventions for ADHD as well (Atkins & Pelham, 1991; DuPaul, 1992; DuPaul & Stoner, 1994; Montague, McKinney, & Hocutt, 1994). There may be some concerns regarding the school psychologist's ability in the assessment and treatment of child psychopathology. Furthermore, School psychologists typically have fewer links to community-based resources when it comes to diagnosing and treating ADHD (Wright, 2002).

Assessment of ADHD

The primary symptoms of ADHD are chronic difficulties with inattention and/or hyperactivity-impulsivity. These symptoms are measured by specific behaviors or a group of related behaviors. ADHD symptoms are displayed by an early age, to a degree that is inappropriate according to developmental levels, and across multiple settings. ADHD strains an individual's ability in paying attention, restricting movement, inhibiting impulses, and regulating behavior (Barkley, 2006). These behavioral symptoms are further detailed by the criteria set forth in the latest edition of the DSM. The criteria are a useful guide in diagnosing ADHD.

Along with the primary difficulties of inattention, hyperactivity, and impulsivity, individuals with ADHD are also more likely to experience several associated symptoms (Barkley, 2006). The associated symptoms are problems that are neither necessary nor sufficient for a diagnosis of ADHD, but have been documented to occur more frequently with individuals with ADHD than their counterparts. Some of the associated symptoms of ADHD include difficulties with intellectual development, adaptive behavior functioning, academic achievement, speech and language, memory and planning, motivation, behavioral functioning, sensory and motor functions, social and emotional functioning, minor physical anomalies, general health and sleep problems, and a higher rate of physical injuries (Barkley, 1990; Barkley, DuPaul, & McMurray, 1990; Barkley, Fischer, Edelbrock, & Smallish, 1990; Brock & Knapp, 1996; Danforth, Barkley, & Stokes, 1991; Firestone, Lewy, & Douglas, 1976; Frazier, Demaree, & Youngstrom, 2004; Stein, Szumowski, Blondis, & Roizen, 1995; Szatmari, Offord, & Boyle, 1989).

Individuals with ADHD tend to have a high rate of comorbidity with other psychiatric disorders. A diagnosis of ADHD has significant related risks for the coexistence of anxiety disorders, mood disorders, oppositional defiant disorder, conduct disorder, learning disorders, and communication disorders (American Psychiatric Association,

2000). To a lesser extent, ADHD also has been associated with posttraumatic stress disorder, tic disorders, obsessive-compulsive disorder, and autistic spectrum disorders. There are also documented associated impairments with poor peer relationships and greater social rejection (American Psychiatric Association). In addition, poor parent-child relationships may exist and are characterized by poor compliance, increased requests for assistance, and increased need for parental commands, reprimands, and punishment (Danforth et al., 1991; Johnston & Mash, 2001). Because of these poor parent-child relationships, parents tend to experience greater parenting stress, a lower sense of parenting competence, poorer discipline techniques, and negative perceptions of the relationship (Dupaul, McGoey, Eckert, & VanBrakle, 2001; Johnston & Mash, 2001).

There is no standard battery for the assessment of ADHD (Barkley, 1998; Fowler, 1992). The assessment process is further complicated because there is no single test that can detect its existence (Greenhill, 1998). Furthermore, no single assessment model for assessing ADHD has been endorsed by professional organizations such as the National Association of School Psychologists or the American Psychological Association (Koonce, 2007). The American Academy of Child and Adolescent Psychiatry (AACAP) and the American Academy of Pediatrics (AAP) have

published guidelines for their members in diagnosing ADHD that recommend obtaining information from multiple sources, observations, rating scales, medical exams, and psychoeducational testing (AAP, 2000; Dulcan et al., 1997). These guidelines adhere to the consensus of the existing literature for assessment of ADHD (Hoff et al., 2002; Pelham et al., 2005; Tobin et al., 2008). Assessment practices can vary considerably from professional to professional, but ADHD evaluations should use multiple methods of data collection using various sources of information within several settings (Hoff et al., 2002; Tobin et al., 2008).

The goal of assessment should not be restricted to deciding whether or not the individual has ADHD. Rather, assessment should follow four objectives. An ADHD assessment should provide assessment for a diagnosis, assessment of the impairments, assessment to plan for intervention, and a way to evaluate the outcomes of the interventions (Pelham et al., 2005). When assessing to diagnose ADHD, professionals within the community use the DSM criteria in order to diagnosis ADHD and include a differential diagnosis from other childhood psychiatric disorders. Professionals within the school follow the criteria of IDEIA or Section 504 when identifying ADHD (Ahearn et al., 1993; Hakola, 1992). Assessment of impairments should focus on the child's functioning within the domains of

school, social, and family. When conducting assessments for intervention planning, there is a need to gather information that is relevant to the design of the related interventions. The final objective of evaluating the outcomes of the intervention involves progress monitoring to ensure effectiveness (Pelham et al., 2005).

An ADHD assessment is a complex and comprehensive process. Many of the assessment instruments that are typically used in a battery for ADHD assessment do not provide information directly related to the ADHD diagnosis. Several of the assessment instruments provide information that is related to associated symptoms, comorbid disorders, differential diagnosis, and associated impairments (Barkley, 1998; Fowler, 1992). Many of the assessment instruments used measure other variables than the primary symptoms of inattention, hyperactivity, and impulsivity. In order to complete a comprehensive ADHD evaluation, several instruments and procedures need to be utilized (Greenhill, 1998).

The three most common components of an ADHD battery are rating scales, interviews, and direct observations (Gordon & Barkley, 1998; Shelton & Barkley, 1994). Even though they are not deemed valid by themselves in the assessment and diagnosis of ADHD, several other assessment instruments are needed to address associated symptoms, comorbid disorders, differential

diagnosis, and associated impairments. This is accomplished through psychological tests and rating scales that measure cognition and intelligence, academic achievement, behavioral functioning, adaptive behavior functioning, social and emotional functioning, memory and planning, speech and language, motivation, familial characteristics, sensory and motor functions, and personality. The use of neuropsychological assessments and projective techniques are also common.

School psychologists must be knowledgeable regarding the appropriate assessments for ADHD because ADHD is a common problem within the school environment. Children with ADHD frequently experience academic and social difficulties in school and there are numerous referrals to school psychologists for ADHD. School psychologists are in an ideal position to gather direct sources of information and data in the assessment and intervention of ADHD (Power et al., 1994). IDEIA and Section 504 legislation create responsibilities for schools in assessing children with or suspected of having ADHD. Because of this, school psychologists are frequently involved in the assessment of ADHD.

Interventions for ADHD

Children with ADHD spend a large part of their time in a school setting. These environments are very structured and require children to learn, follow rules, interact appropriately

with others, participate in instructional activities, minimize distractions, and refrain from disturbing others (DuPaul & Stoner, 1994; Power et al., 1994). Teachers have expectations as to how children should behave in their classes. Teachers expect to teach children in a manner that is consistent with their organizational, social, and cultural expectations (DuPaul & Stoner, 2003). School psychologists are an ideal position for to help conduct both ADHD assessment and interventions.

School psychologists have access to all of the settings where children are exhibiting ADHD symptoms and impairments. School psychologists are able to form consultative relationships with parents and teachers as part of the intervention process allowing them to offer both direct and indirect interventions to children with ADHD. There are a wide range of interventions that have been found useful for ADHD. There are also several interventions that continue to be advocated or used despite limited evidence regarding the effectiveness (Barkley, 2006; Conners, 2006; DuPaul & Stoner, 2003).

There are numerous interventions for ADHD, but not all of the interventions have shown to be effective. Some of the intervention options for ADHD include medication, contingency behavior management techniques, self-management strategies, instructional strategies, peer strategies, computer-based instruction, instructional modifications, parent counseling and

training, anger management, biofeedback training, cognitive behavioral therapy, conflict resolution training, social skill training, homework interventions, instructional consultation, neurofeedback training, parent education, play therapy, relaxation training, teacher education, dietary restrictions, communication journals, megavitamins or supplements, modifying environmental factors, ocular motor exercises, study skill training, and other psychotherapies (Barkley, 2006; Conners, 2006; DuPaul & Stoner, 2003).

The MTA Cooperative Group study was the longest and most thorough study on the effects of ADHD interventions (MTA Cooperative Group, 1999). A group of 579 children with ADHD aged 7 to 9.9 years were assigned to 14 months of treatment. The treatment groups included a group receiving medication management, a group receiving intensive behavioral intervention, a group receiving a combination of both medication management and intensive behavioral intervention, and a group receiving treatment by community providers. The researchers found that a combination of medication and behavioral treatment worked significantly better than behavior therapy alone or community care alone in reducing symptoms of ADHD. In addition, the MTA study found that medication treatment alone worked significantly better than behavior therapy alone or community care alone in reducing symptoms of ADHD.

Because school psychologists would be expected to assess and treat children with ADHD, it is important to survey their assessment and intervention practices (Reid et al., 1998).

History of Previous Survey Studies

Several studies have examined assessment practices of school psychologists, but often they have not examined ADHD assessment specifically. In 1998, Reid et al. found only a few studies that examined actual practices for ADHD in the schools and Barkley (1998) found limited survey research examining the actual practices of psychologists and their methods used with ADHD. The following studies have examined assessment practices of school psychologists, but provided limited information regarding ADHD assessment practices specifically.

Goh et al. (1981) examined the assessment practices of school psychologists who were National Association of School Psychologists (NASP) members practicing in the United States. Of the 500 school psychologists surveyed, 274 useable surveys were returned. The survey asked the school psychologists to identify the assessment instruments used and the frequency of usage. The survey included demographic information and percentage of time allocated for assessment activities. The most current assessment instruments of the time were listed under the categories of intelligence, achievement, behavior rating, personality, perceptual functioning, preschool, and

vocational interests. The results showed that the most frequently used assessment instruments fell under the intelligence and achievement categories. The percentage of test usage for each category was as follows: intelligence 26.9%, achievement 22.2%, perceptual functioning 21.8%, personality, 14%, behavior rating 8.6%, preschool 5.3%, and vocational 1%. The results showed that 87.6% of the respondents reported contact with elementary students either often or always and 14.6% of the respondents reported contact with preschool students either often or always.

Hutton et al. (1992) examined the assessment practices of school psychologists who were NASP members practicing in the United States. Of the 1000 school psychologists surveyed, 389 useable surveys were returned. The purpose of the study was to update the information reported in the Goh et al. (1981) study. The survey was similar in format and asked the school psychologists to identify the assessment instruments used and the frequency of usage. The survey included demographic information and percentage of time allocated for assessment activities. The most current assessment instruments of the time were listed under the categories of intelligence, achievement, behavior rating, personality, perceptual functioning, preschool evaluation, adaptive behavior, and vocational interests. The results indicated that the most frequently used assessment

instruments fell under the categories of achievement and intelligence. The percentage of test usage for each category was as follows: intelligence 21.9%, achievement 32.8%, perceptual functioning 6.8%, personality 11.5%, behavior rating and adaptive behavior 18.3%, preschool 7.2%, and vocational 1.5%. It was indicated that over 85% of the respondents reported contact with elementary students either often or always. The respondents reported being in contact either often or always 24.5% with preschool students, 63.6% with junior high students, and 47.6% with high school students.

Wilson and Reschly (1996) studied intervention practices, system reform issues, and assessment practices of school psychologists who were NASP members practicing in the United States. A total sample of 1600 school psychologists were drawn and divided into four samples. Only the third sample responded to items related to practice. Of the 400 school psychologists surveyed, 251 useable surveys were returned. The study also examined the assessment and training practices by faculty from school psychology training programs. Of the 239 faculty members surveyed, 156 useable surveys were returned. The purpose of the study was to analyze the current usage of assessment instruments by school psychologists and the training practices of faculty members. The survey asked the school psychologists to identify the assessment instruments used, the frequency of usage, and

perceived competence in the instruments. The survey included items regarding demographic information, interventions, and system reform issues. The faculty survey had items regarding demographic information, employment conditions, faculty roles, practitioner roles, job satisfaction, system reform issues, and assessment instruments. The most current assessment instruments of the time were listed under the categories of ability/intelligence, preschool and family, social/emotional, adaptive behavior, and social skills, educational skills, visual/motor, projective personality techniques, and systematic behavior observation. The results showed that the Wechsler scales, Bender, and Draw-A-Person were the most used assessment instruments among practitioners. The results showed that the most frequently used assessment instruments fell under the categories of systematic behavior observations and intelligence. The information collected regarding training practices of the faculty members surveyed indicated strong relationships between training and practice.

Some studies have examined school psychologists' practices regarding ADHD, but few studies have surveyed both assessment and intervention practices in detail. Smith (1999) examined ADHD knowledge, training, assessment and diagnostic practices, and intervention practices of school psychologists who were NASP members. Of the 700 school psychologists surveyed, 406 useable

surveys were returned. The purpose of the study was to determine school psychologists' current level of knowledge about ADHD, their training and comfort level with that training, their roles and practices in assessing, diagnosing, and treating children with ADHD, and their attitudes toward the disorder and those with it. The survey was composed of 150 items that measured demographic information, knowledge about ADHD, training regarding ADHD, percentage and frequency of referrals for ADHD, assessment and diagnostic practices including specific usage rates of instruments, treatment practices for ADHD, and attitudes regarding ADHD. The respondents disclosed they were confident in their abilities to deliver assessments and interventions to students with ADHD. Fifty-seven percent of the respondents checked that they assess for ADHD, but they only make a recommendation to a physician for a diagnosis and they do not diagnose themselves. Respondents ranked the development of appropriate interventions for ADHD as more important than the diagnosis. Eighty percent believed that medication is an effective intervention. Seventy-four percent of the respondents thought that ADHD is overdiagnosed. Of the school psychologists surveyed, only 14% indicated that every student with ADHD who did not qualify for special education services was also considered for accommodations under Section 504.

Demaray et al. (2003) examined ADHD training, referral patterns, and assessment practices of school psychologists who were NASP members. Of the 1000 school psychologists surveyed, 316 useable surveys were returned. The purpose of the study was to collect information regarding school psychologists' training in the assessment of ADHD, caseloads and referral patterns for children with ADHD, and specific instruments used in the assessment of ADHD. The survey was composed of 37 questions. There were seven questions seeking demographic information. There were six questions regarding training in ADHD assessments, five questions regarding caseloads and referral patterns, and 17 questions regarding assessment practices. There were two questions regarding treatment of ADHD, but the results were not included in the article. The results indicated that 88% of school psychologists reported being well-trained in assessment and treatment of ADHD. All of the school psychologists surveyed reported that they perform ADHD assessments with an average of 17 referrals per year. The results revealed that school psychologists use multiple sources and methods in variety of settings. Rating scales, observations, and interviews were the most common methods used in the assessment of ADHD.

Of the school psychologists surveyed, 60.8% reported that they consider it appropriate for a school psychologist to make a diagnosis of ADHD, but only 31.6% affirmed that they do make a diagnosis of ADHD.

Cushman et al. (2004) examined beliefs about ADHD and ADHD diagnostic and intervention practices of school psychologists who were NASP members. Of the 400 school psychologists surveyed, 191 useable surveys were returned. The purpose of the study was to poll school psychologists on their attitudes and beliefs about the etiology of ADHD and sources of inattention, validity of the disorder, reliability of the diagnosis, and interventions. The survey was composed of three sections. The first section measured demographic information. The second section measured beliefs and attitudes regarding the validity and etiology of ADHD as a clinical diagnosis and the role of the school psychologist in assessing and treating children with ADHD. The third section measured beliefs about specific causes of ADHD. The results showed that the school psychologists surveyed believed that ADHD is a valid disorder and that it can be diagnosed accurately and reliably. They agreed that school psychologists play an important role in making the diagnosis. The respondents believed school psychologists play an important role in the treatment of children with ADHD especially through parent training and behavioral approaches.

Miller (2005) examined ADHD assessment and diagnostic practices of school psychologists who were NASP members. Of the 504 school psychologists surveyed, 227 useable surveys were returned. The purpose of the study was to collect information regarding school psychologists' assessment and diagnostic practices regarding ADHD. The survey included demographic information, referral characteristics, assessment, and diagnostic information. The results showed that school psychologists routinely provided ADHD assessments. Respondents reported that ADHD referrals were accurate approximately 65% of the time. Most of the respondents used the Wechsler Intelligence Scale for Children, the Behavior Assessment System for Children, the Conners' rating scales, and the Woodcock Johnson Tests of Achievement when assessing for ADHD. Forty-one percent of the respondents indicated that the rationale for their assessment usage was differential diagnosis.

Moore et al. (2005) examined the ADHD medication monitoring practices of school psychologists who were NASP members. Of the 700 school psychologists surveyed, 437 useable surveys were returned. The purpose of the study was to collect information regarding the medication monitoring practices of school psychologists as part of the treatment of ADHD. The survey measured four areas related to medication monitoring of school psychologists for children with ADHD. The initial section of

the survey collected demographic information. The other sections of the survey measured self-reported procedures for monitoring the effects of medication on ADHD, training in medication monitoring techniques, perceived effectiveness, acceptability, and feasibility of medication monitoring techniques, and perceived facilitators and barriers to medication monitoring. The respondents noted that ADHD medication monitoring was an appropriate professional activity for school psychologists and 54.5% of the respondents were monitoring medication for children with ADHD. The respondents indicated that 58.1% of them received no formal training in monitoring medications. The authors maintained that training appears to be a critical determinant in medication monitoring and time was the most significant barrier to monitoring in schools.

Koonce (2007) examined the ADHD assessment practices of school psychologists who were NASP members. Of the 500 school psychologists surveyed, 246 useable surveys were returned. The purpose of the study was to collect information regarding school psychologists' assessment practices of children with ADHD using a case study. The survey was four pages and included 28 items broken down into two sections. The first section of the survey collected demographic information, time spent performing various activities, ages of children for whom assessments are conducted,

and percentage and frequency of referrals for ADHD. The second section of the survey provided a brief case scenario in which the respondents had to rate the frequency they would use assessments within the domains of intelligence, perceptual and perceptual motor, adaptive behavior, academic achievement, informal techniques, behavioral observations, personality, psychopathology, and social-emotional, neuropsychological and continuous performance, memory, and cancelation tasks. The results established the school psychologists surveyed performed between 31 and 70 evaluations a year. The results reflected that the school psychologists' ADHD assessment practices follow a multiinformant, multimethod, and multisetting assessment. They used a combination of interviews, observations, rating scales, and psychological, educational, visual-motor, neuropsychological, and projective assessments. Ninety-two percent of the respondents reported that using traditional psychological assessments were an important part of the ADHD assessment battery. Individually administered assessments were used 51% to 79% of the time.

The following studies have surveyed ADHD training, assessment practices, knowledge of ADHD, practices in general, attitudes, and medication monitoring practices. The studies included school psychologists as part of the sample along with various other professionals. Few studies surveyed both the

assessment and intervention practices in detail and some are becoming outdated.

Ullman and Doherty (1984) conducted a study that had 74 participants review hypothetical cases regarding hyperactive children. The participants included 22 clinical and school psychologists, 15 pediatricians and child psychiatrists, 22 general and special education educators, and 15 mental health professionals. The participants were asked to determine the presence or absence of ADHD based on cues. The cues included information such as referral history, behavior ratings, and measures of attention and hyperactivity. The results determined that the participants were not reliable when agreeing on a diagnosis of hyperactivity in comparison to their own previous diagnosis and the diagnosis of other professionals. The authors concluded that the various professionals varied in the cues used, the weight given to cues, and the diagnosis decision.

Rosenberg and Beck (1986) examined the diagnostic practices of 1000 clinical and school psychologists. The participants were randomly selected from American Psychological Association (APA) and NASP memberships. Of the 1000 participants surveyed, 308 useable surveys were returned. The survey asked the psychologists to identify the assessment instruments they would use in evaluating a hypothetical 7-year-old child for hyperactivity. The authors indicated that clinical

psychologists returned a greater number of surveys than school psychologists. Clinical psychologists had also obtained their doctoral degrees more often than school psychologists. The results showed that most psychologists reported using interviews, behavioral observations, intelligence assessments, and achievement assessments. Rating scales were used approximately 66% less frequently than interviews, behavioral observations, and standardized tests according to both clinical and school psychologists surveyed. Approximately 24% of the participants indicated that they would use measures of attention and impulsivity. More clinical psychologists reported to use neuropsychological assessments and clinical assessment of attention and impulsivity than school psychologists.

Hennigen (1997) examined the clinical assessment practices of 600 neuropsychologists, child psychologists, school psychologists, pediatricians, psychiatrists, and neurologists. The participants were randomly selected using national databases. Of the 600 participants surveyed, 187 useable surveys were returned. The survey asked the participants to provide demographic information and specific assessment methods and instrument usage. Approximately 88% of psychologists reported using child interviews, 89% used parent interviews, and 57% used teacher interviews. Child psychologists noted that they used parent interviews more frequently than school

psychologists. However, school psychologists used teacher interviews more frequently. Behavior ratings were used 77% to 80% of the time by psychologists surveyed. Behavioral observations were used 89% of the time. Approximately 72% of psychologists reported that they use an assessment of academic achievement. Measures of attention were used by 64% of psychologists surveyed.

Handler (2000) examined ADHD assessment practices of clinical, counseling, and school psychologists. The participants were randomly selected from APA and NASP memberships. Of the 1022 participants surveyed, 258 useable surveys were returned. The purpose of the study was to determine how frequently psychologists reported using various assessment methods when evaluating children for ADHD, what differences exist between groups of psychologists, what demographic characteristics influence reported practices, and how reported practices compare to best practices. The survey asked the psychologists to complete demographic information and answer questions regarding their assessment and diagnostic practices regarding ADHD. The author asserted that the respondents frequently used interviews, information about school behaviors, rating scales, and observations. School and clinical psychologists reported using rating scales more often than counseling psychologists. Approximately 61% of the respondents

indicated that they frequently or very often adhere to the DSM criteria when evaluating children for ADHD. Only 15% of respondents reported using multiple methods to assess for ADHD. The author concluded that there is a disparity between actual practice and best practice when evaluating for ADHD. In addition, the diagnosis of ADHD appeared to be influenced by the particular type of psychologist who is doing the evaluation.

Chang (2001) examined the ADHD assessment practices of family physicians, pediatricians, neurologists, psychiatrists, psychologists, and school psychologists in the state of Illinois. The participants were randomly selected from a CD-Rom database, membership lists of the Illinois Psychological Association, and membership lists of the Illinois School Psychologists Association. Of the 2917 participants surveyed, 379 useable surveys were returned. Because of a poor return rate, neurologists had to be excluded from the analysis. The survey asked the participants to answer 20 questions regarding their ADHD assessment practices. The results showed disparity across professions regarding the length of an evaluation, methods used, and usage frequency of those methods. The results of the study suggested a concern with the thoroughness of ADHD evaluations and diagnosis.

The studies reviewed are not specific enough or detailed enough to examine the school psychologist's role in assessment and intervention of ADHD. There is a need to clearly define the role of the school psychologist in assessing and intervening for ADHD.

Summary

In this chapter, the literature that directed this study was reviewed and discussed. ADHD has a long, varied history and has experienced many changes over the decades. The causes of ADHD are now believed to be a result of neurological and genetic factors. Environmental factors appear to have an effect on ADHD, but they cannot be considered a cause. ADHD is a common problem and one that can have a detrimental effect on a child. It is estimated that ADHD occurs in three to seven percent of children. The prevalence estimates can differ depending on whether the studies focus on using rating scales, reviewing school records, or using clinical diagnostic criteria. In addition, this chapter looked at the influence of sex, geographic location, SES, and ethnicity on prevalence rates. Oftentimes, the detrimental effects of ADHD are observed while the child is in school.

This chapter reviewed the history of special education and Section 504 services as related to ADHD and the schools' responsibilities. The symptoms and associated symptoms of ADHD

were presented and the most commonly used methods in assessing ADHD were discussed. Even though there is no standard battery to assess for ADHD, the recommended assessment practices for ADHD were covered. Children with ADHD spend a good deal of their time in school and will likely need to receive interventions and accommodations in school. The recommended intervention practices for ADHD were presented.

Finally, this chapter revealed the history of the previous studies that examined school psychologists' practices. Previous studies have examined the general assessment practices of school psychologists. There have been studies that examined the school psychologists' practices regarding ADHD and there have been studies that included school psychologists as part of the sample along with various other professionals such as clinical psychologists or physicians. In the next chapter, the methodology for investigating school psychologists' assessment and intervention practices for ADHD will be described.

CHAPTER III

METHODOLOGY

This chapter describes the methodology used to investigate the research questions. The following sections explain the research design, population, sample, measurement, procedures, power and sample size, and statistical analyses.

Design

The study was a quantitative, non-experimental research design that used a survey method to collect information regarding the practices of school psychologists regarding assessment and intervention in ADHD. Descriptive research methodology was employed to determine the school psychologists' assessment and intervention practices. Pearson *r* and Spearman *rho c*orrelational coefficients were utilized to investigate relationships between various demographic variables, ADHD assessment, diagnostic, and intervention practices. Binary logistic regression was used to determine if any variables were able to predict assessment, diagnostic, or intervention practices for ADHD. Finally, Mann-Whitney *U* tests of statistical significance were applied to investigate differences between school psychologists' ADHD assessment, diagnostic, and intervention practices. A complete path diagram of the research project can be seen in Figure 3.

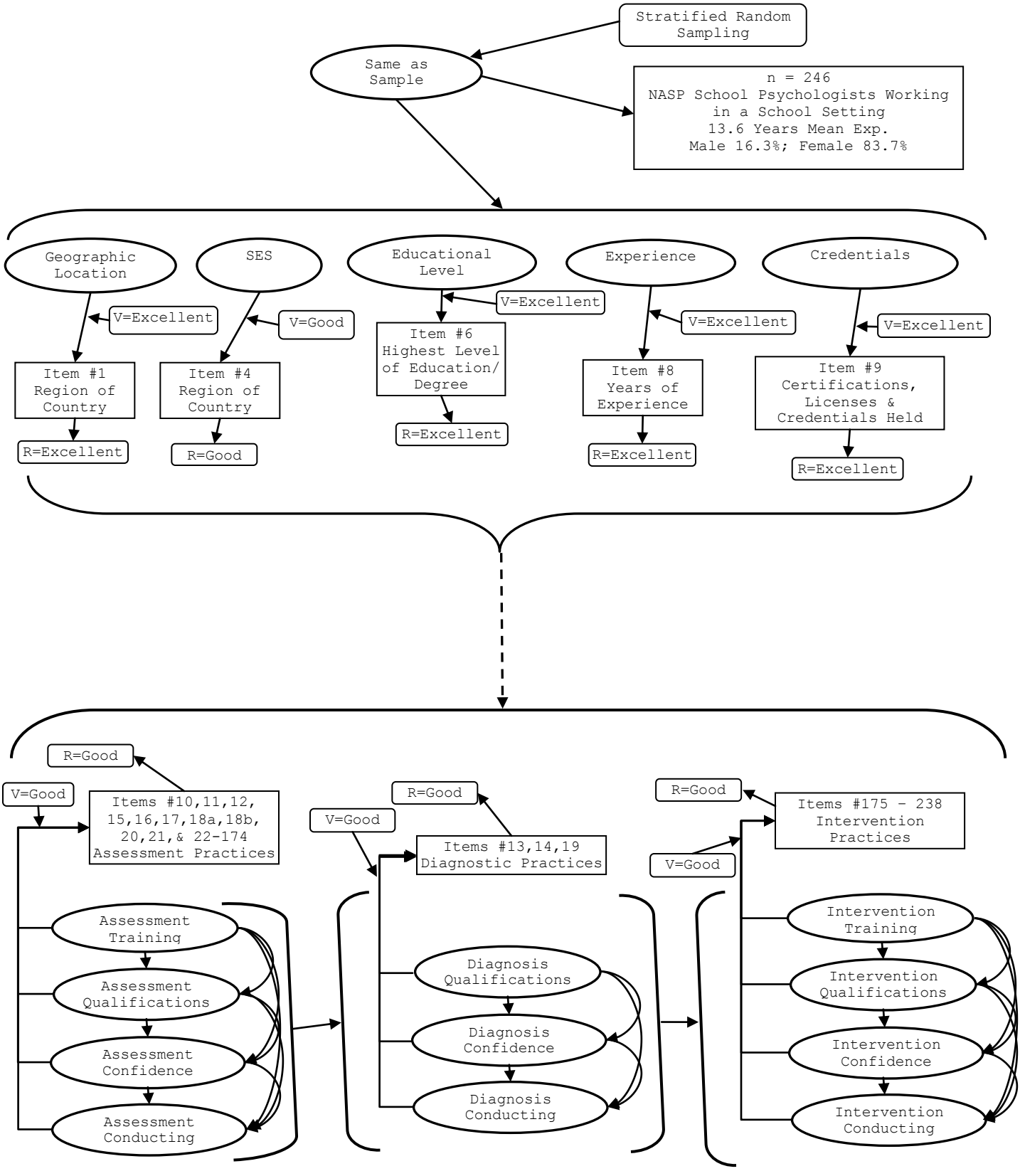

Figure 3. Complete path diagram.

Population

The population studied was school psychologists who are employed as practitioners in a school setting. The school psychologists are regular members of the National Association of School Psychologists (NASP). NASP is a non-profit association that represents school psychology and supports school psychologists in enhancing the mental health and learning of all children. It has over 25,000 members from across the United States and other countries. According to the most recent NASP Membership Survey in 2004-2005, 80.4% of the members identified themselves as being practicing school psychologists (Curtis et al., 2008). The participants responded that 83.1% of the members worked in a public school, 5.2% worked in a private school, and 2.1% worked in a faith-based school as their primary employment setting. Of the members who reported race, 92.6% described themselves as being Caucasian. Three percent described themselves as being Hispanic, 1.9% described themselves as being African-American, 0.9% described themselves as being Asian/Pacific Islanders, 0.8% described themselves as being Native American/Alaskan Native, and 0.8% described themselves as being of another racial background. Of the practitioner members who answered about sex, 77% were female and 23% were male. The mean age of practicing school psychologists was 45.2 years and the mean level of experience was 14.0 years.

Of the practitioner members who indicated their highest professional degree, 35.7% held a Master's level degree, 39.9% held a Specialist level degree, and 24.4% held a Doctoral level degree. Of the practitioner members who provided their credentials, 93.8% held a certification while 30.6% held licensure (Curtis et al., 2008).

Sample

The random sample was derived from regular NASP members who answered that their primary employment position is a practitioner working in a school setting in the United States as a school psychologist. The marketing/mailing list company, InFocus, was used to purchase the random sample generation of school psychologists and subsequent multiple mailing lists. InFocus is the NASP approved marketing/mailing list company that is used for research requests. The random sample was comprised of 500 members selected from the four geographic regions defined by NASP. The four geographic regions as defined by NASP are as follows:

West (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming)

North Central (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, and Wisconsin)

Northeast (Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Puerto Rico, Rhode Island, and Vermont)

South (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia, and West Virginia).

Measurement

Instrumentation

Participants were asked to complete and return the self-administered survey titled Assessment and Intervention Practices for ADHD: A National Survey of School Psychologists. The survey was carefully designed and developed by the researcher to take into account a variety of elements of good research and survey design (Grooves et al., 2004). Survey questions were created and revised meeting several content standards, cognitive standards, and usability standards. Content standards involve making sure that the questions are measuring what is expected. To help ensure content standards were being met, the survey questions were developed using previous studies, content-specific references, an expert review of the survey, and a pilot study. In adhering to cognitive standards, the questions were created with attention to the respondent's understanding of the questions and his or her willingness and ability to answer the questions.

Usability standards looked at creating a survey that was easy to complete and accomplished what it is intended to do (Grooves et al.).

When creating the self-administered questions, several specific guidelines were followed to ensure appropriateness of the survey questions. The survey questions were created to adhere to standards for format and design, grammar, using specific quantifiers, proper instructions, and suitable navigation directions. Based upon survey research recommendations, the survey contained mostly closed-ended questions with an opportunity for open-ended responses so as not to preclude any possible responses that may have been inadvertently omitted. The length of the survey included a sufficient number of items while keeping administration time under 30 minutes (Buckingham & Saunders, 2004; Converse & Presser, 1986; Fink, 2003a; Fink, 2003b; Fowler, 1995; Fowler, 2008; Grooves et al., 2004).

Questions regarding school psychologists' practices in ADHD assessment and intervention were designed based on research and information in the field (Barkley, 1998; Barkley, 2006; Conners, 2006; DuPaul & Stoner, 2003; DuPaul, Stoner, & O'Reilly, 2002; DuPaul, Stoner, & O'Reilly, 2008; Hoff et al., 2002; Power & Mautone, 2008; Thomas & Grimes, 2002; Thomas & Grimes, 2008; Tobin, Schneider, Reck, Landau, 2008). Surveys previously

conducted with school psychologists as part of the respondents were reviewed to help develop the content and format of questions relating to the demographic information, ADHD assessment practices, and ADHD intervention practices (Chang, 2001; Demaray et al., 2003; Handler, 2000; Hennigen, 1997; Koonce, 2007; Miller, 2005; Moore et al., 2005; Smith, 1999). Finally, the most recently published, standardized norm-referenced instruments used in the survey were collected by reviewing all major publishers.

Content validity of the survey was established through an expert panel reviewing the survey regarding its content and by using a pilot study on a small, convenient sample. To help establish reliability, the survey was administered a second time to the pilot study sample. Reliability was calculated using the method of percent of agreement between items. Both exact match and close match percentages were calculated (Buckingham & Saunders, 2004; Converse & Presser, 1986).

Expert Review

In order to establish validity of the survey, it was reviewed by experts in the area of ADHD assessment and intervention practices. Russell Barkley and George DuPaul were contacted and agreed to review the survey instrument. Russell Barkley is a recognized authority on ADHD in children and adults. He has specialized in the study of ADHD for more than

30 years. He is currently a Clinical Professor of Psychiatry at the Medical College of Wisconsin and a Research Professor in the Department of Psychiatry at the SUNY Upstate Medical University in Syracuse, New York. He received his Ph.D. in Clinical Psychology from the Bowling Green State University in 1977. Russell Barkley holds a diplomate in three specialties: clinical psychology, clinical neuropsychology, and clinical child and adolescent psychology. He is a clinical scientist, educator, and practitioner who has authored or coedited more than 17 books and published more than 200 scientific papers and book chapters related to ADHD and its assessment and treatment.

George DuPaul is a Professor and Chairperson of School Psychology at Lehigh University. He received his Ph.D. in School Psychology from the University of Rhode Island in 1985. He has extensive experience providing clinical services to children with ADHD and their families as well as consulting with a variety of school districts regarding the management of students with ADHD. He has been an author or coauthor on over 140 journal articles and book chapters related to ADHD. He has published two books and two videos on the assessment and intervention of ADHD.

Upon review of the questionnaire, Russell Barkley commented that the survey appeared to be very comprehensive. He expressed a concern about the length of the survey possibly detracting

from the number of respondents that would participate in the survey. Otherwise, his response to the survey was positive. George DuPaul noted that the survey appeared to include the most important and relevant areas related to ADHD assessment and intervention practices. Further, he indicated that the items in the survey were clear and they appeared to provide comprehensive coverage of the content. He did not have any further suggestions for the survey. The survey was adapted to include any suggestions made prior to its distribution.

Pilot Study

A pilot study was conducted on the Assessment and Intervention Practices for ADHD: A National Survey of School Psychologists to help establish reliability and validity. A pilot study of the survey was administered to 23 school psychologists practicing in a school setting within northeastern Pennsylvania who were convenient to the author. Twenty-one of the 23 school psychologists surveyed completed the survey for a return rate of 91%. In addition to receiving the sample survey, the respondents were asked to provide feedback and critique to the items, design, and instructions in order to improve the survey (Buckingham & Saunders, 2004; Fink, 2003a; Fink, 2003b; Grooves, et al., 2004). In addition, the respondents were asked the length of time it took to complete the survey. The respondents were given specific directions to examine the survey

and include additional information for improvements as needed. They were also directed to identify any redundant, poor, or confusing questions. The respondents were instructed to identify any poorly defined or explained items. Further, they were instructed to identify any poorly written or confusing directions. The respondents were also asked to examine the design and content of the survey. Finally, they were given an opportunity for an open-ended response to include any comments or feedback that may not have been covered. Some of the suggestions included defining "training," adding assessment instruments, clarifying directions, clarifying "specialist degree," and clarifying two of the open-ended questions. The survey was then adapted to integrate suggestions made from the participants. All of the school psychologists participating in the pilot study completed the survey within 10-15 minutes.

Test-Retest Reliability

In order to assess the test-retest reliability of the survey, two identical surveys were administered to the pilot study group approximately two months apart. The second survey was only able to be administered to 21 of the 23 original participants of the pilot study. Of the 21 test-retest participants, 18 of the school psychologists completed the survey a second time for a return rate of 86%.

Using a percentage of agreement method, each of the original responses and those of the reliability sample were compared. The survey items were compared for an exact match and close match percentage of agreement. An exact match occurred when a participants' response was exactly the same on both completed surveys. A close match occurred when a participants' response was within one quantifier of their answer for the item on both completed surveys. The overall exact match percentage of agreement was 94.4%. The overall exact match percentage of agreement was calculated on an individual basis and the 18 participants' percentage of agreement ranged from .79 to .97 for the surveys completed. The exact match percentage of agreement was also calculated on an individual survey item basis. The answers to the items of the survey ranged from .77 to 1.0 for percentage of agreement. The overall close match percentage of agreement was 98.3%. The overall close match percentage of agreement was analyzed on an individual basis and the 18 participants' percentage of agreement ranged from .94 to 1.0 for the surveys completed. The close match percentage of agreement was also analyzed on an individual survey item basis. The answers to the items of the survey ranged from .88 to 1.0 for percentage of agreement. The overall level of reliability and the individual survey item reliability was deemed to be very good to excellent.

Survey

The survey is comprised of three sections, Section I: Demographic Information, Section II: ADHD Assessment Information, and Section III: ADHD Intervention Information. A copy of the survey can be found in Appendix A. In Section I, items one through nine asked the participants to provide demographic data that included geographic location, primary employment setting, characteristics of community in which they work, socioeconomic status of the community in which they work, sex, highest degree earned, year of highest degree earned, years of experience, and credentials.

In Section II, the respondents were asked to complete various information regarding ADHD assessment practices. In items 10 through 17, they were asked questions regarding their training in ADHD assessment, qualifications in assessing for ADHD, confidence in ability to assess for ADHD, qualifications to diagnose ADHD, confidence in ability to diagnose ADHD, and purpose of ADHD assessment. Respondents used a five-point Likert scale to rate how much they agreed with the statements presented. The respondents chose from the quantifiers strongly agree, agree, neutral, disagree, and strongly disagree. In items 18a through 21, the respondents were asked whether they conduct assessments for ADHD, whether they refer to an outside professional for ADHD assessment, whether they provide a

diagnosis of ADHD, the number of ADHD assessments they conduct, and what percentage of their caseload consists of ADHD assessments. For those questions, respondents chose between a yes or no response and open-ended responses. The final and major portion of Section II evaluated specific ADHD assessment practices within the subcategories of general, interview methods, observational methods, behavior rating scales, ADHD rating scales, continuous performance assessments, cognition/intelligence assessments, achievement assessments, neuropsychological assessments, memory and learning assessments, adaptive behavior assessments, and projective/personality assessments. For items 22 through 174, the respondents used a five-point Likert scale to rate frequency of usage of specific assessment instruments. The respondents chose from the quantifiers always, often, sometimes, seldom, and never.

In Section III, the respondents were asked to complete various information regarding intervention practices. In items 175 through 177, the respondents were questioned regarding their training, qualifications, and confidence in providing interventions for ADHD. Respondents used a five-point Likert scale to rate how much they agreed with the statements presented. The respondents chose from the quantifiers strongly agree, agree, neutral, disagree, and strongly disagree. In items 178a through 180, the respondents were asked whether they

provide ADHD interventions, whether they refer to an outside professional for ADHD interventions, the number of ADHD interventions they provide, and what percentage of their caseload consists of ADHD interventions. For those questions, respondents chose between a yes or no response and open-ended responses. The final and major portion of Section III evaluated specific ADHD intervention practices. In items 181 through 238, respondents used a five-point Likert scale to rate frequency of usage of specific ADHD interventions. The respondents chose from the quantifiers always, often, sometimes, seldom, and never.

Procedures

The survey packets were distributed by and returned through the United States Postal Service. The packets were mailed to 500 randomly selected regular NASP members who identified their primary employment position is a practitioner working in a school setting in the United States as a school psychologist. The level of reading and writing skills typically exhibited by the participants supported the appropriateness of a self-administered questionnaire. Each packet included an initial cover letter, the Assessment and Intervention Practices for ADHD: A National Survey of School Psychologists, and a stamped, self-addressed return envelope. A numeric code was placed on each survey to identify which subjects had returned surveys in

order to send reminders to those who had not returned the surveys. A copy of the survey can be found in Appendix A.

The initial cover letter briefly explained the purpose of the study and the need for the study. There was a statement of assurance that participation is voluntary, that confidentiality will be maintained, and that satisfaction of Indiana University of Pennsylvania's Institutional Review Board regarding the protection of human subjects has been met. In addition, there was a statement about the amount of time needed to complete the survey and an incentive program for timely response. A copy of the initial cover letter can be found in Appendix B. The initial cover letter and survey were mailed on May 1, 2010, with a requested return date of May 14, 2010. A follow-up postcard was mailed on May 14, 2010, to thank for participation or to remind to complete and return the survey. Information was provided on how to receive a replacement survey packet if needed. A copy of the follow-up postcard can be found in Appendix C.

On June 1, 2010, a personalized, follow-up cover letter along with another copy of the survey was mailed to the subjects as a reminder to complete and return the survey. A copy of the personalized, follow-up cover letter can be found in Appendix D. On June 15, 2010, a personalized, second follow-up cover letter was mailed along with another copy of the survey. A copy of the

personalized, second follow-up cover letter can be found in Appendix E. July 1, 2010, was the last day completed surveys were accepted. On August 2, 2010, a random drawing was conducted awarding five timely responders. The five drawing winners were mailed the prize of a $50.00 gift card along with the gift card winner's cover letter explaining the process. A copy of the gift card winner's cover letter can be found in Appendix H. Finally, in August, September, and October 2010, the data entry and various statistical analyses were completed. In accordance with federal regulations, all data will be maintained for 3 years from the date of project completion.

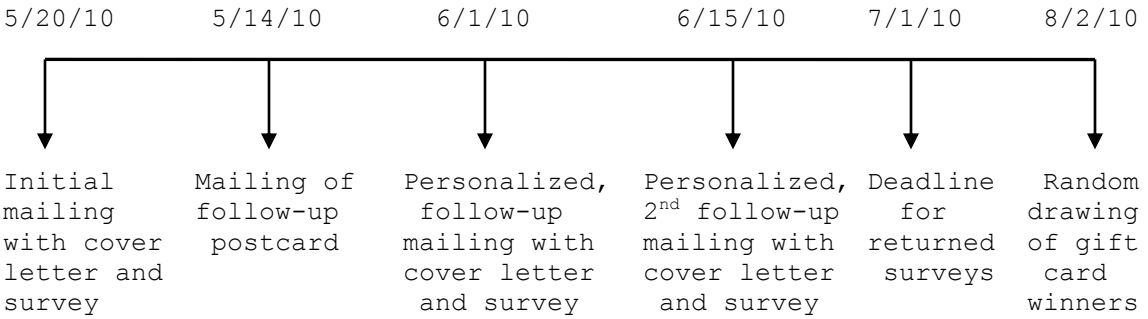

Figure 4. Timeline for the mailings included in this study.

Power and Sample Size

Power is the probability that the results of a statistical test will lead to rejection of the null hypothesis when it is false. Power is determined by the alpha level, the size of the effect, and the sample size. For this study, the alpha level was set at a traditional level of significance of .05. When

there is no other basis for setting the desired power level, a value of .80 may be used. A variation is to specify a desired level of power such as .80 and then estimate the minimum sample size needed to obtain it (Cohen, 1988).

Sample size refers to the number of respondents who should be surveyed in order to obtain precise and reliable findings. Typically, the goal is to have larger sample sizes, but as the sample size increases so does the cost of study and the improvement in the study may be minimal. It was difficult to estimate an appropriate effect size due to the lack of previous research. A sample size goal was created by following Fowler's advice that precision increases up to a sample size of 150-200, but after that level, the gains become modest. A goal sample size of 200 was set and a return rate of 40-50% was needed in order to obtain an adequate sample size (Fowler, 2008).

Statistical Analyses

The data returned from the surveys were coded and analyzed using Microsoft Excel and the Statistical Package for Social Sciences (SPSS) for Windows, Student Version 19.0. The research questions, hypotheses, corresponding survey items, statistical procedures, and assumptions are presented in Table 1. The research questions, corresponding survey items, and proposed statistical analyses for each research question were as follows:

Research Question 1: What percentage of the school psychologists surveyed conduct assessments for ADHD, provide a diagnosis of ADHD, refer to an outside professional for an ADHD assessment, provide interventions for ADHD, and refer to an outside professional for interventions with ADHD? Survey items 18a, 18b, 19, 178a, and 178b were used to answer this question. Descriptive statistics such as frequencies, percents, means, and standard deviations were calculated to analyze the data for this question.

Research Question 2: How frequently are the school psychologists surveyed assessing for ADHD and what percentage of their caseload is comprised of ADHD assessments? Survey items 20 and 21 were used to answer this question. Descriptive statistics such as frequencies, percents, means, and standard deviations were calculated to analyze the data for this question.

Research Question 3: How frequently are the school psychologists surveyed providing interventions for ADHD and what percentage of their caseload is comprised of providing interventions for ADHD? Survey items 179 and 180 were used to answer this question. Descriptive statistics such as frequencies, percents, means, and standard deviations were calculated to analyze the data for this question.

Table 1

Research Questions, Hypotheses, Variables, Statistical Analyses, and Statistical Assumptions

Research Questions	Hypotheses	Variables	Statistic	Assumptions
1. What percentage of school psychologists surveyed conduct assessments for ADHD, provide a diagnosis of ADHD, refer to an outside professional for an ADHD assessment, provide interventions for ADHD, and refer to an outside professional for interventions with ADHD?	The majority of school psychologists would report conducting some form of ADHD assessments. The minority would report providing a diagnosis of ADHD. Determining the percentage of school psychologists that provide interventions and refer to an outside professional for ADHD assessments and interventions was an exploratory question with no hypotheses (Demaray et al., 2003; Miller, 2005; Moore et al., 2005; Smith, 1999).	Survey items # 18a, 18b, 19, 178a, 178b	Descriptive (frequency, percentages, mean, & SD)	Interval or ratio data
2. How frequently are the school psychologists surveyed assessing for ADHD and what percentage of their caseload is comprised of ADHD assessments?	This was an exploratory question with no hypothesis (Demaray et al., 2003).	Survey items # 20, 21	Descriptive	Interval or ratio data

(table continues)

Research Questions	Hypotheses	Variables	Statistic	Assumptions
3. How frequently are the school psychologists surveyed providing interventions for ADHD and what percentage of their caseload is comprised of providing interventions for ADHD?	This was an exploratory question with no hypothesis.	Survey items # 179, 180	Descriptive	Interval or ratio data
4. What is the level of agreement that the school psychologists surveyed indicate for statements regarding their qualifications in assessing for ADHD, diagnosing ADHD, and providing interventions for ADHD?	The majority of school psychologists would report being qualified to assess for ADHD, but less would report being qualified to diagnose ADHD. Determining how often school psychologists indicate they are qualified to provide interventions for ADHD was an exploratory question with no hypothesis (Demaray et al., 2003; Miller, 2005; Smith, 1999).	Survey items # 11, 13, 176	Descriptive	Interval or ratio data

(table continues)

Research Questions	Hypotheses	Variables	Statistic	Assumptions
5. What is the level of confidence of the school psychologists surveyed regarding their ability to assess, to diagnose, and to provide interventions for ADHD?	The majority of school psychologists would be confident in their ability to assess and provide interventions for ADHD, but less confident in their ability to diagnose ADHD (Smith, 1999).	Survey items # 12, 14, 177	Descriptive	Interval or ratio data
6. When assessing for ADHD, how frequently do the school psychologists surveyed administer the various chosen assessment instruments?	This was an exploratory question with no hypothesis (Demaray et al., 2003; Koonce, 2007; Miller, 2005; Smith, 1999).	Survey items # 22 – 174	Descriptive	Interval or ratio data
7. When providing interventions for ADHD, how frequently do the school psychologists surveyed provide the Various identified interventions for ADHD?	This was an exploratory question with no hypothesis (Moore et al., 2005; Smith, 1999).	Survey items # 181 – 238	Descriptive	Interval or ratio data

(table continues)

Research Questions	Hypotheses	Variables	Statistic	Assumptions
8. What is the level of agreement that the school psychologists surveyed indicate for statements regarding their qualifications in assessing for ADHD to determine if the disorder exists, to determine the need and appropriateness of special education or Section 504 services, and to develop appropriate interventions?	This was an exploratory question with no hypothesis.	Survey items # 15, 16, 17	Descriptive	Interval or ratio data
9. What are the beliefs of the school psychologists surveyed regarding their training in ADHD assessment and in providing ADHD interventions?	The majority of school psychologists would report being well-trained in assessment and intervention of ADHD (Demaray et al., 2003; Smith, 1999).	Survey items # 10, 175	Descriptive	Interval or ratio data
10. Is there an association between the demographic variables, assessment variables, diagnostic variables, and intervention variables?	This was an exploratory question with no hypothesis (Demaray et al., 2003; Koonce, 2007; Smith, 1999).	Survey items # 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18a, 19, 175, 176, 177, 178a	Pearson *r* and Spearman *rho*	1. Interval or ratio data 2. Normality 3. Equal SD 4. Linearity and 1. Ordinal data 2. Linearity

(table continues)

Research Questions	Hypotheses	Variables	Statistic	Assumptions
11. Are there certain demographic, assessment, diagnostic, and intervention variables that are associated with the likelihood that the school psychologists surveyed conduct ADHD assessments, diagnose ADHD, and provide ADHD interventions?	This was an exploratory question with no hypothesis.	Survey items # 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18a, 19, 175, 176, 177, 178a	Binary logistic regression	1. Interval or ratio data 2. Linear relationship 3. Equal SD 4. Non-multi co-linearity
12. Is there a difference between the school psychologists surveyed who indicate that they conduct ADHD assessments and school psychologists who indicate that they do not conduct ADHD assessments for demographic variables, assessment variables, and diagnostic variables?	This was an exploratory question with no hypothesis.	Survey items # 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18a	Mann-Whitney *U*	1. Ordinal data 2. Independent groups
13. Is there a difference between the school psychologists surveyed who indicate that they provide an ADHD diagnosis and school psychologists who indicate that they do not provide an ADHD diagnosis for demographic variables, assessment variables, and diagnostic variables?	This was an exploratory question with no hypothesis.	Survey items # 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19	Mann-Whitney *U*	1. Ordinal data 2. Independent groups

(table continues)

Research Questions	Hypotheses	Variables	Statistic	Assumptions
14. Is there a difference between the school psychologists surveyed who indicate that they provide interventions for ADHD and school psychologists who indicate that they do not provide interventions for ADHD for demographic variables, assessment variables, diagnostic variables, and intervention variables?	This was an exploratory question with no hypothesis.	Survey items # 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 175, 176, 177, 178a	Mann-Whitney *U*	1. Ordinal data 2. Independent groups

Research Question 4: What is the level of agreement that the school psychologists surveyed indicate for statements regarding their qualifications in assessing for ADHD, diagnosing ADHD, and providing interventions for ADHD? Survey items 11, 13, and 176 were used to answer this question. Descriptive statistics such as frequencies, percents, means, and standard deviations were calculated to analyze the data for this question.

Research Question 5: What is the level of confidence of the school psychologists surveyed regarding their ability to assess, to diagnose, and to provide interventions for ADHD? Survey items 12, 14, and 177 were used to answer this question. Descriptive statistics such as frequencies, percents, means, and standard deviations were calculated to analyze the data for this question.

Research Question 6: When assessing for ADHD, how frequently do the school psychologists surveyed administer the various chosen assessment instruments? Survey items 22 through 174 were used to answer this question. Descriptive statistics such as frequencies, percents, means, and standard deviations were calculated to analyze the data for this question.

Research Question 7: When providing interventions for ADHD, how frequently do the school psychologists surveyed provide the various identified interventions for ADHD? Survey

items 181 through 238 were used to answer this question. Descriptive statistics such as frequencies, percents, means, and standard deviations were calculated to analyze the data for this question.

Research Question 8: What is the level of agreement that the school psychologists surveyed indicate for statements regarding their qualifications in assessing for ADHD to determine if the disorder exists, to determine the need and appropriateness of special education or Section 504 services, and to develop appropriate interventions? Survey items 15, 16, and 17 were used to answer this question. Descriptive statistics such as frequencies, percents, means, and standard deviations were calculated to analyze the data for this question.

Research Question 9: What are the beliefs of the school psychologists surveyed regarding their training in ADHD assessment and in providing ADHD interventions? Survey items 10 and 175 were used to answer this question. Descriptive statistics such as frequencies, percents, means, and standard deviations were calculated to analyze the data for this question.

Research Question 10: Is there an association between the demographic variables, assessment variables, diagnostic variables, and intervention variables? The demographic

variables included the surveyed school psychologists' geographic location, community setting, SES, sex, level of education, years of experience, and credentials. The assessment variables used were the surveyed school psychologists' beliefs of being well-trained in ADHD assessments, level of confidence in ability to assess for ADHD, beliefs of being qualified to assess for ADHD in general, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, beliefs of being qualified to assess for ADHD to develop interventions, and indication of conducting ADHD assessments. The diagnostic variables used were the surveyed school psychologists' beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, and indication of providing a diagnosis of ADHD. The intervention variables included the surveyed school psychologists' beliefs of being well-trained in ADHD interventions, beliefs of being qualified to provide ADHD interventions, level of confidence in ability to provide ADHD interventions, and indication of providing ADHD interventions. Survey items 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18a, 19, 175, 176, 177, and 178a were used to answer this question. Associations were calculated using Pearson *r* and Spearman *rho* correlation coefficients to analyze the data for

this question. Assumptions for Pearson *r* and Spearman *rho* were met in order to analyze the data.

Research Question 11: Are there certain demographic, assessment, diagnostic, and intervention variables that are associated with the likelihood that the school psychologists surveyed conduct ADHD assessments, diagnose ADHD, and provide ADHD interventions? The demographic variables, assessment variables, diagnostic variables, and intervention variables used in this research question are the same as in research question 10. Survey items 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18a, 19, 175, 176, 177, and 178a were used to answer this question. These survey items were analyzed using binary logistic regression. Assumptions for binary logistic regression were met in order to analyze the data.

Research Question 12: Is there a difference between the school psychologists surveyed who indicate that they conduct ADHD assessments and school psychologists who indicate that they do not conduct ADHD assessments for the variables of geographic location, community setting, SES, sex, level of education, years of experience, credentials, beliefs of being well-trained in ADHD assessments, beliefs of being qualified to conduct ADHD assessments, level of confidence in ability to conduct ADHD assessments, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to

assess for ADHD to determine services, beliefs of being qualified to assess for ADHD to develop interventions, beliefs of being qualified to diagnose ADHD, and level of confidence in ability to diagnose ADHD? Survey items 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, and 18a were used to answer this question. Differences were calculated using Mann-Whitney *U* tests to analyze the data for this question. Assumptions for Mann-Whitney *U* tests were met in order to analyze the data.

Research Question 13: Is there a difference between the school psychologists surveyed who indicate that they provide an ADHD diagnosis and school psychologists who indicate that they do not provide an ADHD diagnosis for the variables of geographic location, community setting, SES, sex, level of education, years of experience, credentials, beliefs of being well-trained in ADHD assessments, beliefs of being qualified to conduct ADHD assessments, level of confidence in ability to conduct ADHD assessments, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, beliefs of being qualified to assess for ADHD to develop interventions, beliefs of being qualified to diagnose ADHD, and level of confidence in ability to diagnose ADHD? Survey items 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, and 19 were used to answer this question. Differences were calculated using Mann-Whitney *U*

tests to analyze the data for this question. Assumptions for Mann-Whitney *U* tests were met in order to analyze the data.

Research Question 14: Is there a difference between the school psychologists surveyed who indicate that they provide interventions for ADHD and school psychologists who indicate that they do not provide interventions for ADHD for the variables of geographic location, community setting, SES, sex, level of education, years of experience, credentials, beliefs of being well-trained in ADHD assessments, beliefs of being qualified to conduct ADHD assessments, level of confidence in ability to conduct ADHD assessments, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, beliefs of being qualified to assess for ADHD to develop interventions, beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, beliefs of being well-trained in ADHD interventions, beliefs of being qualified to provide ADHD interventions, and level of confidence in providing ADHD interventions? Survey items 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 175, 176, 177, and 178a were used to answer this question. Differences were calculated using Mann-Whitney *U* tests to analyze the data for this question. Assumptions for Mann-Whitney *U* tests were met in order to analyze the data.

Summary

The methodology for this study included a quantitative, non-experimental research design. A survey method was used to collect information regarding school psychologists' assessment and intervention practices for ADHD. The population was school psychologists who are regular NASP members that work in a school setting. Five hundred of the regular NASP members were randomly selected according to geographic location. The item details of the survey were presented. The survey was created following specific guidelines to ensure appropriateness. Validity and reliability for the survey were established through an expert review, a pilot study, and a test-retest procedure. The procedures for the survey distribution included an initial mailing, a follow-up postcard, a personalized, follow-up mailing, a second personalized, follow-up mailing, and a gift card winner mailing. The timeline for the study was described. The power and sample size were estimated. Using SPSS, descriptive statistics were calculated for research questions one through nine. For research question 10, Pearson *r* and Spearman *rho* correlation coefficients were calculated. Binary logistic regression was used to analyze research question 11. Finally, research questions 12, 13, and 14 explored differences using Mann-Whitney *U* tests. In the next chapter, the results of the study will be explored.

CHAPTER IV

RESULTS

This study examined the assessment and intervention practices of school psychologists regarding Attention Deficit Hyperactivity Disorder (ADHD). ADHD is a disorder in which the main diagnostic features include significant problems with inattention, hyperactivity, and impulsivity. The data analyses and the results of this study will be presented in this chapter. This chapter details the data collection procedures, demographic information, assessment and intervention practice information, and the statistical analyses utilized. The data collection procedures included the distribution of the survey, the return rates, and the follow-up mailings of the survey. The demographic information details the information collected from the respondents during Section I, Demographic Information of the survey. The assessment and intervention practice information describes the information collected during Section II, ADHD Assessment Information and Section III, ADHD Intervention Information of the survey. The statistical analyses utilized in the study will be described and the results of the research questions will be presented. Finally, the chapter concludes with a summary.

Return Rate

The data collection procedures entailed several steps. The first step involved the mailing of the initial packet to 500 randomly selected regular NASP members who identified that their primary position is a practitioner working in a school setting in the United States as a school psychologist. The initial packet included the initial cover letter, the Assessment and Intervention Practices for ADHD: A National Survey of School Psychologists, and a stamped, self-addressed return envelope. A follow-up postcard was mailed 14 days after the initial mailing to express appreciation for participation or to act as a reminder to complete and return the survey. Included in this mailing was information on how to receive a replacement survey packet if needed. The next step was the mailing of the personalized, follow-up cover letter along with another copy of the survey 30 days after the initial mailing. Finally, a personalized, second follow-up cover letter was mailed along with another copy of the survey 45 days after the initial mailing.

A total of 256 packets were returned and none of the packets mailed were ever returned undeliverable. This resulted in a response rate of 51.2%. Of those responses, three of the respondents indicated that their primary employment was in a university setting, three others indicated that their primary

employment was in a private practice setting, and one respondent indicated that their primary employment was in a hospital/medical setting. Those respondents were excluded from the surveys because their primary employment was not in a school setting. One of the respondents replied that they are unemployed and could not complete the survey. One respondent specified that they work in a County Office of Education and could not complete the survey. Finally, one respondent noted that they work in a non-traditional setting and could not participate in the study. Due to these exclusions, the total number of surveys available for analysis was 246, representing 49.2% of the original sample of 500 school psychologists and 96% of the returned surveys. Refer to Table 2 for an overview of the return rates for each step of the data collection.

Table 2

Survey Response Rate

Stage of Collection	US Mail	No Response	Total
Initial Packet	155	345	
Follow-up Postcard	27	318	
Follow-up Packet	55	263	
Second Follow-up Packet	19	244	
Total	256	244	500

Demographic Information

The demographic information of the 246 participants in this study is summarized in Table 3. The participants were asked to identify the geographic location where they work. Geographic location was represented by four regions of the United States. The four regions were West, North Central, Northeast, and South. Within geographic location, 20.3% (*n* = 50) of respondents checked West, 25.6% (*n* = 63) checked North Central, 30.5% (*n* = 75) checked Northeast, and 23.6% (*n* = 58) checked South for their region. The participants were asked to describe the community of their primary employment setting by using the categories of rural, suburban, or urban. For those descriptions, 21.1% (*n* = 52) specified rural, 52.8% (*n* = 130) specified suburban, and 26% (*n* = 64) specified urban. The participants were asked to describe the socioeconomic status (SES) of their primary employment setting. SES was represented by the participants indicating mostly lower SES, mostly middle SES, or mostly higher SES. Thirteen percent (*n* = 32) of participants identified mostly higher SES, 49.2% (*n* = 121) identified mostly middle SES, and 37.8% (*n* = 93) identified mostly lower SES.

Of the 246 participants, 83.7% (*n* = 206) were female and 16.3% (*n* = 40) were male. Eight and a half percent (*n* = 21) of school psychologists reported holding a Masters degree, 65.9% (*n*

= 162) reported holding a Specialists degree, and 25.6% (*n* = 63) reported holding a Doctoral degree. The majority of respondents in this study responded that they have between one and 10 years experience as a practicing school psychologist (52.5%, *n* = 128). Additionally, 23.4% (*n* = 57) of the respondents reported 11 to 20 years of experience, 18.4% (*n* = 45) reported 21 to 30 years of experience, and 5.7% (*n* = 14) reported 31 or more years of experience. The school psychologists surveyed were asked to report all of the credentials they hold. The vast majority of the respondents indicated being a state certified school psychologist (94.7%, *n* = 233). Additionally, 65.9% (*n* = 162) of the respondents reported being a nationally certified school psychologist, 16.3% (*n* = 40) reported being a licensed psychologist, and 11.8% (*n* = 29) reported having some other form of credential. The other credentials listed included being a licensed psychoeducational specialist, licensed professional counselor, licensed marriage and family therapist, licensed specialist in school psychology, special education teacher, elementary teacher, principal, licensed educational psychologist, gifted teacher, early childhood teacher, early childhood special education teacher, licensed social worker, licensed psychologist associate, American board certified school neuropsychologist, licensed mental health professional, senior

psychological examiner, mental health counselor, licensed school social worker, and applied behavioral analyst.

Table 3

Demographic Characteristics of the Sample

Demographic Characteristic	*n*	%
Region of Country		
West	50	20.3
North Central	63	25.6
Northeast	75	30.5
South	58	23.6
Primary Employment Setting		
Urban	64	26.0
Suburban	130	52.8
Rural	52	21.1
Socioeconomic Status		
Mostly Higher	32	13.0
Mostly Middle	121	49.2
Mostly Lower	93	37.8
Sex		
Female	206	83.7
Male	40	16.3
Highest Education Degree Earned		
Masters Degree	21	8.5
Specialists Degree	162	65.9
Doctoral Degree	63	25.6

(table continues)

Years of Experience		
1 - 10	128	52.5
11 - 20	57	23.4
21 - 30	45	18.4
31 or more	14	5.7
M	13.6	
SD	9.5	
Range	37.0	
Credentials Held		
State Certified	233	94.7
Nationally Certified	162	65.9
Licensed	40	16.3
Other	29	11.8

Demographic information from Curtis et al. (2008), the most recent NASP Membership Survey in 2004-2005, was compared to the demographic information gathered from the participants of this study. A qualitative comparison of the studies had to be completed because the demographic data in Curtis et al. did not report standard deviations in order to perform other statistical comparisons. The comparison is presented in Table 4. Curtis et al. found that 77% of practicing school psychologists are female. The respondents in this study were all school psychologists practicing in a school setting and 83.7% were female. Curtis et al. reported that 75.6% of practicing school

psychologists held a Masters or Specialists degree. Similarly, this study found that 74.4% of the school psychologists surveyed held a Masters or Specialists degree. When comparing the percentage of respondents who held certification, Curtis et al. stated that 93.8% of the respondents hold certification and this study found that 94.7% of respondents hold certification. Curtis et al. found that practicing school psychologists had an average of 14 years of experience. This study found that the school psychologists surveyed have an average of 13.6 years of experience, suggesting that the school psychologists in this current study are similar to that of those in Curtis' study when presenting the most recent NASP Membership Survey in 2004-2005. The similar comparisons between studies provided support for generalization of the result to the larger population of practicing school psychologists.

Table 4

Demographics of the Sample Compared to NASP Members

Demographic Characteristic	Participant %	NASP %
Sex		
Female	83.7	77.0
Male	16.3	23.0
Highest Education Degree Earned		
Masters Degree	8.5	35.7

(table continues)

Specialists Degree	65.9	39.9
Doctoral Degree	25.6	24.4
Years of Experience		
M	13.6	14.0
SD	9.5	Not Available
Range	37.0	Not Available
Credentials Held		
State Certification	94.7	93.8

Research Questions

Research Question 1

What percentage of the school psychologists surveyed conduct assessments for ADHD, provide a diagnosis of ADHD, refer to an outside professional for an ADHD assessment, provide interventions for ADHD, and refer to an outside professional for interventions with ADHD?

It was hypothesized that the majority of school psychologists surveyed would report conducting some form of ADHD assessments and that the minority of school psychologists surveyed would report providing a diagnosis of ADHD. Determining the percentage of school psychologists surveyed that refer to an outside professional for an ADHD assessment and interventions and determining the percentage of school

psychologists surveyed that provide interventions for ADHD was an exploratory question with no hypothesis.

These research questions were represented by survey items 18a, 18b, 19, 178a, and 178b. Survey items 18a and 18b asked the participants to answer if they conduct assessments for ADHD and if they do not assess for ADHD, do they refer to an outside professional for the assessment. Survey item 19 asked the respondents to answer if they provide an ADHD diagnosis if warranted at the end of the assessment. Survey items 178a and 178b asked the participants to answer if they provide interventions for ADHD and if they do not intervene for ADHD, do they refer to an outside professional for the interventions. The participants responded yes or no to the questions. The percentage of respondents who conduct ADHD assessments and who provide an ADHD diagnosis is reported. The percentage of respondents who refer to outside professional for an ADHD assessment if they do not provide one are reported. Finally, the percentage of respondents who provide interventions for ADHD and who refer to an outside professional for ADHD interventions if they do not provide interventions are reported.

It was found that 77.2% (n = 190) of the school psychologists surveyed reported that they conduct assessments for ADHD. Only 26.8% (n = 51) of the respondents who conduct ADHD assessments also replied that they provide a diagnosis of

ADHD if warranted. Of the respondents who noted that they do not conduct ADHD assessments, 83.9% (*n* = 47) of them reported that they refer to an outside professional for the ADHD assessment. When asked if they provided interventions for ADHD, 90.7% (*n* = 223) of the respondents reported that they do provide interventions for ADHD. Of the respondents who reported that they do not provide interventions for ADHD, 39.1% (*n* = 9) of them checked that they refer to an outside professional for the ADHD interventions.

Research Question 2

How frequently are the school psychologists surveyed assessing for ADHD and what percentage of their caseload is comprised of ADHD assessments?

This was an exploratory question with no hypothesis. Survey items 20 and 21 addressed this research question. These survey items asked the participants the number of ADHD assessments conducted in the past year and the approximate percentage of their caseload that their ADHD assessments represent. The number of ADHD assessments conducted and the percentage of caseload the number of ADHD assessments equaled were reported.

A review of data revealed that 72% (*n* = 131) of the respondents checked that they have conducted between 1 and 10 ADHD assessments in the past year. Additionally, 18.7% (*n* = 34)

of the respondents reported that they have conducted between 11 and 20 ADHD assessments, 4.9% (*n* = 9) reported that they have conducted between 21 and 30 ADHD assessments, 1.1% (*n* = 2) reported that they have conducted between 31 and 40 ADHD assessments, 2.7% (*n* = 5) reported that they have conducted between 41 and 50 ADHD assessments, and 0.6% (*n* = 1) reported conducting 51 or more ADHD assessments in the past year. Refer to Table 5 for an overview of the number of ADHD assessments conducted.

Table 5

Number of ADHD Assessments Conducted

ADHD Assessments	*n*	%
1 - 10	131	72.0
11 - 20	34	18.7
21 - 30	9	4.9
31 - 40	2	1.1
41 - 50	5	2.7
51 or more	1	0.6
Total	182	100.0

When surveying the percentage of the respondents' assessments that were conducted for ADHD, 42.9% (*n* = 76) of the respondents noted that ADHD assessments made up between 1 and 10 percent of their caseload. Additionally, 20.9% (*n* = 37) of the respondents reported that ADHD assessments make up between 11

and 20 percent of their caseload, 20.3% (*n* = 36) reported that ADHD assessments make up between 21 and 30 percent of their caseload, 9.1% (*n* = 16) reported that ADHD assessments make up between 31 and 40 percent of their caseload, 4% (*n* = 7) reported that ADHD assessments make up between 41 and 50 percent of their caseload, and 2.8% (*n* = 5) reported that ADHD assessments make up 51 percent or more of their caseload. Refer to Table 6 for an overview of the percentage of caseload that was comprised of ADHD assessments.

Table 6

Percentage of Caseload for ADHD Assessments

Percentage of Caseload	*n*	%
1 - 10	76	42.9
11 - 20	37	20.9
21 - 30	36	20.3
31 - 40	16	9.1
41 - 50	7	4.0
51 or more	5	2.8
Total	177	100.0

Research Question 3

How frequently are the school psychologists surveyed providing interventions for ADHD and what percentage of their caseload is comprised of providing interventions for ADHD?

This was an exploratory question with no hypothesis. Survey items 179 and 180 represented this research question. These survey items asked the participants the number of interventions they provide for ADHD and the approximate percentage of their caseload that their ADHD interventions represent. The number of ADHD interventions provided and the percentage of caseload the number of ADHD interventions equaled were reported.

A review of data revealed that 54.9% (*n* = 84) of the respondents stated that they have provided between 1 and 10 interventions for ADHD in the past year. Additionally, 31.4% (*n* = 48) of the respondents reported that they have provided between 11 and 20 interventions for ADHD, 4.6% (*n* = 7) reported that they have provided between 21 and 30 interventions for ADHD, 2.6% (*n* = 4) reported that they have provided between 31 and 40 interventions for ADHD, 1.3% (*n* = 2) reported that they have provided between 41 and 50 interventions for ADHD, and 5.2% (*n*=8) reported providing 51 or more interventions for ADHD in the past year. Seven of the respondents answered that they did not know how many interventions they provided. Another respondent indicated, "too many." One respondent reported that they performed 10 interventions per child, but without further information, the actual number could not be determined. These responses were not included in the analysis.

Refer to Table 7 for an overview of the number of interventions provided for ADHD.

Table 7

Number of Interventions for ADHD

ADHD Interventions	*n*	%
1 - 10	84	54.9
11 - 20	48	31.4
21 - 30	7	4.6
31 - 40	4	2.6
41 - 50	2	1.3
51 or more	8	5.2
Total	153	100.0

When surveying the percentage of the respondents' interventions that were provided for ADHD, 30.4% (*n* = 48) of the respondents noted that ADHD interventions made up between 1 and 10 percent of their caseload. Additionally, 17.1% (*n* = 27) of the respondents reported that ADHD interventions make up between 11 and 20 percent of their caseload, 20.9% (*n* = 33) reported that ADHD interventions make up between 21 and 30 percent of their caseload, 6.9% (*n* = 11) reported that ADHD interventions make up between 31 and 40 percent of their caseload, 12.7% (*n* = 20) reported that ADHD interventions make up between 41 and 50 percent of their caseload, and 12% (*n* = 19) reported that ADHD interventions make up 51 percent or more of their caseload.

Three of the respondents answered that they do not know how many interventions they provided. These responses were not included in the analysis. Refer to Table 8 for an overview of the percentage of caseload that was comprised of ADHD interventions.

Table 8

Percentage of Caseload for ADHD Interventions

Percentage of Caseload	*n*	%
1 - 10	48	30.4
11 - 20	27	17.1
21 - 30	33	20.9
31 - 40	11	6.9
41 - 50	20	12.7
51 or more	19	12.0
Total	158	100.0

Research Question 4

What is the level of agreement that the school psychologists surveyed indicate for statements regarding their qualifications in assessing for ADHD, diagnosing ADHD, and providing interventions for ADHD?

It was hypothesized that the majority of the school psychologists surveyed would report being qualified to assess for ADHD, but significantly less would report being qualified to diagnose ADHD. Determining how often the school psychologists surveyed consider themselves qualified to provide interventions

for ADHD was an exploratory question with no hypothesis. Survey items 11, 13, and 176 represented this research question. Survey items 11 and 13 asked the participants to determine their level of agreement regarding the statement that school psychologist are qualified to assess and diagnose ADHD. Survey item 176 asked the participants their levels of agreement regarding the statement that school psychologist are qualified to provide interventions for ADHD. The participants responded strongly agree, agree, neutral, disagree, and strongly disagree to those survey items. The levels of agreement regarding the respondent's qualifications to assess, diagnose, and provide interventions for ADHD are reported.

A total of 41.5% (*n* = 102) of respondents strongly agreed that they are qualified to assess for ADHD. Additionally, 46.7% (*n* = 115) of respondents agreed that they are qualified to assess for ADHD, 8.9% (*n* = 22) of respondents were neutral to the statement that they are qualified to assess for ADHD, 2.4% (*n* = 6) of respondents disagreed that they are qualified to assess for ADHD, and 0.4% (*n* = 1) of respondents strongly disagreed that they are qualified to assess for ADHD.

The results showed that 28.5% (*n* = 70) of the respondents strongly agreed that they are qualified to diagnose ADHD. Additionally, 32.1% (*n* = 79) of the respondents agreed that they are qualified to diagnose ADHD, 19.1% (*n* = 47) of the

respondents were neutral to the statement that they are qualified to diagnose ADHD, 15.4% (*n* = 38) of the respondents disagreed that they are qualified to diagnose ADHD, and 4.9% (*n* = 12) of the respondents strongly disagreed that they are qualified to diagnose ADHD.

The results determined that 51.2% (*n* = 126) of the respondents strongly agreed that they are qualified to provide interventions for ADHD. Additionally, 45.1% (*n* = 111) of the respondents agreed that they are qualified to provide interventions for ADHD, 2.8% (*n* = 7) of the respondents were neutral to the statement that they are qualified to provide interventions for ADHD, 0.4% (*n* = 1) of the respondents disagreed that they are qualified to provide interventions for ADHD, and 0.4% (*n* = 1) of the respondents strongly disagreed that they are qualified to provide interventions for ADHD.

Research Question 5

What is the level of confidence of the school psychologists surveyed regarding their ability to assess, to diagnose, and to provide interventions for ADHD?

It was hypothesized that the school psychologists surveyed would be confident in their ability to assess for ADHD, but less confident in their ability to diagnose ADHD. It was hypothesized that the school psychologists surveyed would be confident in their ability to provide interventions for ADHD.

Survey items 12, 14, and 177 addressed this research question. These survey items asked the participants to rate their level of agreement for a statement regarding confidence in their ability to assess, diagnose, and provide interventions for ADHD. The participants responded strongly agree, agree, neutral, disagree, and strongly disagree to those survey items. The levels of agreement regarding the respondent's confidence to assess, diagnose, and provide interventions for ADHD are reported.

A total of 48% (*n* = 118) of school psychologists surveyed strongly agreed that they are confident in their ability to assess for ADHD. The results revealed that 39.8% (*n* = 98) of respondents agreed that they are confident in their ability to assess for ADHD. Additionally, 7.7% (*n* = 19) of respondents reported that they remained neutral when responding to the statement about the confidence in their ability to assess for ADHD, 4.1% (*n* = 10) of respondents disagreed that they are confident in their ability to assess for ADHD, and 0.4% (*n* = 1) of respondents strongly disagreed that they are confident in their ability to assess for ADHD. Refer to Table 9 for the confidence levels of the respondents in assessing for ADHD.

Table 9

Confidence in Ability to Assess for ADHD

Confidence to Assess for ADHD	*n*	%
Strongly Agree	118	48.0
Agree	98	39.8
Neutral	19	7.7
Disagree	10	4.2
Strongly Disagree	1	0.5
Total	246	100.0

A total of 38.2% (*n* = 94) of the school psychologists surveyed strongly agreed that they are confident in their ability to diagnose ADHD. Twenty-six percent (*n* = 64) of respondents agreed that they are confident in their ability to diagnose. The results showed that 17.1% (*n* = 42) of respondents reported that they remained neutral when responding to the statement about the confidence in their ability to diagnose. The data revealed 13.8% (*n* = 34) of the respondents disagreed that they are confident in their ability to diagnose and 4.9% (*n* = 12) of respondents strongly disagreed that they are confident in their ability to diagnose. Refer to Table 10 for the confidence levels of the respondents in diagnosing ADHD.

Table 10

Confidence in Ability to Diagnose ADHD

Confidence to Diagnose ADHD	*n*	%
Strongly Agree	94	38.2
Agree	64	26.0
Neutral	42	17.1
Disagree	34	13.8
Strongly Disagree	12	4.9
Total	246	100.0

A total of 48.8% (*n* = 120) of the school psychologists surveyed strongly agreed that they are confident in their ability to provide interventions for ADHD. The results showed that 43.5% (*n* = 107) of respondents agreed that they are confident in their ability to provide interventions for ADHD and 6.5% (*n* = 16) of respondents checked that they remained neutral when responding to the statement about the confidence in their ability to intervene. The data revealed 0.8% (*n* = 2) of respondents disagreed that they are confident in their ability to intervene and 0.4% (*n* = 1) of respondents strongly disagreed that they are confident in their ability to intervene. Refer to Table 11 for the confidence levels of the respondents in providing interventions for ADHD.

Table 11

Confidence in Ability to Provide ADHD Interventions

Confidence to Intervene for ADHD	*n*	%
Strongly Agree	120	48.8
Agree	107	43.5
Neutral	16	6.5
Disagree	2	0.8
Strongly Disagree	1	0.4
Total	246	100.0

Research Question 6

When assessing for ADHD, how frequently do the school psychologists surveyed administer the various chosen assessment instruments?

This was an exploratory question with no hypothesis. Survey items 22 through 174 addressed this research question. These survey items asked the participants to rate how frequently they used several assessment instruments when conducting an ADHD assessment under the categories of general, interview methods, observational methods, behavior rating scales, ADHD rating scales, continuous performance assessments, cognition/intelligence assessments, achievement assessments, neuropsychological assessments, memory and learning assessments, adaptive behavior assessments, and projective/personality assessments. The participants responded either never, seldom,

sometimes, often, or always to those survey items. The results are reported regarding how often the respondents use various assessment instruments when conducting an ADHD assessment.

Of the 246 respondents, 77.2% (n = 190) of the school psychologists surveyed answered that they conduct assessments for ADHD. These results are based on the responses of 190 of those participants. When looking at the results overall, the respondents checked that the most frequently used methods were using instruments under the general methods category (M = 3.35). In order, the most frequently used methods were under the categories of observational methods (M = 1.65), interview methods (M = 1.59), cognitive/intelligence assessments (M = .71), achievement assessments (M = .64), adaptive behavior assessments (M = .61), behavior rating scales (M = .46), ADHD rating scales (M = .43), memory and learning assessments (M = .39), neuropsychological assessments (M = .32), projective/personality assessments (M = .29), and continuous performance assessments (M = .10).

When looking within each category, the individual methods with the highest mean rating for frequency were as follows: review of school records (M = 3.91), review of teacher input (M = 3.89), review of academic performance (M = 3.85), review of parent input (M = 3.82), review of developmental history (M = 3.75), review of classroom characteristics (M = 3.67), review of

medical history (*M* = 3.64), teacher interview (*M* = 3.62), general observation of child (*M* = 3.62), review of family history (*M* = 3.52), parent interview (*M* = 3.43), review of group administered standardized assessments (*M* = 3.38), child interview (*M* = 3.34), review of teacher characteristics (*M* = 3.21), systematic observation of child (*M* = 3.17), and BASC-2 rating scale (*M* = 3.11). Refer to Table 12 for overall usage within each category.

Table 12

Usage by Assessment Categories

Category	Overall Mean Rating*
General Methods	3.35
Interview Methods	1.59
Observational Methods	1.65
Behavior Rating Scales	.46
ADHD Rating Scales	.43
Continuous Performance Assessments	.10
Cognitive/Intelligence Assessments	.71
Achievement Assessments	.64
Neuropsychological Assessments	.32
Memory and Learning Assessments	.39
Adaptive Behavior Assessments	.61
Projective/Personality Assessments	.29

Note. Overall mean ratings are based on the quantifiers of 0 = Never, 1 = Seldom, 2 = Sometimes, 3 = Often, 4 = Always.

Within the general methods category, reviewing school records/history received the highest mean rating for frequency (*M* = 3.91). The methods receiving the highest mean rating for frequency included reviewing teacher input (*M* = 3.89), reviewing academic performance (*M* = 3.85), reviewing parent input (*M* = 3.82), and reviewing developmental history (*M* = 3.75). When given the opportunity for open-ended responses, six respondents listed using the Behavioral Observation of Students in Schools (BOSS). The BOSS received a mean rating for frequency of 3.83. One respondent replied using student input always and one respondent checked using progress monitoring always. Refer to Table 13 for general methods usage for listed survey instruments.

Table 13

General Methods Usage

	Frequency					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**	***M***
Assessment Instrument						
Assessments to determine differential diagnosis						
n	17	3	38	59	73	
%	8.9	1.6	20.0	31.1	38.4	2.88
Curriculum Based Assessment (CBA)						
n	35	39	53	42	21	
%	18.4	20.5	27.9	22.1	11.1	1.87
Functional Behavior Assessment (FBA)						
n	12	27	84	45	22	
%	6.3	14.2	44.2	23.7	11.6	2.20

(table continues)

Review of academic performance						
n	0	0	3	22	165	
%	0.0	0.0	1.6	11.6	86.8	3.85
Review of classroom characteristics that may affect child's behaviors						
n	2	2	8	33	145	
%	1.1	1.1	4.2	17.4	76.3	3.67
Review of developmental history						
n	0	0	7	34	149	
%	0.0	0.0	3.7	17.9	78.4	3.75
Review of family history						
n	0	3	18	47	122	
%	0.0	1.6	9.5	24.7	64.2	3.52
Review of group administered standardized assessments						
n	2	7	22	44	115	
%	1.1	3.7	11.6	23.2	60.5	3.38
Review of medical history						
n	1	0	10	45	134	
%	0.5	0.0	5.3	23.7	70.5	3.64
Review of parent input						
n	0	0	1	33	156	
%	0.0	0.0	0.5	17.4	82.1	3.82
Review of school records/history						
n	0	0	0	17	173	
%	0.0	0.0	0.0	8.9	91.1	3.91
Review of teacher characteristics that may affect child's behaviors						
n	2	9	31	54	94	
%	1.1	4.7	16.3	28.4	49.5	3.21
Review of teacher input						
n	0	0	2	16	172	
%	0.0	0.0	1.1	8.4	90.5	3.89

Note. Overall mean ratings are based on the quantifiers of 0 = Never, 1 = Seldom, 2 = Sometimes, 3 = Often, 4 = Always. Because percentages were rounded, the total percentage for each component may not always equal 100.

Within the interview methods category, teacher interviews received the highest mean rating for frequency (M = 3.62). The methods receiving the highest mean rating for frequency included parent interviews (M = 3.43), child interviews (M = 3.34), and

BASC-2 – Structured Developmental History (SDH) (*M* = 1.58). When given the opportunity for open-ended responses, one respondent listed using the ADHD clinical workbook by Russell Barkley with the frequency of often. One respondent noted using resources of Russell Barkley in general with the frequency of often. Refer to Table 14 for interview methods usage for listed survey instruments.

Table 14

Interview Methods Usage

	Frequency					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**	***M***
Assessment Instrument						
ASEBA – Semistructured Clinical Interview for Children & Adolescent						
n	144	21	18	6	1	
%	75.8	11.1	9.5	3.2	0.5	.42
Aggregate Neurobehavioral Student Health & Educational Review (ANSER)						
n	179	6	2	2	1	
%	94.2	3.2	1.1	1.1	0.5	.11
BASC-2 – Structured Developmental History (SDH)						
n	79	15	31	36	29	
%	41.6	7.9	16.3	18.9	15.3	1.58
Diagnostic Interview for Children and Adolescents – 4th Edition (DICA-IV)						
n	175	6	7	1	1	
%	92.1	3.2	3.7	0.5	0.5	.14
Diagnostic Interview Schedule for Children – 4th Edition (DISC-IV)						
n	179	5	6	0	0	
%	94.2	2.6	3.2	0.0	0.0	.09
Child Interview						
n	4	4	25	48	109	
%	2.1	2.1	13.2	25.3	57.4	3.34
Parent Interview						
n	5	1	19	47	118	
%	2.6	0.5	10.0	24.7	62.1	3.43

(table continues)

Teacher Interview						
n	4	0	11	34	141	
%	2.1	0.0	5.8	17.9	74.2	3.62

Note. Overall mean ratings are based on the quantifiers of 0 = Never, 1 = Seldom, 2 = Sometimes, 3 = Often, 4 = Always. Because percentages were rounded, the total percentage for each component may not always equal 100.

Within the observational methods category, general observation of the child received the highest mean rating for frequency (M = 3.62). The methods receiving the highest mean rating for frequency included systematic observation of the child (M = 3.17) and using the BASC-2 – Student Observation System (SOS) (M = .85). When given the opportunity for open-ended responses, one respondent indicated using multiple observations, but did not provide a frequency. One respondent noted that they often do comparative data observations. One respondent answered that they often observe across environments and one respondent checked that they often use Architext. Refer to Table 15 for observational methods usage for listed survey instruments.

Table 15

Observational Methods Usage

	Frequency					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**	***M***
Assessment Instrument						
ASEBA – Child Behavior Checklist – Direct Observation Form						
n	163	14	8	2	3	
%	85.8	7.4	4.2	1.1	1.6	.25
BASC-2 – Portable Observation Program (POP)						
n	164	4	11	6	5	
%	86.3	2.1	5.8	3.2	2.6	.34
BASC-2 – Student Observation System (SOS)						
n	120	17	28	12	13	
%	63.2	8.9	14.7	6.3	6.8	.85
General observation of child						
n	4	1	8	37	140	
%	2.1	0.5	4.2	19.5	73.7	3.62
Systematic observation of child						
n	9	5	25	57	94	
%	4.7	2.6	13.2	30.0	49.5	3.17

Note. Overall mean ratings are based on the quantifiers of 0 = Never, 1 = Seldom, 2 = Sometimes, 3 = Often, 4 = Always. Because percentages were rounded, the total percentage for each component may not always equal 100.

Within the behavior rating scales methods category, the BASC-2 received the highest mean rating for frequency (*M* = 3.11). The behavior rating scales receiving the highest mean rating for frequency included Conners Comprehensive Behavior Rating Scales (CBRS) (*M* = 1.50), Social Skills Rating System (*M* = .80), and Achenbach System of Empirically Based Assessment (ASEBA) (*M* = .61). When given the opportunity for open-ended responses, nine respondents listed using the NICHQ – Vanderbilt Assessment Scale. The NICHQ received a mean rating for

frequency of 3.11. Respondents indicated using the Early Childhood ADD Evaluation Scales, the Preschool and Kindergarten Behavior Scales, the Burks Behavior Rating Scale, the Adolescent Psychopathology Scale, Sensory Checklists, and the Social Skills Improvement System with the frequency of sometimes. Respondents reported using the Multidimensional Anxiety Scale for Children, the Children's Depression Inventory, and Emotional Behavior Problems Scale with the frequency of often. One respondent noted using Informal Rating Scales by Russell Barkley with the frequency of always. Refer to Table 16 for behavior rating scale usage for listed survey instruments.

Table 16

Behavior Rating Scales Instrument Usage

	Frequency					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**	***M***
Assessment Instrument						
Achenbach System of Empirically Based Assessment (ASEBA)						
n	134	15	27	10	4	
%	70.5	7.9	14.2	5.3	2.1	.61
Behavior and Emotional Rating Scale – 2nd Edition (BERS-2)						
n	177	6	5	2	0	
%	93.2	3.2	2.6	1.1	0.0	.12
Behavior Assessment System for Children – 2nd Edition (BASC-2)						
n	8	5	21	80	76	
%	4.2	2.6	11.1	42.1	40.0	3.11
Behavioral Dimensions Rating Scale (BDRS)						
n	183	5	2	0	0	
%	96.3	2.6	1.1	0.0	0.0	.05

(table continues)

Behavior Dimension Scale – 2nd Edition (BDS-2)						
n	185	3	1	1	0	
%	97.4	1.6	0.5	0.5	0.0	.04
Behavior Evaluation Scale – 3rd Edition (BES-3)						
n	166	7	13	4	0	
%	87.4	3.7	6.8	2.1	0.0	.24
Child Symptom Inventory – 4 (CSI-4)						
n	175	6	6	2	1	
%	92.1	3.2	3.2	1.1	0.5	.15
Clinical Assessment of Behavior (CAB)						
n	168	7	8	7	0	
%	88.4	3.7	4.2	3.7	0.0	.23
Conners Comprehensive Behavior Rating Scales (CBRS)						
n	87	9	27	46	21	
%	45.8	4.7	14.2	24.2	11.1	1.50
Devereux Scales of Mental Disorders (DSMD)						
n	169	9	10	2	0	
%	88.9	4.7	5.3	1.1	0.0	.18
Emotional Quotient Inventory: Youth Version (EQ-i:YV)						
n	179	4	7	0	0	
%	94.2	2.1	3.7	0.0	0.0	.09
Home Situation Questionnaire (HSQ)						
n	176	4	5	5	0	
%	92.6	2.1	2.6	2.6	0.0	.15
Parent-Child Relationship Inventory (PCRI)						
n	185	1	4	0	0	
%	97.4	0.5	2.1	0.0	0.0	.05
Parenting Relationship Questionnaire (PRQ)						
n	183	4	3	0	0	
%	96.3	2.1	1.6	0.0	0.0	.05
Parenting Stress Index – 3rd Edition (PSI-3)						
n	182	5	3	0	0	
%	95.8	2.6	1.6	0.0	0.0	.06
Social Skills Rating System						
n	119	17	33	15	6	
%	62.6	8.9	17.4	7.9	3.2	.80

Note. Overall mean ratings are based on the quantifiers of 0 = Never, 1 = Seldom, 2 = Sometimes, 3 = Often, 4 = Always. Because percentages were rounded, the total percentage for each component may not always equal 100.

Within the ADHD rating scales methods category, the Conners 3 received the highest mean rating for frequency (*M* = 2.53). The ADHD rating scales receiving the highest mean rating for frequency were the Attention Deficit Disorders Evaluation Scale – 3rd Edition (ADDES-3) (*M* = .61), Brown Attention-Deficit Disorder Scales (*M* = .40), and ADHD-IV Rating Scales (*M* = .35). When given the opportunity for open-ended responses, one respondent checked using the ADHD Symptoms Rating Scale with the frequency of always. Refer to Table 17 for ADHD rating scale usage for listed survey instruments.

Table 17

ADHD Rating Scales Instrument Usage

	Frequency					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**	***M***
Assessment Instrument						
ADD-H: Comprehensive Teacher's Rating Scale – 2nd Edition (ACTeRS)						
n	166	9	11	3	1	
%	87.4	4.7	5.8	1.6	0.5	.23
ADHD-IV Rating Scale						
n	159	6	18	3	4	
%	83.7	3.2	9.5	1.6	2.1	.35
ADHD Symptom Checklist – 4 (ADHD-SC4)						
n	175	5	4	1	5	
%	92.1	2.6	2.1	0.5	2.6	.19
Attention Deficit Disorders Evaluation Scale – 3rd Edition (ADDES-3)						
n	131	18	29	8	4	
%	68.9	9.5	15.3	4.2	2.1	.61
Attention Deficit/Hyperactivity Disorder Rating Scale – Revised						
n	178	1	9	2	0	
%	93.7	0.5	4.7	1.1	0.0	.13

(table continues)

Attention-Deficit/Hyperactivity Disorder Test (ADHDT)						
n	179	2	5	3	1	
%	94.2	1.1	2.6	1.6	0.5	.13
Brown Attention-Deficit Disorder Scales						
n	155	9	14	9	3	
%	81.6	4.7	7.4	4.7	1.6	.40
Child Attention Profile (CAP)						
n	184	3	2	1	0	
%	96.8	1.6	1.1	0.5	0.0	.05
Clinical Assessment of Attention Deficit – Child (CAT-C)						
n	186	1	1	2	0	
%	97.9	0.5	0.5	1.1	0.0	.05
Conners 3 – 3rd Edition						
n	39	10	23	48	70	
%	20.5	5.3	12.1	25.3	36.8	2.53
Test of Everyday Attention for Children (TEA-Ch)						
n	180	6	3	0	1	
%	94.7	3.2	1.6	0.0	0.5	.08

Note. Overall mean ratings are based on the quantifiers of 0 = Never, 1 = Seldom, 2 = Sometimes, 3 = Often, 4 = Always. Because percentages were rounded, the total percentage for each component may not always equal 100.

Within the continuous performance assessments category, the Conners' Continuous Performance Tests – II (CPT-II) received the highest mean rating for frequency (M = .26). The Test of Variables of Attention (T.O.V.A) received a mean rating for frequency of .11. When given the opportunity for open-ended responses, no responses were provided. Refer to Table 18 for continuous performance assessment usage for listed survey instruments.

Table 18

Continuous Performance Assessments Usage

	Frequency					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**	***M***
Assessment Instrument						
Auditory Continuous Performance Test (ACPT)						
n	185	3	1	0	1	
%	97.4	1.6	0.5	0.0	0.5	.05
Conners' Continuous Performance Tests - II (CPT-II)						
n	171	3	6	5	5	
%	90.0	1.6	3.2	2.6	2.6	.26
Gordon Diagnostic System (GDS)						
n	187	2	0	0	1	
%	98.4	1.1	0.0	0.0	0.5	.03
Integrated Visual and Auditory Continuous Performance Test (IVA)						
n	184	2	1	3	0	
%	96.8	1.1	0.5	1.6	0.0	.07
Test of Variables of Attention (T.O.V.A.)						
n	177	7	4	2	0	
%	93.2	3.7	2.1	1.1	0.0	.11

Note. Overall mean ratings are based on the quantifiers of 0 = Never, 1 = Seldom, 2 = Sometimes, 3 = Often, 4 = Always. Because percentages were rounded, the total percentage for each component may not always equal 100.

Within the cognitive/intelligence assessments category, the Wechsler Intelligence Scale for Children – 4th Edition (WISC-IV) received the highest mean rating for frequency (*M* = 2.37). The cognitive/intelligence assessments receiving the highest mean rating for frequency were the Woodcock-Johnson III Normative Update – Tests of Cognitive Abilities (WJIII NU-COG) (*M* = 1.12), Wechsler Adult Intelligence Scale – 4th Edition (WAIS-IV) (*M* = 1.06), Wechsler Preschool and Primary Scale of Intelligence – 3rd Edition (WPPSI-III) (*M* = .98), and the Kaufman Assessment

Battery for Children – 2nd Edition (KABC-II) (*M* = .89). When given the opportunity for open-ended responses, one respondent listed using the Battelle Developmental Inventory – 2nd Edition (BDI-2) with the frequency of often. Refer to Table 19 for cognitive/intelligence assessment instruments usage.

Table 19

Cognitive/Intelligence Assessments Usage

	Frequency					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**	***M***
Assessment Instrument						
Comprehensive Test of Nonverbal Intelligence – 2nd Edition (CTONI-2)						
n	83	54	47	6	0	
%	43.7	28.4	24.7	3.2	0.0	.87
Das-Naglieri Cognitive Assessment System (CAS)						
n	152	14	14	5	5	
%	80.0	7.4	7.4	2.6	2.6	.41
Differential Ability Scales – 2nd Edition (DAS-II)						
n	109	26	34	20	1	
%	57.4	13.7	17.9	10.5	0.5	.83
Expressive Vocabulary Test – 2nd Edition (EVT-2)						
n	172	11	5	2	0	
%	90.5	5.8	2.6	1.1	0.0	.14
Kaufman Assessment Battery for Children – 2nd Edition (KABC-II)						
n	104	26	40	17	3	
%	54.7	13.7	21.1	8.9	1.6	.89
Kaufman Brief Intelligence Test – 2nd Edition (KBIT-2)						
n	138	17	26	9	0	
%	72.6	8.9	13.7	4.7	0.0	.51
Leiter International Performance Scale – Revised (Leiter-R)						
n	151	29	9	1	0	
%	79.5	15.3	4.7	0.5	0.0	.26
Peabody Picture Vocabulary Test – 4th Edition (PPVT-4)						
n	148	18	19	5	0	
%	77.9	9.5	10.0	2.6	0.0	.37

(table continues)

Reynolds Intellectual Assessment Scales (RIAS)						
n	139	13	23	12	3	
%	73.2	6.8	12.1	6.3	1.6	.56
Slosson Intelligence Test – Revised (SIT-R3)						
n	178	10	2	0	0	
%	93.7	5.3	1.1	0.0	0.0	.07
Stanford-Binet Intelligence Scales – 5th Edition (SB5)						
n	99	37	38	14	2	
%	52.1	19.5	20.0	7.4	1.1	.86
Test of Nonverbal Intelligence – 3rd Edition (TONI-3)						
n	119	27	35	8	1	
%	62.6	14.2	18.4	4.2	0.5	.66
Universal Nonverbal Intelligence Test (UNIT)						
n	102	35	45	7	1	
%	53.7	18.4	23.7	3.7	0.5	.79
Wechsler Abbreviated Scale of Intelligence (WASI)						
n	125	18	32	14	1	
%	65.8	9.5	16.8	7.4	0.5	.67
Wechsler Adult Intelligence Scale – 4th Edition (WAIS-IV)						
n	103	15	36	29	7	
%	54.2	7.9	18.9	15.3	3.7	1.06
Wechsler Intelligence Scale for Children – 4th Edition (WISC-IV)						
n	25	12	49	75	29	
%	13.2	6.3	25.8	39.5	15.3	2.37
Wechsler Nonverbal Scale of Ability (WNV)						
n	144	20	23	3	0	
%	75.8	10.5	12.1	1.6	0.0	.39
Wechsler Preschool & Primary Scale of Intelligence – 3rd Edition (WPPSI-III)						
n	100	23	43	18	6	
%	52.6	12.1	22.6	9.5	3.2	.98
Woodcock-Johnson III Normative Update – Tests of Cognitive Abilities (WJIII NU-COG)						
n	99	15	37	32	7	
%	52.1	7.9	19.5	16.8	3.7	1.12
Woodcock-Johnson III Diagnostic Supplement to the Tests of Cognitive Abilities						
n	144	12	23	10	1	
%	75.8	6.3	12.1	5.3	0.5	.48

Note. Overall mean ratings are based on the quantifiers of 0 = Never, 1 = Seldom, 2 = Sometimes, 3 = Often, 4 = Always. Because percentages were rounded, the total percentage for each component may not always equal 100.

Within the achievement assessments category, the Woodcock-Johnson III Normative Update – Tests of Achievement (WJIII NU-ACH) received the highest mean rating for frequency (*M* = 1.58). The achievement assessments receiving the highest mean rating for frequency were the Wechsler Individual Achievement Test – 3rd Edition (WIAT-III) (*M* = 1.41), the Kaufman Test of Educational Achievement – 2nd Edition (KTEA-II) (*M* = .71), and the Woodcock-Johnson III NU - Tests of Achievement/Brief Battery (WJIII NU Form C/Brief Battery) (*M* = .43). When given the opportunity for open-ended responses, three respondents listed using the Test of Written Language – 3rd Edition (TOWL-3). The TOWL-3 received a mean rating for frequency of 2.00. Respondents noted using the Test of Early Reading Ability – 3rd Edition (TERA-3) and the Bracken Basic Concept Scales (BBCS), but did not provide frequency of usage. Respondents reported using the Qualitative Reading Inventory – 4th Edition (QRI-IV), the Brigance Assessment of Basic Skills, and the Wechsler Individual Achievement Test – 2nd Edition with the frequency of often. Respondents checked using the Test of Word Reading Efficiency, Kaufman Test of Educational Achievement – Brief, KeyMath – 2nd Edition, and Diagnostic Achievement Test for Adolescents – 2nd Edition (DATA-2) with the frequency of sometimes. Refer to Table 20 for achievement assessment usage for listed survey instruments.

Table 20

Achievement Assessments Usage

	Frequency					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**	***M***
Assessment Instrument						
Diagnostic Achievement Battery – 3rd Edition (DAB-3)						
n	164	16	6	3	1	
%	86.3	8.4	3.2	1.6	0.5	.22
Kaufmann Test of Educational Achievement – 2nd Edition (KTEA-II)						
n	130	15	19	22	4	
%	68.4	7.9	10.0	11.6	2.1	.71
Peabody Individual Achievement Test – Revised – Normative Update (PIAT-R/NU)						
n	176	6	4	3	1	
%	92.6	3.2	2.1	1.6	0.5	.14
Wechsler Individual Achievement Test – 3rd Edition (WIAT-III)						
n	70	30	47	28	15	
%	36.8	15.8	24.7	14.7	7.9	1.41
Wide Range Achievement Test – 4th Edition (WRAT-4)						
n	162	10	11	5	2	
%	85.3	5.3	5.8	2.6	1.1	.29
Woodcock-Johnson III Normative Update – Tests of Achievement (WJIII NU-ACH)						
n	75	14	35	48	18	
%	39.5	7.4	18.4	25.3	9.5	1.58
WJ III NU – Tests of Achievement/Brief Battery (WJIII NU Form C/Brief Battery)						
n	151	10	15	14	0	
%	79.5	5.3	7.9	7.4	0.0	.43
Young Children's Achievement Test (YCAT)						
n	160	8	14	7	1	
%	84.2	4.2	7.4	3.7	0.5	.32

Note. Overall mean ratings are based on the quantifiers of 0 = Never, 1 = Seldom, 2 = Sometimes, 3 = Often, 4 = Always. Because percentages were rounded, the total percentage for each component may not always equal 100.

Within the neuropsychological assessments category, the Beery-Buktenica Developmental Test of Visual-Motor Integration 5th Edition (VMI-5) received the highest mean rating for frequency (*M* = 1.44). The neuropsychological assessments

receiving the highest mean rating for frequency were the Behavior Rating Inventory of Executive Function (BRIEF) (*M* = 1.31), Bender Visual-Motor Gestalt Test – 2nd Edition (Bender-Gestalt-II) (*M* = .87), the Test of Auditory Processing Skills – 3rd Edition (TAPS-3) (*M* = .54), and the NEPSY-II (*M* = .52). When given the opportunity for open-ended responses, four respondents listed using the Comprehensive Test of Phonological Processing (CTOPP). The CTOPP received a mean rating for frequency of 3.00. One respondent checked using the Children's Color Trails Test with the frequency of sometimes. One respondent answered using the Motor-Free Visual Perception Test – 3rd Edition (MVPT-3) with the frequency of always. Refer to Table 21 for neuropsychological assessment usage for listed survey instruments.

Table 21

Neuropsychological Assessments Usage

	Frequency					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**	***M***
Assessment Instrument						
Beery-Buktenica Developmental Test of Visual-Motor Integration (VMI-5)						
n	70	25	49	33	13	
%	36.8	13.2	25.8	17.4	6.8	1.44
Behavioral Assessment of the Dysexecutive Syndrome in Children (BADS-C)						
n	187	2	0	1	0	
%	98.4	1.1	0.0	0.5	0.0	.03
Behavior Rating Inventory of Executive Function (BRIEF)						
n	95	13	27	39	16	
%	50.0	6.8	14.2	20.5	8.4	1.31

(table continues)

Bender Visual-Motor Gestalt Test – 2nd Edition (Bender-Gestalt II)						
n	100	37	36	11	6	
%	52.6	19.5	18.9	5.8	3.2	.87
Children's Category Test (CCT)						
n	186	3	0	1	0	
%	97.9	1.6	0.0	0.5	0.0	.03
Comprehensive Trail-Making Test (CTMT)						
n	174	9	5	1	1	
%	91.6	4.7	2.6	0.5	0.5	.14
Dean-Woodcock Neuropsychological Battery (DW)						
n	189	1	0	0	0	
%	99.5	0.5	0.0	0.0	0.0	.01
Delis-Kaplan Executive Function System (D-KEFS)						
n	168	6	8	6	2	
%	88.4	3.2	4.2	3.2	1.1	.25
NEPSY-II						
n	139	18	22	8	3	
%	73.2	9.5	11.6	4.2	1.6	.52
Pegboard						
n	187	2	1	0	0	
%	98.4	1.1	0.5	0.0	0.0	.02
Porteus Maze						
n	188	2	0	0	0	
%	98.9	1.1	0.0	0.0	0.0	.01
Raven's Progressive Matrices						
n	177	9	3	1	0	
%	93.2	4.7	1.6	0.5	0.0	.09
Rey Complex Figure and Recognition Trial (RCFT)						
n	167	10	3	10	0	
%	87.9	5.3	1.6	5.3	0.0	.24
Stroop Color and Word Test						
n	174	6	6	4	0	
%	91.6	3.2	3.2	2.1	0.0	.16
Test of Auditory Processing Skills – 3rd Edition (TAPS-3)						
n	143	12	19	11	5	
%	75.3	6.3	10.0	5.8	2.6	.54
Test of Language Development – 4th Edition (TOLD-4)						
n	168	14	6	2	0	
%	88.4	7.4	3.2	1.1	0.0	.17

(table continues)

The Matching Familiar Figures Test (MFFT)						
n	187	2	0	1	0	
%	98.4	1.1	0.0	0.5	0.0	.03
Tower of London – 2nd Edition (TOL-2)						
n	189	1	0	0	0	
%	99.5	0.5	0.0	0.0	0.0	.01
Wisconsin Card Sorting Test (WCST)						
n	172	7	9	2	0	
%	90.5	3.7	4.7	1.1	0.0	.16

Note. Overall mean ratings are based on the quantifiers of 0 = Never, 1 = Seldom, 2 = Sometimes, 3 = Often, 4 = Always. Because percentages were rounded, the total percentage for each component may not always equal 100.

Within the memory and learning assessments category, the Wide Range Assessment of Memory and Learning – 2nd Edition (WRAML2) received the highest mean rating for frequency (*M* = .95). The memory and learning assessments receiving the highest mean rating for frequency included the Children's Memory Scale (CMS) (*M* = .36) and the Test of Memory and Learning – 2nd Edition (TOMAL-2) (*M* = .35). When given the opportunity for open-ended responses, two respondents listed using the Children's Auditory Verbal Learning Test – 2nd Edition (CAVLT-2). The CAVLT-2 received a mean rating for frequency of 3.00. Refer to Table 22 for memory and learning assessment usage for listed survey instruments.

Table 22

Memory and Learning Assessments Usage

	Frequency					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**	***M***
Assessment Instrument						
California Verbal Learning Test – Children's Version (CVLT-C)						
n	173	5	8	3	1	
%	91.1	2.6	4.2	1.6	0.5	.18
Children's Memory Scale (CMS)						
n	150	17	18	4	1	
%	78.9	8.9	9.5	2.1	0.5	.36
Detroit Tests of Learning Aptitude – 4th Edition (DTLA-4)						
n	180	5	4	0	1	
%	94.7	2.6	2.1	0.0	0.5	.09
Test of Memory and Learning – 2nd Edition (TOMAL-2)						
n	151	16	19	4	0	
%	79.5	8.4	10.0	2.1	0.0	.35
Wide Range Assessment of Memory and Learning – 2nd Edition (WRAML2)						
n	103	22	36	29	0	
%	54.2	11.6	18.9	15.3	0.0	.95

Note. Overall mean ratings are based on the quantifiers of 0 = Never, 1 = Seldom, 2 = Sometimes, 3 = Often, 4 = Always. Because percentages were rounded, the total percentage for each component may not always equal 100.

Within the adaptive behavior assessments category, the Vineland Adaptive Behavior Scales – 2nd Edition (Vineland-II) received the highest mean rating for frequency (M = 1.34). The adaptive behavior assessments receiving the highest mean rating for frequency included the Adaptive Behavior Assessment System – 2nd Edition (ABAS-II) (M = 1.11) and the Scales of Independent Behavior – Revised (SIB-R) (M = .36). When given the opportunity for open-ended responses, respondents listed using the Checklist of Development Inventory, Developmental Profile –

3rd Edition (DP-3), and the Adaptive Behavior Evaluation Scale with the frequency of often. Refer to Table 23 for adaptive behavior assessment usage for listed survey instruments.

Table 23

Adaptive Behavior Assessments Usage

	Frequency					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**	***M***
Assessment Instrument						
AAMR Adaptive Behavior Scale – School 2nd Edition (ABS-S:2)						
n	176	9	4	1	0	
%	92.6	4.7	2.1	0.5	0.0	.11
Adaptive Behavior Assessment System – 2nd Edition (ABAS-II)						
n	89	26	47	21	7	
%	46.8	13.7	24.7	11.1	3.7	1.11
Adaptive Behavior Inventory (ABI)						
n	177	5	7	1	0	
%	93.2	2.6	3.7	0.5	0.0	.12
Scales of Independent Behavior – Revised (SIB-R)						
n	149	19	16	6	0	
%	78.4	10.0	8.4	3.2	0.0	.36
Vineland Adaptive Behavior Scales – 2nd Edition (Vineland-II)						
n	58	41	65	20	6	
%	30.5	21.6	34.2	10.5	3.2	1.34

Note. Overall mean ratings are based on the quantifiers of 0 = Never, 1 = Seldom, 2 = Sometimes, 3 = Often, 4 = Always. Because percentages were rounded, the total percentage for each component may not always equal 100.

Within the projective/personality assessments category, Sentence Completion received the highest mean rating for frequency (M = 1.23). The projective/personality assessments receiving the highest mean rating for frequency included the House-Tree-Person Drawing (M = .73), Kinetic Drawings (M = .58), and Roberts Apperception Test for Children – 2nd Edition

(Roberts-2) (*M* = .47). When given the opportunity for open-ended responses, two respondents listed using the Adolescent Psychopathology Scale with a mean rating for frequency of 3.00. Two respondents recorded using the Revised Children's Manifest Anxiety Scale (RCMAS). The RCMAS received a mean rating for frequency of 1.50. Two respondents noted using the Beck Depression Inventory, but only one respondent provided a frequency rating of sometimes. One respondent checked using the Tasks of Emotional Development, but did not provide any usage information. Respondents indicated using the Children's Self-Report and Projective Inventory, Draw-A-Person: Screening Procedure for Emotional Disturbance (DAP-SPED), Children's Depression Inventory, and BarOn Emotional Quotient Inventory (BarOn-EQi) with the frequency of sometimes. Refer to Table 24 for projective/personality assessment usage for listed survey instruments.

Table 24

Projective/Personality Assessments Usage

	Frequency					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**	***M***
Assessment Instrument						
Brief Symptom Inventory (BSI)						
n	183	4	2	1	0	
%	96.3	2.1	1.1	0.5	0.0	.06
Children's Apperception Test (CAT)						
n	161	22	6	1	0	
%	84.7	11.6	3.2	0.5	0.0	.19
House-Tree-Person Drawing						
n	108	39	30	12	1	
%	56.8	20.5	15.8	6.3	0.5	.73
Kinetic Drawing						
n	130	23	26	9	2	
%	68.4	12.1	13.7	4.7	1.1	.58
Millon Adolescent Clinical Inventory (MACI)						
n	176	4	8	1	1	
%	92.6	2.1	4.2	0.5	0.5	.14
Millon Pre-Adolescent Clinical Inventory (M-PACI)						
n	186	2	2	0	0	
%	97.9	1.1	1.1	0.0	0.0	.03
Minnesota Multiphasic Personality Inventory – Adolescent (MMPI-A)						
n	169	11	7	3	0	
%	88.9	5.8	3.7	1.6	0.0	.18
Personality Inventory for Youth (PIY)						
n	182	3	3	2	0	
%	95.8	1.6	1.6	1.1	0.0	.08
Personality Inventory of Children – 2nd Edition (PIC-2)						
n	178	7	4	1	0	
%	93.7	3.7	2.1	0.5	0.0	.09
Roberts Apperception Test for Children – 2nd Edition (Roberts-2)						
n	137	20	30	3	0	
%	72.1	10.5	15.8	1.6	0.0	.47
Rorschach						
n	179	7	3	1	0	
%	94.2	3.7	1.6	0.5	0.0	.08

(table continues)

Sentence Completion						
n	82	31	42	21	14	
%	43.2	16.3	22.1	11.1	7.4	1.23
Symptom Checklist – 90 – Revised (SCL-90-R)						
n	186	4	0	0	0	
%	97.9	2.1	0.0	0.0	0.0	.02
TEMAS (Tell-Me-A-Story)						
n	181	4	5	0	0	
%	95.3	2.1	2.6	0.0	0.0	.07
Thematic Apperception Test (TAT)						
n	142	33	13	2	0	
%	74.7	17.4	6.8	1.1	0.0	.34

Note. Overall mean ratings are based on the quantifiers of 0 = Never, 1 = Seldom, 2 = Sometimes, 3 = Often, 4 = Always. Because percentages were rounded, the total percentage for each component may not always equal 100.

Research Question 7

When providing interventions for ADHD, how frequently do the school psychologists surveyed provide the various identified interventions for ADHD?

This was an exploratory question with no hypothesis. Survey items 181 through 238 represented this research question. These survey items asked the participants to rate how frequently they provide several types of interventions for ADHD. The participants responded either never, seldom, sometimes, often, or always to those survey items.

The results are reported regarding how often the respondents use various ADHD interventions.

Of the 246 respondents, 90.7% (*n* = 223) of the school psychologists surveyed checked that they provide interventions for ADHD. These results are based on the responses of 223 of

those participants. The respondents answered that the most frequently used interventions are using positive reinforcement (M = 3.06) and providing ongoing support to teachers (M = 3.04). In order, the most frequently used interventions are recommending a combination of interventions (M = 2.93), creating a behavior intervention plan for the student (M = 2.85), modifying environmental factors (M = 2.76), recommending instructional strategies (M = 2.74), modifying academic tasks (M = 2.60), providing instructional consultation to teachers (M = 2.55), providing teacher education on ADHD (M = 2.52), and recommending participation in a positive behavior support system (M = 2.48). When given the opportunity for open-ended responses, one respondent recorded using family counseling with the frequency of always. Respondents listed using Gestalt techniques and executive skills coaching with the frequency of often. In addition, respondents indicated recommending improving diet and exercising habits with the frequency of often. One respondent noted using consequences with the frequency of sometimes. Refer to Table 25 for intervention usage for listed survey instruments.

Table 25

Intervention Usage

	Frequency					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**	***M***
Intervention						
Consult with physician to monitor medication dosage and efficacy						
n	21	42	88	61	11	
%	9.4	18.8	39.5	27.4	4.9	2.00
Create behavior intervention plan for student						
n	1	1	61	127	33	
%	0.4	0.4	27.4	57.0	14.8	2.85
Facilitate parent support groups						
n	153	43	18	9	0	
%	68.6	19.3	8.1	4.0	0.0	.48
Provide anger management training						
n	76	58	71	18	0	
%	34.1	26.0	31.8	8.1	0.0	1.14
Provide behavior management to the students directly						
n	36	35	76	72	4	
%	16.1	15.7	34.1	32.3	1.8	1.88
Provide behavior management training to parents						
n	64	51	81	26	1	
%	28.7	22.9	36.3	11.7	0.4	1.32
Provide behavior management training to teachers						
n	18	24	80	84	17	
%	8.1	10.8	35.9	37.7	7.6	2.26
Provide biofeedback training						
n	204	12	4	3	0	
%	91.5	5.4	1.8	1.3	0.0	.13
Provide cognitive behavioral therapy						
n	92	51	50	27	3	
%	41.3	22.9	22.4	12.1	1.3	1.09
Provide conflict resolution/problem solving training						
n	66	42	66	45	4	
%	29.6	18.8	29.6	20.2	1.8	1.46
Provide family therapy						
n	187	21	12	3	0	
%	83.9	9.4	5.4	1.3	0.0	.24

(table continues)

Provide homework interventions						
n	29	33	88	62	11	
%	13.0	14.8	39.5	27.8	4.9	1.97
Provide instructional consultation to teacher						
n	8	18	65	107	25	
%	3.6	8.1	29.1	48.0	11.2	2.55
Provide neurofeedback training						
n	208	4	4	7	0	
%	93.3	1.8	1.8	3.1	0.0	.15
Provide ongoing support to teachers						
n	6	6	40	93	78	
%	2.7	2.7	17.9	41.7	35.0	3.04
Provide parent training/education on ADHD						
n	41	58	71	39	14	
%	18.4	26.0	31.8	17.5	6.3	1.67
Provide play therapy						
n	165	35	18	5	0	
%	74.0	15.7	8.1	2.2	0.0	.39
Provide relaxation training						
n	102	47	52	21	1	
%	45.7	21.1	23.3	9.4	0.4	.98
Provide self-directed intervention training						
n	111	44	45	21	2	
%	49.8	19.7	20.2	9.4	0.9	.92
Provide social skill training						
n	37	34	78	59	15	
%	16.6	15.2	35.0	26.5	6.7	1.91
Provide teacher education on ADHD						
n	5	26	78	77	37	
%	2.2	11.7	35.0	34.5	16.6	2.52
Recommend a combination of interventions						
n	11	4	46	90	72	
%	4.9	1.8	20.6	40.4	32.3	2.93
Extinction						
n	68	44	74	33	4	
%	30.5	19.7	33.2	14.8	1.8	1.38
Negative reinforcement						
n	69	58	74	19	3	
%	30.9	26.0	33.2	8.5	1.3	1.23

(table continues)

Positive reinforcement						
n	4	3	41	102	73	
%	1.8	1.3	18.4	45.7	32.7	3.06
Punishment						
n	112	70	38	3	0	
%	50.2	31.4	17.0	1.3	0.0	.70
Time out						
n	44	64	89	25	1	
%	19.7	28.7	39.9	11.2	0.4	1.44
Recommend cognitive approach to ADHD intervention						
n	32	42	90	54	5	
%	14.3	18.8	40.4	24.2	2.2	1.81
Recommend contingency contracting						
n	41	18	80	78	6	
%	18.4	8.1	35.9	35.0	2.7	1.96
Recommend dietary restrictions						
n	162	34	23	3	1	
%	72.6	15.2	10.3	1.3	0.4	.42
Recommend habilitation therapy						
n	199	18	4	2	0	
%	89.2	8.1	1.8	0.9	0.0	.14
Recommend home/school communication journal						
n	30	19	83	72	19	
%	13.5	8.5	37.2	32.3	8.5	2.14
Recommend hypnosis						
n	214	6	3	0	0	
%	96.0	2.7	1.3	0.0	0.0	.05
Recommend in-home tutoring						
n	126	60	28	8	1	
%	56.5	26.9	12.6	3.6	0.4	.65
Recommend instructional strategies						
n	7	9	57	111	39	
%	3.1	4.0	25.6	49.8	17.5	2.74
Recommend intensive, multimodal treatment program						
n	91	44	47	33	8	
%	40.8	19.7	21.1	14.8	3.6	1.21
Recommend modifying academic tasks						
n	7	8	77	107	24	
%	3.1	3.6	34.5	48.0	10.8	2.60

(table continues)

Recommend modifying environmental factors						
n	6	6	57	121	33	
%	2.7	2.7	25.6	54.3	14.8	2.76
Recommend ocular motor exercises						
n	198	14	7	4	0	
%	88.8	6.3	3.1	1.8	0.0	.18
Recommend optimal arousal therapy						
n	206	7	7	2	1	
%	92.4	3.1	3.1	0.9	0.4	.14
Recommend organizational skill training						
n	21	18	75	95	14	
%	9.4	8.1	33.6	42.6	6.3	2.28
Recommend parent support groups						
n	71	54	65	30	3	
%	31.8	24.2	29.1	13.5	1.3	1.28
Recommend participation in positive behavior support system						
n	16	22	59	90	36	
%	7.2	9.9	26.5	40.4	16.1	2.48
Recommend peer coaching						
n	76	46	81	19	1	
%	34.1	20.6	36.3	8.5	0.4	1.21
Recommend peer interventions						
n	60	57	86	19	1	
%	26.9	25.6	38.6	8.5	0.4	1.30
Recommend peer mediation						
n	92	52	68	11	0	
%	41.3	23.3	30.5	4.9	0.0	.99
Recommend peer tutoring						
n	53	53	96	21	0	
%	23.8	23.8	43.0	9.4	0.0	1.38
Recommend physician consultation for medication treatment consideration						
n	27	22	74	75	25	
%	12.1	9.9	33.2	33.6	11.2	2.22
Recommend replacement behaviors						
n	20	22	73	78	30	
%	9.0	9.9	32.7	35.0	13.5	2.34
Recommend Section 504 Plan						
n	11	36	135	37	4	
%	4.9	16.1	60.5	16.6	1.8	1.94

(table continues)

Recommend self-directed interventions such as self-monitoring, self-evaluation, or self-reinforcement						
n	10	16	99	82	16	
%	4.5	7.2	44.4	36.8	7.2	2.35
Recommend special education services						
n	6	38	157	21	1	
%	2.7	17.0	70.4	9.4	0.4	1.88
Recommend strategies to improve parent/child communication						
n	28	45	97	47	6	
%	12.6	20.2	43.5	21.1	2.7	1.81
Recommend strategies to improve parent/child relations						
n	29	43	101	44	6	
%	13.0	19.3	45.3	19.7	2.7	1.80
Recommend study skill training						
n	24	32	97	65	5	
%	10.8	14.3	43.5	29.1	2.2	1.98
Recommend use of a token economy system						
n	23	39	106	53	2	
%	10.3	17.5	47.5	23.8	0.9	1.87
Recommend use of computer assisted instruction						
n	62	57	80	21	3	
%	27.8	25.6	35.9	9.4	1.3	1.31
Recommend vitamins, supplements, or other nondrug substances						
n	197	16	8	2	0	
%	88.3	7.2	3.6	0.9	0.0	.17
Refer to behavioral specialist to develop behavior management techniques						
n	70	56	76	17	4	
%	31.4	25.1	34.1	7.6	1.8	1.23
Use of other psychotherapies						
n	162	29	29	3	0	
%	72.6	13.0	13.0	1.3	0.0	.43

Note. Overall mean ratings are based on the quantifiers of 0 = Never, 1 = Seldom, 2 = Sometimes, 3 = Often, 4 = Always. Because percentages were rounded, the total percentage for each component may not always equal 100.

Research Question 8

What is the level of agreement that the school psychologists surveyed indicate for statements regarding their qualifications in assessing for ADHD to determine if the disorder exists, to determine the need and appropriateness of special education or Section 504 services, and to develop appropriate interventions?

This was an exploratory question with no hypothesis. Survey items 15, 16, and 17 represented this research question. Survey items 15, 16, and 17 asked the participants to indicate their level of agreement regarding statements that school psychologists are qualified to assess for ADHD to determine if the disorder exists, to determine the need and appropriateness of special education or Section 504 services, and to develop appropriate interventions. The participants responded strongly agree, agree, neutral, disagree, and strongly disagree to those survey items. The levels of agreement regarding the respondent's qualifications to assess for ADHD regarding a variety of purposes are reported.

The results showed that 35.4% (n = 87) of respondents strongly agreed that they are qualified to assess for ADHD to determine if the disorder exists. Additionally, 41.9% (n = 103) of respondents agreed that they are qualified to assess for ADHD to determine if the disorder exists, 14.2% (n = 35) of

respondents checked being neutral to the statement that they are qualified to assess for ADHD to determine if the disorder exists, 6.9% (*n* = 17) of respondents disagreed that they are qualified to assess for ADHD to determine if the disorder exists, and 1.6% (*n* = 4) of respondents strongly disagreed that they are qualified to assess for ADHD to determine if the disorder exists. Refer to Table 26 for level of agreement to statements regarding qualifications to assess for ADHD to determine of the disorder exists.

Table 26

Qualifications to Assess for ADHD to Determine if Disorder Exists

Assess for Disorder	*n*	%
Strongly Agree	87	35.4
Agree	103	41.9
Neutral	35	14.2
Disagree	17	6.9
Strongly Disagree	4	1.6
Total	246	100.0

Forty-eight percent (*n* = 118) of respondents strongly agreed that they are qualified to assess for ADHD to determine the need and appropriateness of special education and Section 504 services. Additionally, 41.5% (*n* = 102) of respondents agreed that they are qualified to assess for ADHD to determine the need and appropriateness of special education and Section

504 services, 5.3% (*n* = 13) of respondents noted being neutral to the statement that they are qualified to assess for ADHD to determine the need and appropriateness of special education and Section 504 services, 4.9% (*n* = 12) of respondents disagreed that they are qualified to assess for ADHD to determine the need and appropriateness of special education and Section 504 services, and 0.4% (*n* = 1) of respondents strongly disagreed that they are qualified to assess for ADHD to determine the need and appropriateness of special education and Section 504 services. Refer to Table 27 for level of agreement to statements regarding qualifications to assess for ADHD to determine the need and appropriateness of special education and Section 504 services.

Table 27

Qualifications to Assess for ADHD to Determine Special Education and Section 504 Services

Assess for Services	*n*	%
Strongly Agree	118	48.0
Agree	102	41.5
Neutral	13	5.3
Disagree	12	4.9
Strongly Disagree	1	0.4
Total	246	100.0

The results reflected that 49.2% (*n* = 121) of respondents strongly agreed that they are qualified to assess for ADHD to develop appropriate interventions. Additionally, 45.5% (*n* = 112) of respondents agreed that they are qualified to assess for ADHD to develop appropriate interventions, 2.4% (*n* = 6) of respondents replied being neutral to the statement that they are qualified to assess for ADHD to develop appropriate interventions, 2.4% (*n* = 6) of respondents disagreed that they are qualified to assess for ADHD to develop appropriate interventions, and 0.4% (*n* = 1) of respondents strongly disagreed that they are qualified to assess for ADHD to develop appropriate interventions. Refer to Table 28 for level of agreement to statement regarding qualifications to assess for ADHD to develop appropriate interventions.

Table 28

Qualifications to Assess for ADHD to Develop Appropriate Interventions

Assess for Interventions	*n*	%
Strongly Agree	121	49.2
Agree	112	45.5
Neutral	6	2.4
Disagree	6	2.4
Strongly Disagree	1	0.4
Total	246	100.0

Research Question 9

What are the beliefs of the school psychologists surveyed regarding their training in ADHD assessment and in providing ADHD interventions?

It was hypothesized that the majority of school psychologists would report being well-trained in assessment and intervention of ADHD. Survey items 10 and 175 represented this research question. Survey items 10 and 175 asked the participants their level of agreement regarding statements that they were well-trained regarding ADHD assessments and interventions within their school psychology graduate training. The participants responded strongly agree, agree, neutral, disagree, and strongly disagree to those survey items. The levels of agreement regarding the respondent's training to assess and provide interventions for ADHD are reported.

The results revealed that 17.5% (*n* = 43) of respondents strongly agreed that they are well-trained regarding ADHD assessments in their school psychology graduate training. Additionally, 36.2% (*n* = 89) of respondents agreed that they are well-trained regarding ADHD assessments in their school psychology graduate training, 18.7% (*n* = 46) of respondents checked being neutral to the statement that that they are well-trained regarding ADHD assessments in their school psychology graduate training, 22.4% (*n* = 55) of respondents disagreed that

they are well-trained regarding ADHD assessments in their school psychology graduate training, and 5.3% (*n* = 13) of respondents strongly disagreed that they are well-trained regarding ADHD assessments in their school psychology graduate training. Refer to Table 29 for level of agreement to the statement regarding training for ADHD assessments.

Table 29

Training Regarding ADHD Assessment

ADHD Assessment Training	*n*	%
Strongly Agree	43	17.5
Agree	89	36.2
Neutral	46	18.7
Disagree	55	22.4
Strongly Disagree	13	5.3
Total	246	100.0

The results showed that 14.2% (*n* = 35) of respondents strongly agreed that they are well-trained regarding ADHD interventions in their school psychology graduate training. Additionally, 41.9% (*n* = 103) of respondents agreed that they are well-trained regarding ADHD interventions in their school psychology graduate training, 22% (*n* = 54) of respondents checked being neutral to the statement that that they are well-trained regarding ADHD interventions in their school psychology graduate training, 17.5% (*n* = 43) of respondents disagreed that

they are well-trained regarding ADHD interventions in their school psychology graduate training, and 4.5% (*n* = 11) of respondents strongly disagreed that they are well-trained regarding ADHD interventions in their school psychology graduate training. Refer to Table 30 for level of agreement to the statement regarding training for ADHD interventions.

Table 30

Training Regarding ADHD Interventions

ADHD Intervention Training	*n*	%
Strongly Agree	35	14.2
Agree	103	41.9
Neutral	54	22.0
Disagree	43	17.5
Strongly Disagree	11	4.5
Total	246	100.0

Research Question 10

Is there an association between the demographic variables, assessment variables, diagnostic variables, and intervention variables? The demographic variables included the surveyed school psychologists' geographic location, community setting, SES, sex, level of education, years of experience, and credentials. The assessment variables were the surveyed school psychologists' beliefs of being well-trained in ADHD assessments, level of confidence in their ability to assess for

ADHD, beliefs of being qualified to assess for ADHD in general, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, beliefs of being qualified to assess for ADHD to develop interventions, and indication of conducting ADHD assessments. The diagnostic variables were the surveyed school psychologists' beliefs of being qualified to diagnose ADHD, level of confidence in their ability to diagnose ADHD, and indication of providing a diagnosis of ADHD. The intervention variables included the surveyed school psychologists' beliefs of being well-trained in ADHD interventions, beliefs of being qualified to provide ADHD interventions, level of confidence in their ability to provide ADHD interventions, and indication of providing ADHD interventions.

This was an exploratory question with no hypothesis. Survey items 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18a, 19, 175, 176, 177, and 178a represented this research question. Survey items 1, 3, 4, 5, 6, 8, and 9 asked the participants for various demographic information such as geographic location of primary employment setting, nature of community of primary employment setting, SES of primary employment setting, sex, highest level of graduate education, number of years of experience, and credentials.

Survey items 10, 11, 12, 13, 14, 15, 16, and 17 asked the participants to provide their level of agreement to statements measuring their beliefs of being well-trained in ADHD assessments, their beliefs of being qualified to assess and diagnose ADHD, their level of confidence in their ability to assess and diagnose ADHD, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, and beliefs of being qualified to assess for ADHD to develop interventions. The participants responded strongly agree, agree, neutral, disagree, and strongly disagree to those survey items.

Survey items 175, 176, and 177 asked the participants to state their level of agreement to statements measuring their beliefs of being well-trained in ADHD interventions, their beliefs of being qualified to provide ADHD interventions, and their level of confidence in their ability to provide ADHD interventions. The participants responded strongly agree, agree, neutral, disagree, and strongly disagree to those survey items.

Finally, survey items 18a, 19, and 178a asked the participants if they conducted ADHD assessments, if they provide a diagnosis of ADHD at the end of their assessment if warranted, and if they provided ADHD interventions. The participants

responded yes or no to that survey item. The associations between the variables are reported.

The data were analyzed using Pearson *r* and Spearman *rho* statistical procedures. The assumption of linearity was checked using scatterplots to compare linear and quadratic regression lines. The assumption of normality was checked using skewness and boxplots. The majority of data was not considered to be approximately normally distributed. Both Pearson *r* and Spearman *rho* statistical procedures were calculated and the correlation coefficients were compared. The vast majority of Pearson *r* and Spearman *rho* correlation coefficients differed .05 or less. Because of the small differences between the two statistical procedures, normality did not appear to affect the results. Therefore, the Pearson *r* correlation coefficients were reported. According to Cohen (1988), correlation coefficients in the order of .00 to .09 are insubstantial, .10 to .29 are small, .30 to .49 are medium, and .50 and greater are large in terms of magnitude of effect sizes. Significant correlations that have medium to large relationships were reported.

A Pearson correlation was calculated for the relationship between the participants' belief in being well-trained in ADHD assessments and years of experience. A medium negative correlation was found (r (244) = -.41, p < .001), showing a significant relationship between the two variables. In

addition, the participants' belief in being well-trained in ADHD interventions was significantly correlated with years of experience. A medium negative correlation was found (r (244) = -.47, $p < .001$), showing a significant relationship between the two variables. Older, more experienced school psychologists indicated lower ratings in the areas of being well-trained in ADHD assessments and interventions as compared to the ratings of younger, less experienced school psychologists.

Table 31 shows Pearson r correlation coefficients for 39 pairs of variables that were found to be significantly correlated at $p < .001$ level and $df = 244$. There was a significant relationship between the participants' beliefs about being well-trained in ADHD assessment and their beliefs in being qualified to assess for ADHD $r = .31$, their level of confidence in ADHD assessment $r = .34$, and their beliefs about being well-trained in providing ADHD interventions $r = .75$. The higher the participants rated their beliefs about being well-trained in ADHD assessment, the higher they rated their beliefs about being qualified to assess for ADHD, the higher they rated their level of confidence in ADHD assessment, and the higher they rated their beliefs about being well-trained in providing ADHD interventions.

There was a significant relationship between the participants' beliefs about being qualified to assess for ADHD

and their level of confidence in ADHD assessment r = .72, their beliefs about being qualified to diagnose ADHD r = .55, their level of confidence in diagnosing ADHD r = .48, and their beliefs about being qualified to assess for ADHD to determine if the disorder exists r = .68. A significant relationship existed between the participants' beliefs about being qualified to assess for ADHD and their beliefs about being qualified to assess for ADHD to determine the need and appropriateness for services r = .68, their beliefs about being qualified to assess for ADHD to develop appropriate intervention r = .72, their beliefs about being qualified to provide ADHD interventions r = .50, and their level of confidence in providing ADHD interventions r = .43. The higher the participants rated their beliefs about being qualified to assess for ADHD, the higher they rated their level of confidence in ADHD assessment, the higher they rated their beliefs about being qualified to diagnose ADHD, the higher they rated their level of confidence in diagnosing ADHD, and the higher they rated their beliefs about being qualified to assess for ADHD to determine if the disorder exists. The higher the participants rated their beliefs about being qualified to assess for ADHD; the higher they rated their beliefs about being qualified to assess for ADHD to determine the need and appropriateness of services, the higher they rated their beliefs about being qualified to assess

for ADHD to develop interventions, the higher they rated their beliefs about being qualified to provide ADHD interventions, and the higher they rated their level of confidence in providing ADHD interventions.

The participants' level of confidence in ADHD assessment was significantly correlated with their beliefs about being qualified to assess for ADHD to determine if the disorder exists r = .54, their beliefs about being qualified to assess for ADHD to determine the need and appropriateness of services r = .56, and their beliefs about being qualified to assess for ADHD to develop appropriate interventions r = .53. The participants' level of confidence in ADHD assessment was significantly correlated with their beliefs about being qualified to provide ADHD interventions r = .42 and their level of confidence in providing ADHD interventions r = .54. The higher the participants rated their level of confidence in ADHD assessment; the higher they rated their beliefs about being qualified to assess for ADHD to determine if the disorder exists, the higher they rated their beliefs about being qualified to assess for ADHD to determine the need and appropriateness of services, the higher they rated their beliefs about being qualified to assess for ADHD to develop interventions. The higher the participants rated their level of confidence in ADHD assessment, the higher they rated their beliefs about being qualified to provide ADHD

interventions and the higher they rated their level of confidence in providing ADHD interventions.

The participants' beliefs about being qualified to diagnose ADHD were significantly correlated with their level of confidence in diagnosing ADHD r = .78, their beliefs about being qualified to assess for ADHD to determine if the disorder exists r = .71, and their beliefs about being qualified to assess for ADHD to determine the need and appropriateness of services r = .53. The participants' beliefs about being qualified to diagnose ADHD were significantly correlated with their beliefs about being qualified to assess for ADHD to develop appropriate interventions r = .50, their indication of providing an ADHD diagnosis r = .40, their beliefs about being qualified to provide ADHD interventions r = .33, and their level of confidence in providing ADHD interventions r = .34. The higher the participants rated their beliefs about being qualified to diagnose ADHD, the higher they rated their level of confidence in diagnosing ADHD, the higher they rated their beliefs about being qualified to assess for ADHD to determine if the disorder exists, and the higher they rated their beliefs about being qualified to assess for ADHD to determine the need and appropriateness of services. The higher the participants rated their beliefs about being qualified to diagnose ADHD; the higher they rated their beliefs about being qualified to assess for

ADHD to develop interventions, the more often they indicated diagnosing ADHD, the higher they rated their beliefs about being qualified to provide ADHD interventions, and the higher they rated their level of confidence in providing ADHD interventions.

There was a significant relationship between the participants' level of confidence in diagnosing ADHD and their beliefs about being qualified to assess for ADHD to determine if the disorder exists $r = .61$, their beliefs about being qualified to assess for ADHD to determine the need and appropriateness of services $r = .45$, and their beliefs about being qualified to assess for ADHD to develop appropriate interventions $r = .38$. There was also a significant relationship between the participants' level of confidence in diagnosing ADHD and their indication of providing an ADHD diagnosis $r = .43$ and their level of confidence in providing ADHD interventions $r = .42$. The higher the participants rated their level of confidence in diagnosing ADHD, the higher they rated their beliefs about being qualified to assess for ADHD to determine if the disorder exists, the higher they rated their beliefs about being qualified to assess for ADHD to determine the need and appropriateness of services, and the higher they rated their beliefs about being qualified to assess for ADHD to develop interventions. The higher the participants rated their level of confidence in diagnosing ADHD, the more often they indicated

diagnosing ADHD and the higher they rated their level of confidence in providing ADHD interventions.

The participants' beliefs about being qualified to assess for ADHD to determine if the disorder exists were significantly related to their beliefs about being qualified to assess for ADHD to determine the need and appropriateness of services r = .62 and their beliefs about being qualified to assess for ADHD to develop appropriate interventions r = .64. The participants' beliefs about being qualified to assess for ADHD to determine if the disorder exists were significantly related to their beliefs about being qualified to provide ADHD interventions r = .41 and their level of confidence in providing ADHD interventions r = .35. The higher the participants rated their beliefs about being qualified to assess for ADHD to determine if the disorder exists, the higher they rated their beliefs about being qualified to assess for ADHD to determine the need and appropriateness of services and the higher they rated their beliefs about being qualified to assess for ADHD to develop interventions. The higher the participants rated their beliefs about being qualified to assess for ADHD to determine if the disorder exists, the higher they rated their beliefs about being qualified to provide ADHD interventions and the higher they rated their level of confidence in providing ADHD interventions.

The participants' beliefs about being qualified to assess for ADHD to determine the need and appropriateness of services were significantly correlated with their beliefs about being qualified to assess for ADHD to develop appropriate interventions r = .83 and their level of confidence in providing ADHD interventions r = .38. The higher the participants rated their beliefs about being qualified to assess for ADHD to determine the need and appropriateness of services, the higher they rated their beliefs about being qualified to assess for ADHD to develop interventions and the higher they rated their level of confidence in providing ADHD interventions.

There was a significant relationship between the participants' beliefs about being qualified to assess for ADHD to develop appropriate interventions and their beliefs about being qualified to provide ADHD interventions r = .49 and their level of confidence in providing ADHD interventions r = .42. The higher the participants rated their beliefs about being qualified to assess for ADHD to develop interventions, the higher they rated their beliefs about being qualified to provide ADHD interventions and the higher they rated their level of confidence in providing ADHD interventions.

There was a significant relationship between the participants' beliefs about being well-trained in providing ADHD interventions and their beliefs about being qualified to provide ADHD interventions r = .30 and their level of confidence in providing ADHD interventions r = .30. The participants' beliefs about being qualified to provide ADHD interventions were significantly correlated with their level of confidence in providing ADHD interventions r = .75. The higher the participants rated their beliefs about being well-trained in providing ADHD interventions, the higher they rated their beliefs about being qualified to provide ADHD interventions and the higher they rated their level of confidence in providing ADHD interventions. The higher the participants rated their beliefs qualified to provide ADHD interventions, the higher they rated their level of confidence in providing ADHD interventions.

Table 31

Summary of Pearson r Intercorrelations

	TTA	QTA	CTA	QTD	CTD	ATDE	ATDS	ATDI	DI	TTI	QTI	CTI
TTA	--	.31*	.34*	.20	.19	.21	.26	.20	.05	.75*	.24	.26
QTA	--	--	.72*	.55*	.48*	.68*	.68*	.72*	.16	.23	.50*	.43*
CTA	--	--	--	.44**	.62**	.54*	.56*	.53*	.28	.20	.42*	.54*
QTD	--	--	--	--	.78*	.71*	.53*	.50*	.40*	.13	.33*	.34*
CTD	--	--	--	--	--	.61*	.45*	.38*	.43*	.12	.26	.42*
ATDE	--	--	--	--	--	--	.62*	.64*	.27	.12	.41	.35*
ATDS	--	--	--	--	--	--	--	.83*	.20	.18	.43**	.38*
ATDI	--	--	--	--	--	--	--	--	.14	.18	.49*	.42*
DI	--	--	--	--	--	--	--	--	--	.04	.07	.15
TTI	--	--	--	--	--	--	--	--	--	--	.30*	.30*
QTI	--	--	--	--	--	--	--	--	--	--	--	.75*
CTI	--	--	--	--	--	--	--	--	--	--	--	--

Note. TTA = training to assess; QTA = qualified to assess; CTA = confidence to assess; QTD = qualified to diagnose; CTD = confidence to diagnose; ATDE = assess to determine if disorder exists; ATDS = assess to determine services; ATDI = assess to develop interventions; DI = providing a diagnosis; TTI = training to intervene; QTI = qualified to intervene; CTI = confidence to intervene.
* $p < .001$; ** Spearman *rho* correlations were calculated instead.

A Spearman *rho* correlation coefficient was calculated for the relationship between a participants' level of education and having licensure as a credential. A medium positive correlation was found (*rho* (244) = .34, $p < .001$), indicating a significant relationship between the two variables. The more education a school psychologist obtained, the more likely they were to be a licensed psychologist. A Spearman *rho* correlation coefficient was calculated for the relationship between a participants' level of education and whether a diagnosis of ADHD is made when warranted. A medium positive correlation was found (*rho* (244) = .31, $p < .001$), showing a significant relationship between the two variables. The more education a school psychologist obtained, the more likely they were to provide a diagnosis of ADHD when warranted.

A Spearman *rho* correlation coefficient was calculated for the relationship between the participants' confidence to assess for ADHD and providing an ADHD diagnosis. A medium positive correlation was found (*rho* (244) = .31, $p < .001$), signifying a significant relationship between the two variables. The higher the participants rated their beliefs about being qualified to assess for ADHD, the more likely they were to provide an ADHD diagnosis when warranted.

Some of the Pearson *r* and Spearman *rho* correlation coefficient comparisons differed more than .05. Because of the larger differences between the two statistical procedures, the Spearman *Rho* correlations were used instead. A Spearman *rho* correlation coefficient was calculated for the relationship between the participants' level of confidence to assess for ADHD and their level of confidence in diagnosing ADHD. A large positive correlation was found (*rho* (244) = .69, $p < .001$), presenting a significant relationship between the two variables. The higher the participants rated their level of confidence to assess for ADHD, the higher they rated their level of confidence to diagnose ADHD. A Spearman *rho* correlation coefficient was calculated for the relationship between the participants' level of confidence to assess for ADHD and their beliefs about being qualified to diagnose ADHD. A medium positive correlation was found (*rho* (244) = .49, $p < .001$), indicating a significant relationship between the two variables. The higher the participants rate their level of confidence to assess for ADHD, the higher they rated their beliefs about being qualified to diagnose ADHD. Finally, a Spearman *rho* correlation coefficient was calculated for the relationship between the participants' beliefs about being qualified to assess for ADHD to determine the need and appropriateness of services and their beliefs about being qualified to provide ADHD interventions. A medium

positive correlation was found (*rho* (244) = .48, $p < .001$), showing a significant relationship between the two variables. The higher the participants rated their beliefs about being qualified to assess for ADHD to determine the need and appropriateness of services, the higher they rated their beliefs about being qualified to provide ADHD interventions.

Research Question 11

Are there certain demographic, assessment, diagnostic, and intervention variables that are associated with the likelihood that the school psychologists surveyed conduct ADHD assessments, diagnose ADHD, and provide ADHD interventions? The demographic variables, assessment variables, diagnostic variables, and intervention variables used in this research question are the same as in research question 10. This was an exploratory question with no hypothesis. Survey items 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18a, 19, 175, 176, 177, and 178a represented this research question. Survey items 1, 3, 4, 5, 6, 8, and 9 asked the participants to provide various demographic information such as geographic location of primary employment setting, nature of community of primary employment setting, SES of primary employment setting, sex, highest level of graduate education, number of years of experience, and credentials.

Survey items 10, 11, 12, 13, 14, 15, 16, and 17 asked the participants to check their level of agreement to statements

measuring their beliefs of being well-trained in ADHD assessments, their beliefs of being qualified to assess and diagnose ADHD, their level of confidence in their ability to assess and diagnose ADHD, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, and beliefs of being qualified to assess for ADHD to develop interventions. The participants responded strongly agree, agree, neutral, disagree, and strongly disagree to those survey items.

Survey items 175, 176, and 177 asked the participants to offer their level of agreement to statements measuring their beliefs of being well-trained in ADHD interventions, their beliefs of being qualified to provide ADHD interventions, and their level of confidence in their ability to provide ADHD interventions. The participants responded strongly agree, agree, neutral, disagree, and strongly disagree to those survey items.

Finally, survey items 18a, 19, and 178a asked the participants if they conducted ADHD assessments, if they provide a diagnosis of ADHD at the end of their assessment if warranted, and if they provided ADHD interventions. The participants responded yes or no to that survey item. These survey items were analyzed using binary logistic regression. The underlying

assumptions were checked and were appropriate. The results are reported.

In the first part of the logistic regression, the outcome variable was whether or not the participants' conducted ADHD assessments. In Block 1, the demographic variables served as the predictor variables. The only significant demographic predictor associated with the likelihood that school psychologists conduct ADHD assessments was holding a license as a credential. The results revealed that school psychologists who indicated being a licensed psychologists ($\beta = 1.162$, $p = .035$) were more likely to conduct ADHD assessments than those who hold another credential such as state certification, national certification, or some other miscellaneous credential. Overall, the combination of the demographic variables did not significantly predict who would conduct ADHD assessments. Refer to Table 32 for a summary of the logistic regression analysis during Block 1.

In Block 2 of the logistic regression, the assessment variables were added to the demographic variables to see if they increased the predictive power of the demographic variables. None of the demographic and assessment variables significantly predicted the likelihood that school psychologists conduct ADHD assessments. Overall, the combination of the demographic and assessment variables did not significantly predict who would

conduct ADHD assessments. Refer to Table 33 for a summary of the logistic regression analysis during Block 2.

In Block 3 of the logistic regression, the diagnostic variables were added to the demographic and assessment variables to see if they added to the predictive power of the demographic and assessment variables. None of the demographic, assessment, or diagnostic variables significantly predicted the likelihood that school psychologists conduct ADHD assessments. Overall, the combination of the demographic, assessment, and diagnostic variables did not significantly predict who will conduct ADHD assessments. Refer to Table 34 for a summary of the logistic regression analysis during Block 3.

Table 32

Block 1 of Logistic Regression Analysis for Variables Predicting Who Will Conduct ADHD Assessments

Tests of Model Coefficients	Chi-square	*df*	*p*
Hosmer and Lemeshow	9.321	8	.316
Block	9.838	12	.630
Model	9.838	12	.630

Model Summary

	Cox & Snell *R* Square	Nagelkerke *R* Square
Block 1	.040	.060

(table continues)

Classification Table

Observed		Predicted: Do you conduct ADHD Assessments? No	Predicted: Do you conduct ADHD Assessments? Yes	Percentage Correct
Do you conduct ADHD Assessments?	No	1	55	1.8
	Yes	0	188	100.0
Overall Percentage*				77.5

Variables in the Equation

Predictor	β	S.E.	Wald	df	*p*	Exp(B)
West	.759	.508	2.293	1	.130	2.158
North Central	.455	.445	1.045	1	.307	1.576
Northeast	.395	.417	.898	1	.343	1.484
Community	.037	.237	.024	1	.876	1.038
SES	-.203	.240	.715	1	.398	.816
Sex	-.126	.458	.076	1	.783	.882
Level of Education	-.296	.310	.912	1	.339	.743
Years of Experience	-.020	.017	1.388	1	.239	.980
State Cert.	.474	.665	.508	1	.476	1.607
National Cert.	-.044	.340	.017	1	.898	.957
Licensure	1.162	.553	4.422	1	.035	3.196
Other Credential	.183	.492	.139	1	.709	1.201

Note. * The cut value is .500.

Table 33

Block 2 of Logistic Regression Analysis for Variables Predicting Who Will Conduct ADHD Assessments

Tests of Model Coefficients	Chi-square	df	*p*
Hosmer and Lemeshow	5.301	8	.725
Block	9.494	5	.148
Model	19.332	18	.372

Model Summary

	Cox & Snell R Square	Nagelkerke R Square
Block 2	.076	.116

Classification Table

Observed		Predicted: Do you conduct ADHD Assessments? No	Yes	Percentage Correct
Do you conduct ADHD Assessments?	No	5	51	8.9
	Yes	4	184	97.9
Overall Percentage*				77.5

Variables in the Equation

Predictor	β	S.E.	Wald	df	*p*	Exp(B)
West	.772	.521	2.196	1	.138	2.163
North Central	.556	.464	1.436	1	.231	1.743
Northeast	.432	.433	.994	1	.319	1.083
Community	.079	.248	.102	1	.749	1.083
SES	-.143	.249	.331	1	.565	.866
Sex	.066	.480	.019	1	.891	1.068
Level of Education	-.339	.324	1.098	1	.295	.712
Years of Experience	-.029	.020	2.130	1	.144	.971

(table continues)

State Cert.	.248	.702	.125	1	.724	1.282
National Cert.	-.005	.356	.000	1	.988	.995
Licensure	.938	.559	2.822	1	.093	2.556
Other Credential	.098	.523	.035	1	.852	1.103
Train to Assess	-.082	.184	.200	1	.655	.921
Qualified to Assess	-.583	.406	2.060	1	.151	.558
Confidence to Assess	.591	.322	3.370	1	.066	1.805
Assess for Disorder	.173	.256	.455	1	.500	1.189
Assess for Services	.312	.363	.740	1	.390	1.367
Assess for Interventions	.069	.453	.023	1	.879	1.072

Note. * The cut value is .500.

Table 34

Block 3 of Logistic Regression Analysis for Variables Predicting Who Will Conduct ADHD Assessments

Tests of Model Coefficients	Chi-square	df	*p*
Hosmer and Lemeshow	6.743	8	.565
Block	1.250	2	.535
Model	20.583	20	.422

Model Summary

	Cox & Snell R Square	Nagelkerke R Square
Block 3	.081	.123

(table continues)

Classification Table

Observed		Predicted: Do you conduct ADHD Assessments? No	Predicted: Do you conduct ADHD Assessments? Yes	Percentage Correct
Do you conduct ADHD Assessments?	No	8	48	14.3
	Yes	4	184	97.9
Overall Percentage*				78.7

Variables in the Equation

Predictor	β	S.E.	Wald	df	*p*	Exp(B)
West	.765	.525	2.126	1	.145	2.150
North Central	.554	.466	1.413	1	.235	1.740
Northeast	.433	.435	.989	1	.320	1.542
Community	.098	.249	.156	1	.693	1.103
SES	-.140	.250	.316	1	.574	.869
Sex	-.031	.489	.004	1	.949	.969
Level of Education	-.306	.326	.880	1	.348	.736
Years of Experience	-.029	.020	2.041	1	.153	.972
State Cert.	.127	.722	.031	1	.860	1.136
National Cert.	.006	.356	.000	1	.987	1.006
Licensure	.988	.568	3.021	1	.082	2.686
Other Credential	.081	.525	.024	1	.878	1.084
Train to Assess	-.067	.186	.130	1	.718	.935
Qualified to Assess	-.524	.422	1.544	1	.214	.592
Confidence to Assess	.551	.381	2.086	1	.149	1.735
Assess for Disorder	.347	.306	1.286	1	.257	1.414
Assess for Services	.386	.379	1.037	1	.309	1.471
Assess for Interventions	.027	.465	.003	1	.954	1.027
Qualified to Diagnose	-.232	.313	.548	1	.459	.793
Confidence to Diagnose	-.011	.287	.001	1	.969	.989

Note. * The cut value is .500.

In the second part of the logistic regression, the outcome variable was whether or not the participants provided a diagnosis of ADHD when warranted. In Block 1, the demographic variables served as the predictor variables. There were three significant demographic predictors associated with the likelihood that school psychologists provide a diagnosis of ADHD when warranted: SES, level of education, and being a nationally certified school psychologist as a credential. The results indicated that SES (β = -.779, p = .014), level of education (β = 1.287, p = .001), and holding a national certification (β = .836, p = .048) were significant when entered into the equation. When all demographic variables were considered together, they significantly predicted whether or not school psychologists provide a diagnosis of ADHD when warranted (χ^2 = 40.397, df = 12, n = 188, p < .001). Overall, 76% of the cases were predicted correctly. Refer to Table 35 for a summary of the logistic regression analysis during Block 1.

Table 35

Block 1 of Logistic Regression Analysis for Variables Predicting Who Will Provide an ADHD Diagnosis

Tests of Model Coefficients	Chi-square	*df*	*p*
Hosmer and Lemeshow	5.246	8	.731
Block	40.397	12	<.001
Model	40.397	12	<.001

(table continues)

Model Summary

	Cox & Snell *R* Square	Nagelkerke *R* Square
Block 1	.193	.281

Classification Table

Observed		Predicted: Do you provide a diagnosis of ADHD? No	Predicted: Do you provide a diagnosis of ADHD? Yes	Percentage Correct
Do you provide a Diagnosis of ADHD?	No	126	11	92.0
	Yes	34	17	33.3
Overall Percentage*				76.1

Variables in the Equation

Predictor	β	S.E.	Wald	df	*p*	Exp(B)
West	-.333	.578	.332	1	.564	.717
North Central	-.121	.559	.047	1	.829	.886
Northeast	-.036	.507	.005	1	.943	.964
Community	.396	.278	2.029	1	.154	1.485
SES	-.779	.316	6.084	1	.014	.459
Sex	-.276	.497	.307	1	.579	.759
Level of Education	1.287	.391	10.843	1	.001	3.621
Years of Experience	.023	.021	1.244	1	.265	1.023
State Cert.	19.434	12772.485	.000	1	.999	2.755E8
National Cert.	.836	.423	3.905	1	.048	2.307
Licensure	.549	.487	1.273	1	.259	1.732
Other Credential	-.186	.618	.091	1	.763	.830

Note. * The cut value is .500.

In Block 2 of the logistic regression, the diagnostic variables were added to the demographic variables to see if they increased the predictive power of the demographic variables. At that level, only one of the demographic and diagnostic variables, level of education ($\beta = 1.154$, $p = .010$), significantly predicted the likelihood that school psychologists provide a diagnosis of ADHD when warranted. When all demographic and diagnostic variables were considered together, they significantly predicted whether or not school psychologists provide a diagnosis of ADHD when warranted ($\chi^2 = 67.997$, $df = 14$, $n = 188$, $p < .001$). Overall, 80% of the cases were predicted correctly. The Nagelkerke *R* Square and percentage correct were higher than they were when only demographic variables were entered. The Nagelkerke *R* Square revealed that the demographic and diagnostic variables accounted for approximately 44% of the variance in determining whether or not the participants provide a diagnosis of ADHD when warranted. Refer to Table 36 for a summary of the logistic regression analysis during Block 2.

Table 36

Block 2 of Logistic Regression Analysis for Variables Predicting Who Will Provide an ADHD Diagnosis

Tests of Model Coefficients	Chi-square	*df*	*p*
Hosmer and Lemeshow	2.540	8	.960
Block	27.600	2	<.001
Model	67.997	14	<.001

Model Summary

	Cox & Snell *R* Square	Nagelkerke *R* Square
Block 2	.304	.440

Classification Table

Observed		Predicted: Do you provide a diagnosis of ADHD? No	Predicted: Do you provide a diagnosis of ADHD? Yes	Percentage Correct
Do you provide a Diagnosis of ADHD?	No	125	12	91.2
	Yes	25	26	51.0
Overall Percentage*				80.3

Variables in the Equation

Predictor	β	S.E.	Wald	df	*p*	Exp(B)
West	.018	.634	.001	1	.977	1.018
North Central	.069	.621	.012	1	.912	1.071
Northeast	.046	.559	.007	1	.934	1.047
Community	.321	.310	1.073	1	.300	1.378
SES	-.617	.346	3.184	1	.074	.540
Sex	-.031	.531	.003	1	.954	.970
Level of Education	1.154	.448	6.632	1	.010	3.171
Years of Experience	.011	.023	.220	1	.639	1.011
State Cert.	19.002	12649.959	.000	1	.999	1.788E8

(table continues)

National Cert.	.836	.454	3.390	1	.066	2.308
Licensure	.573	.548	1.094	1	.296	1.773
Other Credential	.300	.680	.194	1	.660	1.349
Qualified to Diagnose	.567	.314	3.262	1	.071	1.763
Confidence to Diagnose	.608	.360	2.854	1	.091	1.837

Note. * The cut value is .500.

In Block 3 of the logistic regression, the assessment variables were added to the demographic and diagnostic variables to see if they increased the predictive power. At that level, there were three significant predictors associated with the likelihood that school psychologists provide a diagnosis of ADHD when warranted: level of education, being a nationally certified school psychologist, and beliefs in being qualified to diagnose ADHD. The results determined that level of education (β = 1.316, p = .006), holding a national certification (β = 1.014, p = .050), and beliefs in being qualified to diagnose ADHD (β = 1.111, p = .028), were significant when entered into the equation. When all demographic, diagnostic, and assessment variables were considered together, they significantly predicted whether or not school psychologists provide a diagnosis of ADHD when warranted (χ^2 = 77.698, df = 20, n = 188, p < .001). Overall, 81% of the cases were predicted correctly. The Nagelkerke R Square and percentage correct were higher than they were when only demographic and diagnostic variables were

entered. The Nagelkerke *R* Square revealed that the demographic and diagnostic variables accounted for approximately 49% of the variance in determining whether or not the participants provide a diagnosis of ADHD when warranted. Refer to Table 37 for a summary of the logistic regression analysis during Block 3.

Table 37

Block 3 of Logistic Regression Analysis for Variables Predicting Who Will Provide an ADHD Diagnosis

Tests of Model Coefficients	Chi-square	*df*	*p*
Hosmer and Lemeshow	5.187	8	.737
Block	9.701	6	.138
Model	77.698	20	<.001

Model Summary

	Cox & Snell *R* Square	Nagelkerke *R* Square
Block 3	.339	.491

Classification Table

Observed		Predicted: Do you provide a diagnosis of ADHD? No	Predicted: Do you provide a diagnosis of ADHD? Yes	Percentage Correct
Do you provide a Diagnosis of ADHD?	No	124	13	90.5
	Yes	22	29	56.9
Overall Percentage*				81.4

(table continues)

Variables in the Equation

Predictor	β	S.E.	Wald	df	*p*	Exp(B)
West	-.240	.669	.129	1	.720	.786
North Central	-.256	.658	.152	1	.697	.774
Northeast	-.217	.579	.141	1	.707	.805
Community	.397	.322	1.522	1	.217	1.487
SES	-.705	.368	3.671	1	.055	.494
Sex	.174	.601	.084	1	.772	1.190
Level of Education	1.316	.478	7.569	1	.006	3.730
Years of Experience	.007	.027	.072	1	.788	1.007
State Cert.	19.011	11973.049	.000	1	.999	1.804E8
National Cert.	1.014	.518	3.842	1	.050	2.758
Licensure	.223	.577	.149	1	.699	1.250
Other Credential	.135	.766	.031	1	.860	1.145
Qualified to Diagnose	1.111	.504	4.850	1	.028	3.037
Confidence to Diagnose	.761	.632	1.451	1	.228	2.141
Train to Assess	-.178	.240	.533	1	.457	.837
Qualified to Assess	-1.112	.710	2.451	1	.117	.329
Confidence to Assess	-.002	.782	.000	1	.998	.998
Assess for Disorder	.439	.610	.517	1	.472	1.551
Assess for Services	.869	1.017	.731	1	.393	2.385
Assess for Interventions	-1.432	1.146	1.562	1	.211	.239

Note. * The cut value is .500.

In the third part of the logistic regression, the outcome variable was whether or not the participants provide interventions for ADHD. In Block 1, the demographic variables served as the predictor variables. The only significant demographic predictor associated with the likelihood that school psychologists provide interventions for ADHD was being a state

certified school psychologist. The results showed that school psychologists who noted being a state certified school psychologist (β = 2.923, *p* = .008) were more likely to provide interventions for ADHD than those who hold another credential such as national certification, licensure, or some other miscellaneous credential. Overall, the combination of the demographic variables did not significantly predict who would provide interventions for ADHD. Refer to Table 38 for a summary of the logistic regression analysis during Block 1.

Table 38

Block 1 of Logistic Regression Analysis for Variables Predicting Who Will Provide Interventions for ADHD

Tests of Model Coefficients	Chi-square	*df*	*p*
Hosmer and Lemeshow	5.281	8	.727
Block	16.099	12	.187
Model	16.099	12	.187

Model Summary

	Cox & Snell *R* Square	Nagelkerke *R* Square
Block 1	.082	.228

(table continues)

Classification Table

Observed		Predicted: Do you provide interventions for ADHD? No	Predicted: Do you provide interventions for ADHD? Yes	Percentage Correct
Do you provide Interventions for ADHD?	No	0	11	0.0
	Yes	1	176	99.4
Overall Percentage*				93.6

Variables in the Equation

Predictor	β	S.E.	Wald	df	*p*	Exp(B)
West	-.649	1.024	.401	1	.526	.523
North Central	-.626	1.032	.367	1	.545	.535
Northeast	.447	1.110	.162	1	.687	1.563
Community	-.382	.483	.624	1	.430	.683
SES	.866	.603	2.065	1	.151	2.379
Sex	-1.075	1.208	.791	1	.374	.341
Level of Education	-1.190	.687	3.003	1	.083	.304
Years of Experience	.014	.043	.115	1	.735	1.015
State Cert.	2.923	1.102	7.033	1	.008	18.606
National Cert.	.449	.717	.392	1	.531	1.566
Licensure	1.499	1.155	1.684	1	.194	4.477
Other Credential	18.797	7877.682	.000	1	.998	1.457E8

Note. * The cut value is .500.

In Block 2 of the logistic regression, the intervention variables were added to the demographic variables to see if they increased the predictive power of the demographic variables. At that level, only one of the demographic and intervention variables, state certification (β = 2.830, *p* = .015),

significantly predicted the likelihood that school psychologists provide interventions for ADHD. Overall, the combination of the demographic and intervention variables did not significantly predict who would provide interventions for ADHD. Refer to Table 39 for a summary of the logistic regression analysis during Block 2.

Table 39

Block 2 of Logistic Regression Analysis for Variables Predicting Who Will Provide Interventions for ADHD

Tests of Model Coefficients	Chi-square	*df*	*p*
Hosmer and Lemeshow	10.570	8	.227
Block	6.805	3	.078
Model	22.904	15	.086

Model Summary

	Cox & Snell *R* Square	Nagelkerke *R* Square
Block 2	.115	.319

Classification Table

Observed		Predicted: Do you provide interventions for ADHD? No	Predicted: Do you provide interventions for ADHD? Yes	Percentage Correct
Do you provide Interventions for ADHD?	No	1	10	9.1
	Yes	1	176	99.4
Overall Percentage*				94.1

(table continues)

Variables in the Equation

Predictor	β	S.E.	Wald	df	*p*	Exp(B)
West	-.146	1.179	.015	1	.902	.864
North Central	-.531	1.115	.227	1	.634	.588
Northeast	.791	1.214	.425	1	.515	2.206
Community	-.764	.562	1.850	1	.174	.466
SES	.667	.640	1.086	1	.297	1.949
Sex	-.494	1.288	.147	1	.701	.610
Level of Education	-1.082	.738	2.152	1	.142	.339
Years of Experience	.035	.049	.501	1	.479	1.035
State Cert.	2.830	1.161	5.942	1	.015	16.939
National Cert.	.362	.770	.221	1	.638	1.437
Licensure	1.127	1.197	.885	1	.347	3.086
Other Credential	18.522	7972.928	.000	1	.998	1.106E8
Train to Intervene	.316	.482	.431	1	.512	1.372
Qualified to Intervene	-.370	.926	.160	1	.689	.691
Confidence to Intervene	1.223	.817	2.238	1	.135	3.397

Note. * The cut value is .500.

In Block 3 of the logistic regression, the assessment variables were added to the demographic and intervention variables to see if they increased the predictive power. At that level, there were two significant predictors associated with the likelihood that school psychologists provide interventions for ADHD, being a state certified school psychologist and beliefs in being qualified to assess for ADHD to determine if the disorder exists. The results identified that holding a state certification (β = 4.910, *p* = .008) and beliefs in being qualified to assess for ADHD to determine if

the disorder exists (β = -2.978, *p* = .031) were significant when entered into the equation. When all the demographic, intervention, and assessment variables were considered together, they significantly predicted whether or not a school psychologists provide interventions for ADHD (χ^2 = 40.569, *df* = 21, *n* = 188, *p* = .006). Overall, 97% of the cases were correctly predicted. The Nagelkerke *R* Square and percentage correct were higher than they were when only demographic and intervention variables were entered. The Nagelkerke *R* Square revealed that the demographic, intervention, and assessment variables accounted for approximately 54% of the variance in determining whether or not the participants provide interventions for ADHD. Refer to Table 40 for a summary of the logistic regression analysis during Block 3.

Table 40

Block 3 of Logistic Regression Analysis for Variables Predicting Who Will Provide Interventions for ADHD

Tests of Model Coefficients	Chi-square	*df*	*p*
Hosmer and Lemeshow	6.958	8	.541
Block	17.665	6	.007
Model	40.569	21	.006

Model Summary

	Cox & Snell *R* Square	Nagelkerke *R* Square
Block 3	.194	.540

(table continues)

Classification Table

Observed		Predicted: Do you provide interventions for ADHD? No	Predicted: Do you provide interventions for ADHD? Yes	Percentage Correct
Do you provide Interventions for ADHD?	No	6	5	54.5
	Yes	0	177	100.0
Overall Percentage*				97.3

Variables in the Equation

Predictor	β	S.E.	Wald	df	*p*	Exp(B)
West	-.651	1.763	.136	1	.712	.522
North Central	-1.458	1.703	.733	1	.392	.233
Northeast	.934	1.723	.294	1	.588	2.546
Community	-.867	.768	1.274	1	.259	.420
SES	.051	.797	.004	1	.949	1.052
Sex	-.253	1.670	.023	1	.880	.776
Level of Education	-1.516	1.067	2.018	1	.155	.220
Years of Experience	.050	.066	.581	1	.446	1.051
State Cert.	4.910	1.848	7.062	1	.008	135.668
National Cert.	.424	.943	.202	1	.653	1.528
Licensure	2.193	1.760	1.553	1	.213	8.958
Other Credential	19.876	6546.161	.000	1	.998	4.286E8
Train to Intervene	.578	.805	.516	1	.473	1.783
Qualified to Intervene	1.785	1.452	1.510	1	.219	5.958
Confidence to Intervene	1.049	1.124	.871	1	.351	2.856
Train to Assess	-.001	.674	.000	1	.999	.999
Qualified to Assess	-.479	1.358	.125	1	.724	.619
Confidence to Assess	1.645	1.337	1.512	1	.219	5.179

(table continues)

Assess for Disorder	-2.978	1.382	4.642	1	.031	.051
Assess for Services	-3.353	2.135	2.467	1	.116	.035
Assess for Interventions	2.600	2.139	1.477	1	.224	13.466

Note. * The cut value is .500.

In Block 4 of the logistic regression, the diagnostic variables were added to the demographic, intervention, and assessment variables to see if they increased the predictive power. At that level, there were two significant predictors associated with the likelihood that school psychologists provide interventions for ADHD, being a state certified school psychologist and beliefs in being qualified to assess for ADHD to determine if the disorder exists. The results reported that holding a state certification ($\beta = 7.660$, $p = .006$) and beliefs in being qualified to assess for ADHD to determine if the disorder exists ($\beta = -4.015$, $p = .012$), were significant when entered into the equation. When all the demographic, intervention, assessment, and diagnostic variables were considered together, they significantly predicted whether or not school psychologists provide interventions for ADHD ($\chi^2 = 48.058$, $df = 23$, $n = 188$, $p = .002$). Overall, 98% of the cases were predicted correctly. The Nagelkerke *R* Square and percentage correct were higher than they were when only demographic, intervention, and assessment variables were entered. The Nagelkerke *R* Square revealed that the demographic, intervention,

assessment, and diagnostic variables accounted for approximately 63% of the variance in determining whether or not the participants provide interventions for ADHD. Refer to Table 41 for a summary of the logistic regression analysis during Block 4.

Table 41

Block 4 of Logistic Regression Analysis for Variables Predicting Who Will Provide Interventions for ADHD

Tests of Model Coefficients	Chi-square	*df*	*p*
Hosmer and Lemeshow	7.918	8	.442
Block	7.489	2	.024
Model	48.058	23	.002

Model Summary

	Cox & Snell *R* Square	Nagelkerke *R* Square
Block 4	.226	.627

Classification Table

Observed		Predicted: Do you provide interventions for ADHD? No	Predicted: Do you provide interventions for ADHD? Yes	Percentage Correct
Do you provide Interventions for ADHD?	No	8	3	72.7
	Yes	1	176	99.4
Overall Percentage*				97.9

(table continues)

Variables in the Equation

Predictor	β	S.E.	Wald	df	*p*	Exp(B)
West	-.808	2.288	.125	1	.724	.446
North Central	-2.453	2.227	1.214	1	.271	.086
Northeast	.967	2.177	.197	1	.657	2.630
Community	-.978	.832	1.384	1	.239	.376
SES	.512	.916	.312	1	.576	1.668
Sex	-.571	2.202	.067	1	.796	.565
Level of Education	-2.356	1.337	3.107	1	.078	.095
Years of Experience	.075	.079	.899	1	.343	1.078
State Cert.	7.660	2.803	7.468	1	.006	2120.732
National Cert.	.178	1.124	.025	1	.874	1.194
Licensure	1.705	2.056	.688	1	.407	5.502
Other Credential	25.262	5440.349	.000	1	.996	9.354E10
Train to Intervene	1.176	.995	1.397	1	.237	3.241
Qualified to Intervene	2.303	1.728	1.776	1	.183	10.005
Confidence to Intervene	-.083	1.335	.004	1	.950	.920
Train to Assess	-.355	.795	.199	1	.655	.701
Qualified to Assess	-2.124	1.879	1.278	1	.258	.120
Confidence to Assess	1.377	1.827	.568	1	.451	3.962
Assess for Disorder	-4.015	1.607	6.244	1	.012	.018
Assess for Services	-2.746	2.176	1.592	1	.207	.064
Assess for Interventions	3.121	2.487	1.575	1	.209	22.673
Qualified to Diagnose	1.673	1.229	1.854	1	.173	5.328
Confidence to Diagnose	.201	1.251	.026	1	.873	1.222

Note. * The cut value is .500.

Research Question 12

Is there a difference between the school psychologists surveyed who indicate that they conduct ADHD assessments and school psychologists who indicate that they do not conduct ADHD assessments for the variables of geographic location, community setting, SES, sex, level of education, years of experience, credentials, beliefs of being well-trained in ADHD assessments, beliefs of being qualified to conduct ADHD assessments, level of confidence in ability to conduct ADHD assessments, beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, and beliefs of being qualified to assess for ADHD to develop interventions?

This was an exploratory question with no hypothesis. Survey items 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17 represented the variables for this research question. Survey item 18a represented the grouping variable. Survey items 1, 3, 4, 5, 6, 8, and 9 asked the participants to supply various demographic information such as geographic location of primary employment setting, nature of community of primary employment setting, SES of primary employment setting, sex, highest level of graduate education, number of years of experience, and credentials. Survey items 10, 11, 12, 13, 14, 15, 16, and 17

asked the participants to indicate their level of agreement to statements measuring beliefs of being well-trained in ADHD assessments, beliefs of being qualified to assess for ADHD, level of confidence in ability to assess for ADHD, beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, and beliefs of being qualified to assess for ADHD to develop interventions. The participants responded strongly agree, agree, neutral, disagree, and strongly disagree to those survey items. Survey item 18a asked the participants if they conducted ADHD assessments and the participants responded yes or no to that item. The differences between the groups for the variables are reported.

The two independent groups were derived from the answer to survey item 18a. The first group consisted of school psychologists who checked that they do conduct ADHD assessments (n = 190). The second group consisted of school psychologists who checked that they do not conduct ADHD assessments (n = 56). A Mann-Whitney U test was calculated to examine if the groups differed significantly within geographic location, community setting, sex, SES, highest level of graduate education, number of years of experience, credentials, beliefs of being well-trained in ADHD assessments, beliefs of being qualified to

assess for ADHD, the level of confidence in ability to assess for ADHD, beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, and beliefs of being qualified to assess for ADHD to develop interventions. The underlying assumptions were checked and were appropriate. A Bonferroni correction was applied in order to reduce familywise error rates. The original alpha level of .05 was reduced by dividing the number of significance tests. After the Bonferroni correction, the new alpha level used for significance comparisons was .002.

A Mann-Whitney *U* test was calculated examining the school psychologists with differing ADHD assessment and diagnostic practices. No significant differences were found between any of the comparisons. Refer to Table 42 for results of the Mann-Whitney *U* comparisons.

Table 42

Mann-Whitney U Comparisons of School Psychologists Who Conduct ADHD Assessments and School Psychologists Who Do Not Conduct ADHD Assessments

Tested Difference	*U*	*p*
West	4904.00	.202
North Central	5278.00	.906
Northeast	5311.00	.981
South	4853.00	.175
Community Setting	5159.00	.705
SES	4895.00	.318
Sex	5184.00	.649
Level of Education	5195.50	.750
Years of Experience	4925.50	.465
State Certification	5192.00	.480
National Certification	5182.00	.720
Licensed Psychologist	4815.00	.091
Other	5271.00	.851
Training to Assess ADHD	4970.00	.438
Qualifications to Assess ADHD	4747.50	.178
Confidence to Assess ADHD	4443.00	.039
Qualifications to Diagnose ADHD	4999.00	.478
Confidence to Diagnose ADHD	4757.00	.209
Qualifications to Assess ADHD to Determine if Disorder Exists	4502.50	.062
Qualifications to Assess ADHD to Determine Services	4254.00	.012
Qualifications to Assess ADHD to Develop Interventions	4487.00	.045

Research Question 13

Is there a difference between the school psychologists surveyed who indicate that they provide an ADHD diagnosis and school psychologists who indicate that they do not provide an ADHD diagnosis for the variables of geographic location, community setting, SES, sex, level of education, years of experience, credentials, beliefs of being well-trained in ADHD assessments, beliefs of being qualified to conduct ADHD assessments, level of confidence in ability to conduct ADHD assessments, beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, and beliefs of being qualified to assess for ADHD to develop interventions?

This was an exploratory question with no hypothesis. Survey items 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17 represented the variables for this research question. Survey item 19 represented the grouping variable. Survey items 1, 3, 4, 5, 6, 8, and 9 asked the participants to include various demographic information such as geographic location of primary employment setting, nature of community of primary employment setting, SES of primary employment setting, sex, highest level of graduate education, number of years of

experience, and credentials. Survey items 10, 11, 12, 13, 14, 15, 16, and 17 asked the participants to indicate their level of agreement to statements measuring beliefs of being well-trained in ADHD assessments, beliefs of being qualified to assess for ADHD, level of confidence in ability to assess for ADHD, beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, and beliefs of being qualified to assess for ADHD to develop interventions. The participants responded strongly agree, agree, neutral, disagree, and strongly disagree to those survey items. Survey item 19 asked the participants if they provided a diagnosis of ADHD when warranted and the participants responded yes or no to that question. The differences between the groups for the variables are reported.

The two independent groups were derived from the answer to survey item 19. The first group consisted of school psychologists who responded that they do provide a diagnosis of ADHD when warranted (n = 51). The second group consisted of school psychologists who replied that they do not provide a diagnosis of ADHD when warranted (n = 139). A Mann-Whitney U test was calculated to examine if the groups differed significantly within geographic location, community setting,

sex, SES, highest level of graduate education, number of years of experience, credentials, beliefs of being well-trained in ADHD assessments, beliefs of being qualified to assess for ADHD, the level of confidence in ability to assess for ADHD, beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, and beliefs of being qualified to assess for ADHD to develop interventions. The underlying assumptions were checked and were appropriate. A Bonferroni correction was applied in order to reduce familywise error rates. After the Bonferroni correction, the new alpha level used for significance comparisons was .002.

A Mann-Whitney *U* test was calculated examining the school psychologists with differing ADHD diagnostic practices. School psychologists who provide an ADHD diagnosis displayed significant differences ($U = 2341.50$, $z = -4.25$, $p < .001$) for level of education than the school psychologists who do not provide an ADHD diagnosis. School psychologists who provide an ADHD diagnosis displayed a significant difference ($U = 2822.00$, $z = -3.20$, $p = .001$) in the area of being a licensed psychologist than the school psychologists who do not provide an ADHD diagnosis. School psychologists who provide a diagnosis of ADHD displayed a significantly higher rating ($U = 2268.50$, $z = -$

4.23, $p < .001$) for the level of confidence in providing assessments for ADHD, a significantly higher rating (U = 1711.50, z = -5.65, $p < .001$) for beliefs of being qualified to diagnose ADHD, a significantly higher rating (U = 1520.50, z = -6.31, $p < .001$) for the level of confidence in providing an ADHD diagnosis, and a significantly higher rating (U = 2280.00, z = -4.02, $p < .001$) for beliefs of being qualified to assess ADHD to determine if the disorder exists. Finally, school psychologists who provide a diagnosis of ADHD displayed a significantly higher rating (U = 2612.50, z = -3.10, p = .002) for beliefs of being qualified to assess ADHD to determine need and appropriateness of services than the school psychologists who do not provide a diagnosis of ADHD. Otherwise, no significant differences were found. Refer to Table 43 for results of the Mann-Whitney U comparisons.

Table 43

Mann-Whitney U Comparisons of School Psychologists Who Provide a Diagnosis of ADHD and School Psychologists Who Do Not Provide a Diagnosis of ADHD

Tested Difference	*U*	*p*
West	3518.50	.914
North Central	3245.00	.239
Northeast	3408.50	.612
South	3355.00	.429
Community Setting	2950.50	.051
SES	2788.50	.014
Sex	3220.50	.137
Level of Education	2341.50	<.001
Years of Experience	2972.00	.115
State Certification	3315.00	.063
National Certification	3191.50	.203
Licensed Psychologist	2822.00	.001
Other	3458.50	.644
Training to Assess ADHD	3275.50	.406
Qualifications to Assess ADHD	2806.50	.015
Confidence to Assess ADHD	2268.50	<.001
Qualifications to Diagnose ADHD	1711.50	<.001
Confidence to Diagnose ADHD	1520.50	<.001
Qualifications to Assess ADHD to Determine if Disorder Exists	2280.00	<.001
Qualifications to Assess ADHD to Determine Services	2612.50	.002
Qualifications to Assess ADHD to Develop Interventions	2869.50	.022

Research Question 14

Is there a difference between the school psychologists surveyed who indicate that they provide interventions for ADHD and school psychologists who indicate that they do not provide interventions for ADHD for the variables of geographic location, community setting, SES, sex, level of education, years of experience, credentials, beliefs of being well-trained in ADHD assessments, beliefs of being qualified to conduct ADHD assessments, level of confidence in ability to conduct ADHD assessments, beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, beliefs of being qualified to assess for ADHD to develop interventions, beliefs of being well-trained in ADHD interventions, beliefs of being qualified to provide ADHD interventions, and level of confidence in ability to provide ADHD interventions?

This was an exploratory question with no hypothesis. Survey items 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 175, 176, and 177 represented the variables for this research question. Survey item 178a represented the grouping variable. Survey items 1, 3, 4, 5, 6, 8, and 9 asked the participants to provide various demographic information such as

geographic location of primary employment setting, nature of community of primary employment setting, SES of primary employment setting, sex, highest level of graduate education, number of years of experience, and credentials. Survey items 10, 11, 12, 13, 14, 15, 16, and 17 asked the participants to indicate their level of agreement to statements measuring beliefs of being well-trained in ADHD assessments, beliefs of being qualified to assess for ADHD, level of confidence in ability to assess for ADHD, beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, and beliefs of being qualified to assess for ADHD to develop interventions. The participants responded strongly agree, agree, neutral, disagree, and strongly disagree to those survey items. Survey items 175, 176, and 177 asked the participants to note their level of agreement to statements measuring their beliefs of being well-trained in ADHD interventions, their beliefs of being qualified to provide ADHD interventions, and their level of confidence in their ability to provide ADHD interventions. The participants responded strongly agree, agree, neutral, disagree, and strongly disagree to those survey items. Survey item 178a asked the participants if they provided interventions for ADHD and the participants responded

yes or no to that item. The differences between the groups for the variables are reported.

The two independent groups were derived from the answer to survey item 178a. The first group consisted of school psychologists who reported that they do provide interventions for ADHD (n = 223). The second group consisted of school psychologists who responded that they do not provide interventions for ADHD (n = 23). A Mann-Whitney U test was calculated to examine if the groups differed significantly within geographic location, community setting, sex, SES, highest level of graduate education, number of years of experience, credentials, beliefs of being well-trained in ADHD assessments, beliefs of being qualified to assess for ADHD, the level of confidence in ability to assess for ADHD, beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, beliefs of being qualified to assess for ADHD to develop interventions, beliefs of being well-trained in ADHD interventions, beliefs of being qualified to provide ADHD interventions, and the level of confidence in ability to provide ADHD interventions. The underlying assumptions were checked and were appropriate. A Bonferroni correction was applied in order to reduce familywise

error rates. After the Bonferroni correction, the new alpha level utilized for significance comparisons was .002.

A Mann-Whitney *U* test was calculated examining the school psychologists with differing ADHD intervention practices. No significant differences were found between any of the comparisons. Refer to Table 44 for results of the Mann-Whitney *U* comparisons.

Table 44

Mann-Whitney U Comparisons of School Psychologists Who Provide Interventions for ADHD and School Psychologists Who Do Not Provide Interventions for ADHD

Tested Difference	*U*	*p*
West	2481.50	.714
North Central	2551.00	.956
Northeast	2443.00	.639
South	2512.50	.828
Community Setting	2553.50	.970
SES	2196.00	.212
Sex	2350.50	.303
Level of Education	2503.00	.821
Years of Experience	2363.50	.580
State Certification	2345.00	.081
National Certification	2423.50	.597
Licensed Psychologist	2350.50	.303
Other	2477.00	.630

(table continues)

Training to Assess ADHD	2550.00	.963
Qualifications to Assess ADHD	2347.50	.462
Confidence to Assess ADHD	2060.00	.088
Qualifications to Diagnose ADHD	2137.00	.173
Confidence to Diagnose ADHD	2214.50	.261
Qualifications to Assess ADHD to Determine if Disorder Exists	2122.00	.146
Qualifications to Assess ADHD to Determine Services	2091.50	.108
Qualifications to Assess ADHD to Develop Interventions	1897.50	.021
Training for ADHD Interventions	2261.50	.328
Qualifications for ADHD Interventions	1867.00	.015
Confidence for ADHD Interventions	1706.00	.003

Summary

This chapter presented results of the data analysis procedures that were discussed in Chapter III in order to present the current assessment and intervention practices of school psychologists regarding ADHD.

This chapter provided a description of the survey procedures and return rate for the study. Five hundred surveys were mailed to school psychologists who were regular NASP members. Two hundred and fifty-six surveys were returned. Of those returned, 246 were useable for a return rate of 49.2%. The participants were evenly spread across the four geographic regions of the country. The majority of participants worked in

a suburban setting. Twenty six percent worked in an urban setting and nearly 21% worked in a rural setting. Nearly 49% of the participants reported that their primary employment setting had a mostly middle SES, 37.8% checked that their primary employment setting had a mostly lower SES, and 13% noted that their primary employment setting had a mostly higher SES. Almost 84% of the participants were female and 16.3% were male. The majority of participants replied that their highest level of education was a specialist degree. Only 8.5% responded that their highest level of education was a master's degree and 25.6% reported that they obtained a doctoral degree. The vast majority of participants indicated that they were a certified school psychologist. The average number of years of experience was 13.6 years. The characteristics of the participants in the current study were similar to those of the most recent NASP membership survey.

The results revealed that 77.2% of the participants conduct assessments for ADHD and 26.8% provide a diagnosis of ADHD. Out of those who do not conduct assessments, 83.9% referred to an outside professional for the assessment. Nearly 91% of the participants provide interventions for ADHD. Seventy-two percent of the school psychologists surveyed conducted between one and 10 assessments in the past year. Nearly 55% of the participants provided between one and 10 interventions in the

past year. Almost 88% of participants believed they were qualified to assess for ADHD and 60.6% of participants believed they were qualified to diagnose ADHD. Nearly 96.3% of participants believed they were qualified to provide ADHD interventions. Almost 88% of participants reported being confident in their ability to assess for ADHD and 64.4% of participants were confident in their ability to diagnose ADHD. The results established that 92.3% of participants were confident in providing ADHD interventions.

The most frequently used methods are classified under the categories of general methods, observations, interviews, and cognitive assessments. Within those methods, the participants noted that they use record reviews, teacher and parent inputs, academic records, and developmental and medical histories most frequently. The most frequently used interventions are positive reinforcement, ongoing support to teachers, behavior plans, environment modifications, instructional strategies, and modifications. Nearly 77% of participants believed that they are qualified to determine if ADHD exists and 89.5% believed they are qualified to determine the need for special education and Section 504 services. Almost 95% of participants believed they are qualified to develop appropriate interventions for ADHD.

Almost 54% of participants believed they are well-trained in performing ADHD assessments and 56.1% believed they are well-trained in ADHD interventions.

Using Pearson *r* and Spearman *rho* analyses, several significant, medium to large relationships were discovered. There was a relationship between level of education and licensure and indication of providing a diagnosis of ADHD. There was a relationship between beliefs about being well-trained to assess for ADHD and to provide ADHD interventions and years of experience. Several relationships were found between beliefs about ADHD such as being qualified to assess, confidence to assess, qualified to diagnose, confidence to diagnose, qualified to asses to determine disorder, qualified to assess to determine services, qualified to assess to develop interventions, qualified to provide interventions, and confidence in providing interventions. Relationships were found between beliefs about being well-trained to assess for ADHD, qualified to assess for ADHD, confidence to assess for ADHD, and well-trained to provide interventions. There were relationships between being well-trained in providing interventions for ADHD, being qualified to provide interventions, and confidence in providing interventions.

Relationships existed between indication of diagnosing ADHD and level of education, confidence to assess and diagnose ADHD, and beliefs about being qualified to diagnose ADHD.

Through several logistic regression analyses, demographic, assessment, diagnostic, and intervention variables were used to predict three outcomes. The outcomes were whether the participants conduct ADHD assessments, provide a diagnosis of ADHD when warranted, and provide interventions for ADHD. When using the demographic variables as predictors, licensure was significant in differentiating which school psychologists were more likely to conduct ADHD assessments. No other predictors were significant when combining the demographic, assessment, and diagnostic variables. Overall, the combination of the demographic variables did not significantly predict who conducted ADHD assessments. The combination of demographic and assessment variables and the combination of demographic, assessment, and diagnostic variables did not significantly predict who conducted ADHD assessments.

In the second part of the logistic regression, the outcome variable was whether the participants provide a diagnosis of ADHD. When using the demographic variables as predictors, level of education, SES, and national certification were significant in differentiating which school psychologists were more likely to provide a diagnosis of ADHD. When all demographic variables

were considered together, they significantly predicted whether the participants provide a diagnosis of ADHD. When using the demographic and diagnostic variables as predictors, level of education was significant in differentiating which participants were more likely to provide a diagnosis of ADHD. Overall, the combined predictors significantly predicted whether the participants provide a diagnosis of ADHD. The demographic, diagnostic, and assessment variables were used as predictors. The results suggested that level of education, national certification, and beliefs in being qualified to diagnose ADHD were significant in differentiating which participants were more likely to provide a diagnosis of ADHD. Overall, the combined predictors significantly predicted whether the participants provide a diagnosis of ADHD.

In the third part of the logistic regression, the outcome variable was whether the participants provide interventions for ADHD. When using the demographic variables as predictors, state certification was significant in differentiating which school psychologists were more likely to provide interventions for ADHD. Overall, the combination of the demographic variables did not significantly predict who provided interventions for ADHD. When using the demographic and intervention variables as predictors, state certification was significant in differentiating which participants provided interventions for

ADHD. Overall, the combined predictors significantly predicted who provided interventions for ADHD. The demographic, intervention, and assessment variables were used as predictors. The results suggested that state certification and beliefs in being qualified to assess for ADHD to determine if the disorder exists were significant in differentiating which participants were more likely to provide interventions for ADHD. Overall, the combined predictors significantly predicted who provided interventions for ADHD. Finally, the demographic, intervention, assessment, and diagnostic variables were used as predictors. The results suggested that state certification and beliefs in being qualified to assess for ADHD to determine if the disorder exists continued to be significant in differentiating which participants provided interventions for ADHD. Overall, the combined predictors significantly predicted who provided interventions for ADHD.

Using Mann-Whitney *U* tests, significant differences were explored. First, comparisons were made between the participants who checked that they conduct ADHD assessments and those who do not conduct ADHD assessments. No noteworthy differences were found between any of the comparisons. Comparisons were also made between participants who provide a diagnosis of ADHD and those who do not diagnose ADHD. Differences were found between level of education, licensure, confidence to assess for ADHD,

qualifications to diagnose ADHD, confidence to diagnose ADHD, qualifications to assess for ADHD to determine if the disorder exists, and qualifications to assess for ADHD to determine services. Finally, comparisons were made between participants who reported that they provide ADHD interventions and those who do not provide interventions for ADHD. No significant differences were discovered between any of the comparisons. The next chapter will discuss the results and how they apply to the assessment and intervention practices of school psychologist regarding ADHD.

CHAPTER V

DISCUSSION

The primary purpose of the current study was to investigate the assessment and intervention practices of school psychologists regarding Attention Deficit Hyperactivity Disorder (ADHD). ADHD is a disorder characterized by significant problems with inattention, hyperactivity, and impulsivity. This study added to the limited body of research investigating the assessment and intervention practices for ADHD and provided clarity within those practices. This chapter reviews the methodological procedures used in this study. The research questions, hypotheses, and results are discussed, implications of the study are introduced and discussed, and limitations of the study are presented. Finally, this chapter provides recommendations for future areas of research.

Review of Methodology

This study was a quantitative, non-experimental research design that used a survey method to collect information regarding the practices of school psychologists regarding assessment and intervention in ADHD. Participants were randomly selected from a national sample of regular NASP members who reported that their primary position is a school psychologist working in a school setting in the United States. Data were collected from the surveys that were mailed to 500 potential

participants. The data collection process included mailing of the initial survey packet, follow-up postcard, follow-up survey packet, and second follow-up survey packet. A total of 256 packets were returned for a response rate of 51.2%. Of the respondents, 49.2% (*n* = 246) were eligible to participate in the study. The response rate of 49.2% compared well to the previous national survey studies reviewed for this study. The previous national survey studies had response rates that ranged from 13% to 62.7% (Chang, 2001; Cushman et al., 2004; Demaray et al., 2003; Goh et al., 1981; Handler, 2000; Hennigen, 1997; Hutton et al., 1992; Koonce, 2007; Miller, 2005; Moore et al., 2005; Rosenberg & Beck, 1986; Smith, 1999; Wilson & Reschly, 1996).

The survey consisted of three sections, Section I: Demographic Information, Section II: ADHD Assessment Information, and Section III: ADHD Intervention Information. Section I, Section II, and Section III were used to identify the geographic information of the participants, to discover ADHD assessment and intervention trends, to identify specific ADHD assessment and intervention practices, to investigate relationships between demographic information and ADHD assessment and intervention trends and practices, and to investigate differences between demographic information and ADHD assessment and intervention trends and practices. Descriptive statistics were calculated for research questions one through

nine. For research question 10, Pearson *r* and Spearman *rho* correlation coefficients were calculated. Binary logistic regression was used to analyze research question 11. Finally, research questions 12, 13, and 14 explored differences using Mann-Whitney *U* tests.

Research Questions and Hypotheses Discussion

Research Question 1

What percentage of the school psychologists surveyed conduct assessments for ADHD, provide a diagnosis of ADHD, refer to an outside professional for an ADHD assessment, provide interventions for ADHD, and refer to an outside professional for interventions with ADHD? It was hypothesized that the majority of school psychologists surveyed would report conducting some form of ADHD assessments and that the minority of school psychologists surveyed would report providing a diagnosis of ADHD. Determining the percentage of school psychologists surveyed that refer to an outside professional for an ADHD assessment and interventions as well as determining the percentage of school psychologists surveyed that provide interventions for ADHD was an exploratory question with no hypothesis.

Results revealed that 77.2% (n = 190) of the participants conduct assessments for ADHD. Of the participants that conduct ADHD assessments, only 26.8% responded that they provide a

diagnosis of ADHD at the end of the assessment if warranted. The results showed that 22.8% (*n* = 56) of the participants do not conduct ADHD assessments. Of the participants that do not conduct ADHD assessments, 83.9% (*n* = 47) checked that they refer to an outside professional for an ADHD assessment. These statistics suggest that the majority of school psychologists surveyed conduct some form of assessment for ADHD. The argument could be made that more school psychologists should be identifying or diagnosing ADHD. Most of the school psychologists surveyed conduct assessments for ADHD and use a wide variety of appropriate instruments as part of that ADHD assessment. Even among the school psychologists who do not conduct ADHD assessments, the majority of them refer to an outside professional for the assessment. They should then have access to that assessment data and would be in an ideal position to make the identification or diagnosis of ADHD.

The results were similar to previous studies that measured conducting assessments. In Miller (2005), 92% of school psychologists surveyed noted routinely conducting some form of ADHD assessments. In Demaray et al. (2003), all of the school psychologists surveyed reported doing some form of assessment for ADHD. Over half of those surveyed also checked referring to an outside professional for additional assessments.

According to Smith (1999), 57% of school psychologists surveyed stated that they did some form of assessment for ADHD.

The statistics suggested that a minority of school psychologists surveyed provide a diagnosis of ADHD. The results were similar to previous studies that measured diagnostic practices. In Smith (1999), 57% of school psychologists surveyed identified that they did some form of assessment for ADHD, but made a referral to a physician for a diagnosis. In addition, only 8% of the school psychologists surveyed stated that they were qualified to diagnose ADHD. In a more recent study, a significant number of school psychologists reported they do not believe school psychologists are qualified to diagnose ADHD and only 30% actually do diagnose ADHD (Demaray et al., 2003).

The results revealed that 90.7% (n = 223) of the participants provided interventions for ADHD. Of the participants that do not provide ADHD assessments, 26.8% (n = 51) replied that they refer to an outside professional for the ADHD interventions implying that the majority of the school psychologists surveyed conduct ADHD interventions. The minority of participants who do not provide ADHD interventions referred to an outside professional for ADHD interventions. School psychologists feel comfortable when intervening with students with ADHD.

School psychologists are typically taking on the role of assessing and intervening for students with ADHD, but only a few of the school psychologists are making a diagnosis of ADHD.

Research Question 2

How frequently are the school psychologists surveyed assessing for ADHD and what percentage of their caseload is comprised of ADHD assessments? This was an exploratory question with no hypothesis.

The results showed that 72% (*n* = 131) of the school psychologists surveyed checked that they have conducted at least 1 to 10 ADHD assessments in the past year. Additionally, 23.6% (*n* = 43) of the respondents reported that they have conducted between 11 and 30 ADHD assessments in the past year. The participants averaged 10.3 evaluations per year. Over 42% (*n* = 76) of the respondents responded that ADHD assessments make up between 1 and 10 percent of their caseload. Additionally, 41.2% (*n* = 73) of the respondents reported that ADHD assessments make up between 11 and 30 percent of their caseload. ADHD assessments averaged 19.1 percent of the participants' caseload. ADHD assessments are a common part of the school psychologists' assessment practices. Since school psychologists frequently performed ADHD assessments and were a major part of their assessment caseload, the argument that more school psychologists should be identifying or diagnosing ADHD is supported. An

important part of the ADHD assessment is to provide assessment for a diagnosis (Pelham et al., 2005). Since the assessment of ADHD is such a common part of their caseload, school psychologists should be comfortable with ADHD and its identification.

Research Question 3

How frequently are the school psychologists surveyed providing interventions for ADHD and what percentage of their caseload is comprised of providing interventions for ADHD? This was an exploratory question with no hypothesis.

Over 54% (n = 84) of the respondents checked that they have provided between 1 and 10 interventions for ADHD in the past year. Thirty-six percent (n = 55) of the respondents reported that they have provided between 11 and 30 interventions for ADHD in the past year. The participants averaged 15.5 interventions per year. Nearly 31% (n = 48) of the respondents stated that ADHD interventions make up between 1 and 10 percent of their caseload. Thirty-eight percent (n = 60) of the respondents reported that ADHD interventions make up between 11 and 30 percent of their caseload. ADHD interventions averaged 29.8 percent of the participants' caseload. ADHD interventions are a common part of the school psychologists' intervention practices. School psychologists frequently provide ADHD interventions and the interventions are a major part of their caseload. An

important part of the ADHD assessment is to plan for intervention and to evaluate the outcomes of the interventions (Pelham et al., 2005). School psychologists appear self-assured with their role in the intervention of ADHD.

Research Question 4

What is the level of agreement that the school psychologists surveyed indicate for statements regarding their qualifications in assessing for ADHD, diagnosing ADHD, and providing interventions for ADHD? It was hypothesized that the majority of the school psychologists surveyed would report being qualified to assess for ADHD, but fewer would report being qualified to diagnose ADHD. Determining how often the school psychologists surveyed indicate they are qualified to provide interventions for ADHD was an exploratory question with no hypothesis.

The majority of the respondents (88.2%, *n* = 217) noted that they strongly agreed or agreed that they are qualified to assess for ADHD. Additionally, 8.9% (*n* = 22) of respondents were neutral to the statement that they are qualified to assess for ADHD. Only 2.8% (*n* = 7) of respondents either disagreed or strongly disagreed that they are qualified to assess for ADHD. The results suggest that the majority of school psychologists believe they are qualified to assess for ADHD.

School psychologists are frequently conducting ADHD assessments and believe they are qualified to complete those assessments.

Over 60% (*n* = 149) of respondents either strongly agreed or agreed that they are qualified to diagnose ADHD. Additionally, 19.1% (*n* = 47) of respondents reported being neutral to the statement that they are qualified to diagnose ADHD. The minority of respondents (20.3%, *n* = 50) stated that they either disagreed or strongly disagreed that they are qualified to diagnose ADHD.

The number of school psychologists who strongly agreed or agreed that they are qualified to diagnose ADHD was fewer than the number of school psychologists who strongly agreed or agreed that they are qualified to assess for ADHD. However, the number of school psychologists who strongly agreed or agreed that they are qualified to diagnose ADHD was much higher than previously believed. Previous research illustrated that 57% of school psychologists surveyed stated that they did some form of assessment for ADHD, but only made a referral to a physician for a diagnosis. Only 8% of the school psychologists surveyed designated that they are qualified to diagnose ADHD (Smith, 1999). In a more recent study, a significant number of school psychologists reported they do not believe school psychologists are qualified to diagnose ADHD and only 30% actually do diagnose ADHD (Demaray et al., 2003). This increase in the number of

school psychologists who believe they are qualified to diagnose ADHD suggests that school psychologists are becoming more confident with their role in ADHD. It appears that a change in the role of the school psychologist and their beliefs regarding qualifications in assessing and diagnosing ADHD may be occurring. This is probably due to the commonplace of the ADHD evaluation for school psychologists. ADHD is a frequent disability recognized by school districts and ADHD is becoming more accepted within schools.

Only 26.8% of the participants responded that they provide a diagnosis of ADHD at the end of the assessment if warranted. Whereas, over 60% of respondents either strongly agreed or agreed that they are qualified to diagnose ADHD. It appears that school psychologists feel they are qualified to diagnose ADHD, but these feelings have not translated into them doing so in practice. This difference between beliefs and practice may be due to state and school district regulations. The difference may also be accounted for by confusion in terminology. School psychologists may not have been comfortable with the word diagnosis, but they may still be identifying ADHD without calling it a diagnosis.

The vast majority of respondents (96.3%, *n* = 237) reported that they either strongly agreed or agreed that they are qualified to provide interventions for ADHD. Only 0.8% (*n* = 2)

of the respondents either disagreed or strongly disagreed that they are qualified to provide interventions for ADHD. The vast majority of school psychologists believe they are qualified to provide ADHD interventions. This belief in being qualified to provide ADHD interventions can be seen in school psychologists' actual practice. Almost 91% of the participants provide interventions for ADHD.

Research Question 5

What is the level of confidence of the school psychologists surveyed regarding their ability to assess, to diagnose, and to provide interventions for ADHD? It was hypothesized that the school psychologists surveyed would be confident in their ability to assess for ADHD, but less confident in their ability to diagnose ADHD. Further, it was hypothesized that the school psychologists surveyed would be confident in their ability to provide interventions for ADHD.

Forty-eight percent (n = 118) of the school psychologists surveyed responded that they strongly agreed that they are confident in their ability to assess for ADHD. The results showed that 39.8% (n = 98) of respondents agreed that they are confident in their ability to assess. Additionally, 7.7% (n = 19) of respondents reported that they remained neutral when responding to the statement about the confidence in their ability to assess. Only 4.5% (n = 11) of respondents either

disagreed or strongly disagreed that they are confident in their ability to assess. School psychologists are frequently conducting ADHD assessments and believe they are confident in their abilities to assess for ADHD. Only a small percentage of the respondents are not confident in their abilities to assess for ADHD. These results appear to be similar to that of Smith (1999) where the school psychologists surveyed rated their overall confidence regarding assessment and intervention practices for ADHD to be within the somewhat confident to very confident range.

Over 38% (*n* = 94) of respondents strongly agreed that they are confident in their ability to diagnose ADHD. Twenty-six percent (*n* = 64) of respondents agreed that they are confident in their ability to diagnose. Additionally, 17.1% (*n* = 42) of respondents checked that they remain neutral when responding to the statement about the confidence in their ability to diagnose. The minority of respondents (18.7%, *n* = 46) designated that they either disagreed or strongly disagreed that they are confident in their ability to diagnose.

The number of school psychologists who strongly agreed or agreed with the statement that they are confident to diagnose ADHD was fewer than the number of school psychologists whom strongly agreed or agreed with the statement that they are confident to assess for ADHD. However, the number of school

psychologists whom strongly agreed or agreed with the statement that they are confident to diagnose ADHD is much higher than previously believed. Previous research illustrated that the majority of school psychologists surveyed stated that they do some form of assessment for ADHD, but only make a referral to a physician for a diagnosis. Only 8% of the school psychologists surveyed believed they are qualified to diagnose ADHD (Smith, 1999). In a more recent study, a significant number of school psychologists reported they do not believe school psychologists are qualified to diagnose ADHD and only 30% actually do diagnose ADHD (Demaray et al., 2003). This increase in the number of school psychologists who are confident to diagnose ADHD suggests that school psychologists are becoming more confident with their role in ADHD. These findings were similar to the differences found between the beliefs about being qualified to assess and the beliefs about being qualified to diagnose ADHD. These results support the idea that a change in the role of the school psychologist and their level of confidence in assessing and diagnosing ADHD may be occurring. This increase in the number of school psychologists who believe they are qualified to diagnose ADHD suggests that school psychologists are becoming more confident with their role in ADHD. This is probably due to the commonplace of the ADHD evaluation for school psychologists. This also may be signaling a change in beliefs that ADHD is no

longer strictly a medical diagnosis. ADHD is frequent disability recognized by school districts and ADHD is becoming more accepted within schools.

Only 26.8% of the participants responded that they provide a diagnosis of ADHD at the end of the assessment if warranted. Whereas, 64% of respondents either strongly agreed or agreed that they are confident in their ability to diagnose ADHD. It appears that school psychologists are confident in their ability to diagnose ADHD, but this confidence does not translate into their practices. This difference between beliefs and practice may be due to state and school district regulations or confusion in terminology. The school psychologists' beliefs of being qualified and level of confidence in assessing and diagnosing ADHD is supported by the idea that school psychologists are ready to take a more active role in identifying or diagnosing ADHD.

The school psychologists surveyed responded that they either strongly agreed or agreed that they are confident in their ability to provide interventions for ADHD 92.3% (*n* = 227) of the time. Additionally, 6.5% (*n* = 16) of respondents stated that they remain neutral when responding to the statement about the confidence in their ability to intervene. Only 1.2% (*n* = 3) of respondents either disagreed or strongly disagreed that they are confident in their ability to intervene for ADHD. The vast

majority of school psychologists are confident in their ability to provide interventions for ADHD. These results were similar to that of Smith (1999) where the school psychologists surveyed rated their overall confidence regarding assessment and intervention practices for ADHD to be within the somewhat confident to very confident range. This level of confidence in providing ADHD interventions can be seen in school psychologists' actual practice. Almost 91% of the participants provided interventions for ADHD.

Research Question 6

When assessing for ADHD, how frequently do the school psychologists surveyed administer the various chosen assessment instruments? This was an exploratory question with no hypothesis.

Of the 246 respondents, 77.2% (n = 190) of the school psychologists surveyed replied that they conduct assessments for ADHD. These results were based on the responses of 190 of those participants. When looking at the results overall, the respondents reported that the most frequently used methods are instruments under the general methods category (M = 3.35). In order, the most frequently used methods were under the observational methods (M = 1.65), interview methods (M = 1.59), cognitive/intelligence assessments (M = .71), achievement assessments (M = .64), adaptive behavior assessments (M = .61),

behavior rating scales (*M* = .46), ADHD rating scales (*M* = .43), memory and learning assessments (*M* = .39), neuropsychological assessments (*M* = .32), projective/personality assessments (*M* = .29), and continuous performance assessments (*M* = .10). These results suggest that school psychologists are using multiple sources, methods, and settings in order to assess for ADHD (Demaray et al., 2003; Koonce, 2007). According to Koonce (2007), school psychologists were using interviews, observations, rating scales, psychological testing, educational testing, visual-motor testing, neuropsychological testing, and projective methods in assessment of ADHD.

The most commonly used methods within the general category were reviewing school records/history, reviewing teacher input, reviewing academic performance, reviewing parent input, reviewing developmental history, and reviewing medical history. One-hundred percent (*n* = 190) of the school psychologists surveyed responded that they use a review of school records/history either always or often. The respondents specified that they use a review of teacher input either always or often 98.9% (*n* = 188) of the time, that they use a review of academic performance either always or often 98.4% (*n* = 187) of the time, and that they use a review of parent input either always or often 99.5% (*n* = 189) of the time. Finally, the respondents checked that they use a review of developmental

history either always or often 96.3% (*n* = 183) of the time and that they employ a review of medical history either always or often 94.2% (*n* = 179) of the time.

School records should be reviewed to help pinpoint the onset and course of classroom ADHD related difficulties. A review of academic performance is helpful in measuring day-to-day performance on classroom tasks and homework (DuPaul & Stoner, 2003). Teacher and parent input is a significant part of the evaluation process. Developmental and medical histories should be used to identify causal factors associated with medical conditions and to help establish any pattern of related maladaptive behavior (Conners, 2006). The vast majority of respondents reviewed these areas often or always in there assessment of ADHD. School psychologists are including these important components of an ADHD evaluation in their assessments.

The most commonly used methods under the interview category are teacher interviews, parent interviews, child interviews, and the BASC-2 – Structured Developmental History (SDH). Results showed that the respondents use teacher interviews either always or often 92.1% (*n* = 175) of the time. The respondents noted that they use parent interviews either always or often 86.8% (*n* = 165) of the time. The respondents reported that they use child interviews either always or often 82.7% (*n* = 157) of the

time. Finally, the respondents stated that they use the BASC-2 – SDH either always or often 34.2% (*n* = 65) of the time.

Parent interviews are an indispensable part of the ADHD evaluation. Parents are able to provide information regarding behavior at home and in the community. No other source has the wealth of information parents can provide. Teacher interviews are a second source of indispensible information about the child's psychological adjustment in the school environment. The child interview is an opportunity to observe language skills, interpersonal skills, eye contact, and thought processing. It serves as a time to become acquainted with the child, to review the referral reason, to discuss family functioning and peer relations, and to address perceptions (Barkley, 2006). The majority of participants responded that they use all three types of interviews frequently as part of their ADHD evaluations. School psychologists are gathering information from three important sources during assessments.

The most commonly used observational methods are general observations, systematic observations and the BASC-2 – Student Observation System (SOS). Over 93% (*n* = 177) of the respondents checked that they use general observations either always or often. The respondents reported that they use systematic observations either always or often 79.5% (*n* = 151) of the time. Finally, the respondents stated that they use the BASC-2 – SOS

either always or often 13.1% (*n* = 25) of the time. For the BASC-2 SOS, the respondents checked that they use it seldom or never 72.1% (*n* = 137) of the time.

Direct observation of student behavior should be conducted on several occasions and across settings or situations. Observations provide supplemental information that is potentially less biased than interview and rating scale data (DuPaul & Stoner, 2003). The majority of respondents are frequently conducting general or systematic observations. The fact that so many school psychologists are using observations as part of their ADHD assessments is a positive practice. School psychologists are gathering direct data of the student's behaviors. These observations are occurring in school situations that often manifest the behaviors related to ADHD.

The most commonly used instruments under the behavior rating scales category are the BASC-2, CBRS, Social Skills Rating System, and ASEBA. The most commonly used instrument is the BASC-2 which the respondents use either always or often 82.1% (*n* = 156) of the time. The respondents reported that they use the CBRS either always or often 35.3% (*n* = 67) of the time. The majority of respondents established usage for the CBRS to be seldom or never 50.5% (*n* = 96) of the time. The respondents stated that they use the Social Skills Rating System either always or often only 11.1% (*n* = 21) of the time. The majority

of respondents reported usage for the Social Skills Rating System to be seldom or never 71.5% (*n* = 136) of the time. The respondents checked that they use the ASEBA either always or often only 7.4% (*n* = 14) of the time. The majority of respondents indicated usage for the ASEBA to be seldom or never 78.4% (*n* = 149) of the time.

One or both parents should complete rating scales to determine the child's ADHD related behaviors and other problem behaviors. Teachers should also complete rating scales in order to validate any ADHD conclusions and to gain input from multiple settings. A general or broad-band behavior rating scale should be used as well as a specific or narrow-band rating scale (DuPaul & Stoner, 2003). The results revealed that the most commonly used broad-band behavior rating scale is the BASC-2. It appears that school psychologists are including some form of broad-band behavior rating scale as part of their ADHD assessment. It is recommended that an ADHD evaluation should investigate family situational factors to help develop interventions (Conners, 2006). The results showed that the vast majority of respondents did not use the rating scales that measure family situational factors. This is an important area of practice that is lacking and needs to be improved.

School psychologists may not be focusing on family situational factors due to the limited contact that they have with the entire family situation.

The most commonly used instruments under the ADHD rating scales category are the Conners 3, ADDES-3, Brown Attention-Deficit Disorder Scales, and the ADHD-IV Rating Scale. The most commonly used instrument is the Conners 3 which the respondents use either always or often 62.1% (*n* = 118) of the time. The respondents checked that they use the ADDES-3 either always or often only 6.3% (*n* = 12) of the time. The majority of respondents established usage for the ADDES-3 to be seldom or never 78.4% (*n* = 149) of the time. The respondents stated that they use the Brown Attention-Deficit Disorder Scales either always or often only 6.3% (*n* = 12) of the time. The majority of respondents reported usage for the Brown Attention-Deficit Disorder Scales to be seldom or never 86.3% (*n* = 164) of the time. The respondents checked that they use the ADHD-IV Rating Scale either always or often only 3.7% (*n* = 7) of the time. The majority of respondents reported usage for the ADHD-IV Rating Scale to be seldom or never 86.9% (*n* = 165) of the time.

Parent and teacher rating scales are an important part of the ADHD evaluation. An ADHD specific or narrow-band rating scale should be used in conjunction with a broad-band rating scale (DuPaul & Stoner, 2003). The results revealed that the

most commonly used narrow-band behavior rating scale is the Conners 3. It appears that school psychologists are including some form of narrow-band behavior rating scale as part of their ADHD assessment.

The most commonly used instruments under the continuous performance assessments category are the CPT-II, T.O.V.A., and IVA. The most commonly used instrument is the CPT-II which the respondents use either always or often only 5.2% (*n* = 10) of the time. The majority of respondents established usage for the CPT-II to be seldom or never 91.6% (*n* = 174) of the time. The respondents checked that they use the T.O.V.A often only 1.1% (*n* = 2) of the time. The majority of respondents reported usage for the T.O.V.A. to be seldom or never 96.9% (*n* = 184) of the time. The respondents stated that they use the IVA often only 1.6% (*n* = 3) of the time. The majority of respondents indicated usage for the IVA to be seldom or never 97.9% (*n* = 186) of the time.

Continuous performance tests are the most popular and commonly studied form of testing for use in ADHD evaluations (Barkley, 2006). Continuous performance tests have been shown to be the most reliable psychological test for discriminating groups of children with ADHD from nondisabled children (Frazier, Demaree, & Youngstrom, 2004). The vast majority of respondents specified they are not using continuous performance assessment

instruments frequently during their ADHD assessments. Despite their popularity and potential utility of continuous performance tests, school psychologists are not using them as part of their practice. School psychologists may not believe in the importance of continuous performance tests or they may not be trained in their use and interpretation. Another explanation may be that school psychologists face time and economic constraints that limit their usage.

The most commonly used instruments under the cognition/intelligence assessments category are the WISC-IV, WJIII NU-COG, WAIS-IV, WPPSI-III, and KABC-II. The most commonly used instrument is the WISC-IV which the respondents use either always or often 54.8% (*n* = 104) of the time. The respondents reported that they use the WJIII NU-COG either always or often 20.5% (*n* = 39) of the time. The majority of respondents indicated usage for the WJIII NU-COG to be seldom or never 60% (*n* = 104) of the time. The respondents checked that they use the WAIS-IV either always or often 19% (*n* = 36) of the time. The majority of respondents noted usage for the WAIS-IV to be seldom or never 62.1% (*n* = 118) of the time. The respondents stated that they use the WPPSI-III either always or often only 10.7% (*n* = 24) of the time. The majority of respondents established usage for the WPPSI-III to be seldom or never 64.7% (*n* = 123) of the time. The respondents reported

that they use the KABC-II either always or often only 10.5% (*n* = 20) of the time. The majority of respondents noted usage for the KABC-II to be seldom or never 68.4% (*n* = 130) of the time.

The information gathered through intelligence testing is often considered important to differential diagnosis. Children with ADHD routinely score lower on intellectual ability measurements, but such cognitive characteristics are also indicative of other disorders. Intelligence tests have not been shown to be valuable in detecting ADHD characteristics specifically (Barkley, 2006). It appears that school psychologists are using intelligence tests in evaluating for specific learning disabilities, which are often comorbid with ADHD. The most commonly used instrument is the WISC-IV. These findings are similar to other studies (Demaray, Schaefer, & Delong, 2003; Koonce, 2007).

The most commonly used instruments under the achievement assessments category are the WJIII NU-ACH, WIAT-III, KTEA-II, and WJIII NU Form C/Brief Battery. The most commonly used instrument is the WJIII NU-ACH which the respondents used either always or often 34.8% (*n* = 66) of the time. The respondents checked that they use the WIAT-III either always or often 22.6% (*n* = 43) of the time. The majority of respondents reported usage for the WIAT-III to be seldom or never 52.6% (*n* = 100) of the time. The respondents identified that they use the KTEA-II

either always or often 13.7% (*n* = 26) of the time. The majority of respondents determined usage for the KTEA-II to be seldom or never 76.3% (*n* = 145) of the time. The respondents stated that they use the WJIII NU Form C/Brief Battery often only 7.4% (*n* = 14) of the time. The majority of respondents reported usage for this instrument to be seldom or never 84.8% (*n* = 161) of the time.

Achievement testing along with intelligence testing information is often considered important to differential diagnosis. Intelligence and achievement testing contributes to ADHD identification in indirect ways by documenting impairments, ruling out learning disorders, and measuring response to academic demands. It is recommended that some measurement of intellectual and academic achievement functioning be used during the evaluation of ADHD (Barkley, 2006). It appears that school psychologists are using both intelligence and achievement testing in evaluating for specific learning disabilities that are often comorbid with ADHD. The most commonly used instrument was the WJIII NU-ACH. These findings are similar to those found in Demaray et al. (2003).

The most commonly used instruments under the neuropsychological assessments category are the VMI-5, BRIEF, Bender-Gestalt II, TAPS-3, and NEPSY-II. The most commonly used instrument is the VMI-5 which the respondents used either always

or often 24.2% (*n* = 46) of the time. The respondents checked that they use the BRIEF either always or often 28.9% (*n* = 55) of the time. The majority of respondents reported usage for the BRIEF to be seldom or never 56.8% (*n* = 108) of the time. The respondents indicated that they use the Bender-Gestalt II either always or often only 9% (*n* = 17) of the time. The majority of respondents determined usage for the Bender-Gestalt II to be seldom or never 72.1% (*n* = 137) of the time. The respondents stated that they use the TAPS-3 either always or often only 8.4% (*n* = 16) of the time. The majority of respondents reported usage for the TAPS-3 to be seldom or never 81.6% (*n* = 155) of the time. The respondents checked that they use the NEPSY-II either always or often only 5.8% (*n* = 11) of the time. The majority of respondents established usage for the NEPSY-II to be seldom or never 82.7% (*n* = 157) of the time.

Neurological factors are considered a main contributor to ADHD. ADHD is associated with executive functioning deficits. Inclusion of neuropsychological tests is typically justified to assess such neurological functions like executive functioning (Barkley, 2006). Evidence does not suggest that a core neuropsychological assessment offers better understanding of a child's functioning than a psychoeducational assessment. Certain individual neuropsychological tests are important in the ADHD evaluation process especially those that measure the

construct of executive functioning (Frazier et al., 2004). There is evidence to suggest that the use of neuropsychological tests aids in diagnosing ADHD (Culbertson & Krull, 1996; Grodzinsky & Diamond, 1992). Contrasting evidence suggests that neuropsychological tests have problems with reliability and validity (Burcham & DeMers, 1995). There is also a high rate of false positives and negatives (Brock, 1997; Grodzinsky & Barkley, 1999). The findings suggest that school psychologists are not using neuropsychological assessment instruments frequently during their ADHD assessments. Even on an instrument such as the BRIEF that measures the construct of executive functioning, the participants responded that they use the BRIEF always or often only 28.9% (n = 55) of the time. The majority of respondents reported that they seldomly or never use neuropsychological instruments. School psychologists are not measuring neuropsychological factors despite the evidence of their importance and role in ADHD. It may be that school psychologists are not trained in the use and interpretation of these instruments or they may not feel comfortable administering such assessments. Another explanation may be that school psychologists do not have the economic resources or time available to complete neuropsychological assessments. This is an area of practice where school psychologists need improvement.

The most commonly used instruments under the memory and learning assessment category are the WRAML2, CMS, and TOMAL-2. The most commonly used instrument is the WRAML2 which the respondents used often 15.3% (*n* = 29) of the time. The majority of respondents reported usage for the WRAML2 to be seldom or never 65.8% (*n* = 125) of the time. The respondents checked that they use the CMS either always or often only 2.6% (*n* = 5) of the time. The majority of respondents determined usage for the CMS to be seldom or never 87.8% (*n* = 167) of the time. The respondents stated that they use the TOMAL-2 often only 2.1% (*n* = 4) of the time. The majority of respondents indicated usage for the TOMAL-2 to be seldom or never 87.9% (*n* = 167) of the time. These statistics suggest that school psychologists are not using memory and learning assessments frequently during their ADHD assessments. It appears that school psychologists are relying on other measures during their ADHD assessments.

The most commonly used instruments under the adaptive behavior assessment category are the Vineland-II, ABAS-II, and SIB-R. The most commonly used instrument is the Vineland-II which the respondents used either always or often 13.7% (*n* = 26) of the time. The majority of respondents reported usage for the Vineland-II to be seldom or never 52.1% (*n* = 99) of the time. The respondents checked that they use the ABAS-II either always or often 14.8% (*n* = 28) of the time. The majority of

respondents determined usage for the ABAS-II to be seldom or never 60.5% (*n* = 115) of the time. The respondents noted that they use the SIB-R often only 3.2% (*n* = 6) of the time. The majority of respondents reported usage for the SIB-R to be seldom or never 88.4% (*n* = 168) of the time.

These statistics suggest that school psychologists are not using adaptive behavior assessment instruments frequently during their ADHD assessments.

The most commonly used projective/personality assessment instruments are Sentence Completion, House-Tree-Person Drawing, Kinetic Drawing, and the Roberts-2. The most commonly used instrument is Sentence Completion which the respondents used either always or often 18.5% (*n* = 35) of the time. The respondents noted that they use House-Tree-Person Drawings either always or often only 6.8% (*n* = 13) of the time. The majority of respondents reported usage for House-Tree-Person Drawings to be seldom or never 77.3% (*n* = 147) of the time. The respondents identified that they use Kinetic Drawings either always or often only 5.8% (*n* = 11) of the time. The majority of respondents determined usage for Kinetic Drawings to be seldom or never 70.5% (*n* = 153) of the time. The respondents checked that they use the Roberts-2 often only 1.6% (*n* = 3) of the time. The majority of respondents reported usage for the Roberts-2 to be seldom or never 82.6% (*n* = 157) of the time.

Projective measures have not been shown to contribute to the predictive validity in the identification of ADHD, but they may be useful when investigating behavioral or emotional issues as part of the referral question (Barkley, 2006). These findings suggest that school psychologists are not using projective/personality assessments frequently during their ADHD assessments. The most commonly used instruments are Sentence Completion, House-Tree-Person Drawing, Kinetic Drawing, and the Roberts-2. Those instruments were still used on a limited basis.

The results showed that school psychologists are using multiple sources of information, employing multiple methods, and investigating in multiple settings as part of their ADHD assessments. These results are similar to previous studies that found that school psychologists were frequently using interviews, observations, rating scales, psychological testing, educational testing, visual-motor testing, neuropsychological testing, and projective methods in assessment of ADHD (Demaray et al., 2003; Koonce, 2007). In the current study, 86.9% of the school psychologists surveyed reported using the WISC-IV at one time during an ADHD assessment. Over 60% of the respondents reported using the WJIII NU-ACH at one time during an ADHD assessment. Almost 96% of the respondents reported using the BASC-2 at one time during an ADHD assessment. Nearly 80% of the

respondents reported using the Conners 3 at one time during an ADHD assessment. These findings are similar to the Miller (2005) study where 65% of school psychologists surveyed identified that certain tests were used more often such as a Wechsler Intelligence Scale for Children, Behavior Assessment System for Children, Conners Rating Scales, and Woodcock-Johnson Tests of Achievement.

The respondents are also using a wide variety of instruments to varying extents as part of their ADHD assessments. The differing usage of the various instruments suggests that there is a need for a more standardized battery in the assessment of ADHD. Standardized batteries are useful in the assessment of many different disabilities. Standardized batteries are helpful in eliminating diagnosis bias (Miller, 2005).

School psychologists are frequently reviewing school records, teacher input, academic performance, parent input, developmental history, and medical history as part of their ADHD assessments. They are frequently conducting interviews and observations. School psychologists are frequently using rating scales and psychoeducational testing. To a lesser extent, school psychologists are administering neuropsychological testing. Some areas may be important to measure, but not a priority due to time constraints or economic limitations.

School psychologists are performing all of the necessary assessments in order to diagnose or identify ADHD. They are in an ideal position to conduct those assessments. These practices further support the idea that more school psychologists should be identifying or diagnosing ADHD.

Research Question 7

When providing interventions for ADHD, how frequently do the school psychologists surveyed provide the various identified interventions for ADHD? This was an exploratory question with no hypothesis.

Of the 246 respondents, 90.7% (*n* = 223) of the school psychologists surveyed checked that they provide interventions for ADHD. These results were based on the responses of those 223 participants. The most commonly used interventions for ADHD are using positive reinforcement, providing ongoing support to teachers, recommending a combination of interventions, creating a behavior intervention plan for the student, modifying environmental factors, recommending instructional strategies, modifying academic tasks, providing instructional consultation to teachers, providing teacher education on ADHD, and recommending a positive behavior support system.

Over 78 percent (*n* = 175) of the school psychologists surveyed noted that they recommend using positive reinforcement either always or often. Only 3.1% (*n* = 7) of the respondents

reported using positive reinforcement either seldom or never. The respondents stated that they provide ongoing support to teachers either always or often 76.7% (*n* = 171) of the time. Only 5.4% (*n* = 12) of the respondents reported providing ongoing support to teachers either seldom or never. The majority of the respondents checked that they recommend a combination of interventions either always or often 72.7% (*n* = 162) of the time. Nearly 7% (*n* = 15) of the respondents reported recommending a combination of interventions either seldom or never. The respondents noted that they created a behavior intervention plan either always or often 71.8% (*n* = 160) of the time. Only .8% (*n* = 2) of the respondents reported seldom or no usage when creating behavior intervention plans. The majority of the respondents identified that they recommend modifying environmental factors either always or often 69.1% (*n* = 154) of the time. Less than 6% (*n* = 12) of the respondents reported seldomly or never recommending modification of environmental factors. The respondents stated that they recommend instructional strategies either always or often 67.3% (*n* = 150) of the time. Only 7.1% (*n* = 16) of the respondents reported seldom or no usage when recommending instructional strategies. Over 58 percent (*n* = 131) of the respondents checked that they recommend modifying academic tasks either always or often. Only 6.7% (*n* = 15) of the respondents reported modifying academic

tasks either seldom or never. The respondents identified that they provide instructional consultation to teachers either always or often 59.2% (*n* = 132) of the time. The respondents checked that they provide teacher education on ADHD either always or often 51.1% (*n* = 114) of the time. The respondents determined that they recommend participation in a positive behavior support system either always or often 56.5% (*n* = 126) of the time.

For the current study, the most commonly reported interventions for ADHD are among the most frequently recommended in the literature (DuPaul et al., 2002; DuPaul et al., 2008; Hoff et al., 2002; Power & Mautone, 2008; Tobin et al., 2008). A previous study found that the most likely provided interventions were consultation with teacher, development of contingency management techniques, monitoring effectiveness of classroom interventions, and referral to physician for medication. The least likely interventions to be provided were facilitating parental support groups, providing parent trainings, and conducting student counseling (Smith, 1999). The current study found similar trends.

The most commonly used interventions are ones that can be performed within the school environment. School psychologists are employing interventions that they have immediate access to such as working with the students, working with the teachers, or

modifying the classroom environment. School psychologists are less likely to perform an intervention that lies outside of the school environment. Children with ADHD have difficulties within family and peer relationships, yet the current findings suggest that school psychologists are not frequently providing interventions related to those relationships. School psychologists are focusing more on direct interventions and typically have less accessibility to parents and outside professionals. This is an important intervention and an area where school psychologists need to improve their practice.

Smith's (1999) results revealed that only 14% of the school psychologists surveyed considered a Section 504 plan when a student did not qualify for special education services. In this study, the school psychologists surveyed responded that they recommend a Section 504 plan sometimes, often, or always 78.9% (*n* = 176) of the time. It appears that Section 504 plans have become a more common intervention. These plans appear to have become more acceptable to parents and schools.

Moore et al. (2005) found that 54.5% of the school psychologists surveyed were actually monitoring the effects of the medication. In this study, the respondents indicated that they consulted with a physician to monitor medication dosage and efficacy sometimes, often, or always 71.8% (*n* = 160) of the time. It appears that medication monitoring may be becoming a

more common practice for school psychologists. Medication usage in the treatment of ADHD has become more prevalent. It seems that school psychologists are responding to that trend by monitoring medication dosage and efficacy.

Research Question 8

What is the level of agreement that the school psychologists surveyed indicate for statements regarding their qualifications in assessing for ADHD to determine if the disorder exists, to determine the need and appropriateness of special education or Section 504 services, and to develop appropriate interventions? This was an exploratory question with no hypothesis.

The majority of the respondents (77.3%, *n* = 190) replied that they strongly agreed or agreed that they are qualified to assess for ADHD to determine if the disorder exists. Additionally, 14.2% (*n* = 35) of respondents were neutral to the statement that they are qualified to assess for ADHD to determine if the disorder exists. Only 8.5% (*n* = 21) of respondents either disagreed or strongly disagreed that they are qualified to assess for ADHD to determine if the disorder exists. The results suggested that the majority of school psychologists believe they are qualified to assess for ADHD to determine if the disorder exists. School psychologists are frequently completing ADHD assessments and believed they are

qualified to complete assessments. This suggests that school psychologists are more comfortable with being qualified to determine if the disorder exists rather than diagnosing ADHD. The difference may be due more to terminology than the actual practice of identifying the disorder.

Nearly 90% (*n* = 220) of the respondents either strongly agreed or agreed that they are qualified to assess for ADHD to determine the need and appropriateness of special education and Section 504 services. Additionally, 5.3% (*n* = 13) of respondents reported being neutral to the statement that they are qualified to assess for ADHD to determine the need and appropriateness of special education and Section 504 services diagnose ADHD. The small minority of respondents (5.3%, *n* = 13) replied that they either disagreed or strongly disagreed that they are qualified to assess for ADHD to determine the need and appropriateness of special education and Section 504 services. The majority of school psychologists surveyed believe they are qualified to determine the need and appropriateness of special education and Section 504 services through their ADHD evaluations. Assessing to determine the need and appropriateness of special education and Section 504 services is a familiar task school psychologists complete on a regular basis.

The vast majority of respondents (94.7%, *n* = 233) checked that they either strongly agreed or agreed that they are qualified to assess for ADHD to develop appropriate interventions. Only 2.8% (*n* = 7) of respondents either disagreed or strongly disagreed that they are qualified to assess for ADHD to develop appropriate interventions. The vast majority of school psychologists believe they are qualified to assess for ADHD to develop appropriate interventions. School psychologists appear to be comfortable with connecting their assessments to interventions. This is a familiar task and one that has become more important to their practice.

Research Question 9

What are the beliefs of the school psychologists surveyed regarding their training in ADHD assessment and in providing ADHD interventions? It was hypothesized that the majority of school psychologists would report being well-trained in assessment and intervention of ADHD.

The majority of the respondents (53.7%, *n* = 132) strongly agreed or agreed that they are well-trained regarding ADHD assessments in their school psychology graduate program. Of the respondents surveyed, 18.7% (*n* = 46) reported being neutral to the statement that they are well-trained regarding ADHD assessments. Nearly 28% (*n* = 68) of respondents either disagreed or strongly disagreed that they are well-trained

regarding ADHD assessments. The results suggest that the majority of school psychologists believe they are well-trained regarding ADHD assessments. In comparison to Demaray et al. (2003), 88% of the school psychologists surveyed reported being well-trained in ADHD assessments. That sample reflected doctoral level school psychologists reporting to be better trained than non-doctoral level school psychologists as well. The current study suggests that school psychologists do not believe they are as well-trained in ADHD assessments as in the past. Training in assessment may not have been specific to ADHD in the past due to ADHD not being a part of the old regulations. Training may be coming more from workshops and in-services rather than graduate training programs. In Smith (1999), 86% of the surveyed school psychologists responded that their training in ADHD came from workshops and in-services. This may be an area that school psychology graduate programs may want to improve.

The majority of the respondents (56.1%, *n* = 138) noted that they strongly agreed or agreed that they are well-trained regarding ADHD interventions in their school psychology graduate program. Twenty-two percent (*n* = 54) of respondents reported being neutral to the statement that they are well-trained regarding ADHD interventions. Twenty-two percent (*n* = 54) of respondents either disagreed or strongly disagreed that they are

well-trained regarding ADHD interventions. The majority of school psychologists surveyed believe they are well-trained regarding ADHD interventions. Previous studies found that the school psychologists surveyed believed they were best prepared for consultation specifically and least prepared for intervention in general (Smith, 1999). In a previous study, 58.1% of school psychologists surveyed reported no formal training in monitoring the effects of medication on ADHD (Moore et al., 2005). Current findings suggest that school psychologists believe they are being better trained in ADHD interventions than in the past, but it is still an area for improvement. Training in providing interventions may not have been specific to ADHD because of its exclusion in the regulations. As mentioned, training may be coming more from workshops and in-services rather than graduate training programs. School psychology graduate programs should continue to focus on training in ADHD interventions.

Research Question 10

Is there an association between the demographic variables, assessment variables, diagnostic variables, and intervention variables? The demographic variables included the surveyed school psychologists' geographic location, community setting, SES, sex, level of education, years of experience, and credentials. The assessment variables were the surveyed school

psychologists' beliefs of being well-trained in ADHD assessments, level of confidence in their ability to assess for ADHD, beliefs of being qualified to assess for ADHD in general, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, beliefs of being qualified to assess for ADHD to develop interventions, and indication of conducting ADHD assessments. The diagnostic variables were the surveyed school psychologists' beliefs of being qualified to diagnose ADHD, level of confidence in their ability to diagnose ADHD, and indication of providing a diagnosis of ADHD. The intervention variables included the surveyed school psychologists' beliefs of being well-trained in ADHD interventions, beliefs of being qualified to provide ADHD interventions, level of confidence in their ability to provide ADHD interventions, and indication of providing ADHD interventions. This was an exploratory question with no hypothesis.

The results revealed that experience is related to beliefs about being well-trained in ADHD assessments and interventions. Older, more experienced school psychologists indicated lower ratings in the areas of being well-trained in ADHD assessments and interventions as compared to the ratings of younger, less experienced school psychologists. These beliefs may come from a lack of training in ADHD assessments and interventions or a need

for continuing education for older, more experienced school psychologists. ADHD assessment and intervention training may not have been specific to ADHD in the past due to ADHD not being a part of the old regulations. Training may be coming more from workshops and in-services rather than graduate training programs. In Smith (1999), 86% of the surveyed school psychologists responded that their training in ADHD came from workshops and in-services. This may be an area that school psychology graduate programs want to focus on for improvement.

The participants' beliefs of being well-trained in ADHD assessment are associated with their beliefs in being qualified to assess for ADHD and their level of confidence in ADHD assessment. A relationship was found between beliefs in being well-trained in ADHD assessments and beliefs in being well-trained in providing interventions for ADHD. The higher school psychologists rated their beliefs in being well-trained in ADHD assessment, the higher they rated their beliefs in being qualified to assess, confident to assess, and well-trained in providing interventions for ADHD.

The participants' beliefs of being well-trained in ADHD interventions are associated with their beliefs in being qualified to intervene for ADHD and their level of confidence in ADHD intervention. A correlation existed between beliefs of being qualified in providing ADHD interventions and level of

confidence in providing ADHD interventions. The higher school psychologists rated their beliefs in being well-trained in ADHD interventions, the higher they rated their beliefs in being qualified to intervene and confident to intervene.

The findings suggest that training is related to beliefs about being qualified and confident to assess and intervene for ADHD. Beliefs about training to assess for ADHD and training to provide interventions for ADHD are highly related. Better training leads to more qualified and confident ADHD assessments and interventions. Training programs may want to focus on training in ADHD assessment and intervention practices in order to enhance the quality of school psychologists' practices.

Level of education is related to licensure and indication of providing a diagnosis of ADHD. The more graduate education school psychologists obtain, the more likely they are to be a licensed psychologist and to provide a diagnosis of ADHD when warranted. In Smith (1999), the school psychologists' highest degree earned was significantly related to how well the school psychologists rated themselves in providing consultation for ADHD. No significant differences were found in Smith's study when surveying school psychologists about conducting ADHD assessments, providing interventions for ADHD, and measuring their level of confidence regarding ADHD when comparing sex, degree, and experience. One study showed that doctoral level

school psychologists were more likely that non-doctoral school psychologists to provide medication monitoring and consultation as an intervention, but no explanation could be concluded (Demaray et al., 2003). In the current study, level of education was related to licensure and providing a diagnosis of ADHD. This information may help graduate training programs with meeting the needs of their school psychology students. In the current study, there were no significant connections between the respondents' level of education and likelihood of providing ADHD interventions.

Correlations existed between indication of providing an ADHD diagnosis and beliefs of being qualified to diagnose ADHD, level of confidence in ADHD diagnosis, and level of confidence in ADHD assessment. The findings suggest that the more school psychologists believe they are qualified to diagnose ADHD, feel confident in diagnosing ADHD, and feel confident in assessing for ADHD, the more likely they are to actually provide the diagnosis of ADHD. These correlations are expected with someone who is responsible for making the actual diagnosis of ADHD. The school psychologist who is making the diagnosis of ADHD should believe they are qualified and feel confident in their abilities to make the diagnosis.

There are also several relationships between the variables of being qualified to assess for ADHD, diagnose ADHD, and intervene for ADHD; level of confidence in ADHD assessment, diagnosing ADHD, and providing ADHD interventions; and beliefs about being qualified to assess for ADHD to determine if the disorder exists, beliefs about being qualified to assess for ADHD to determine the need and appropriateness of services, and beliefs about being qualified to assess for ADHD to develop appropriate interventions. These correlations are to be expected between variables of beliefs and confidence.

Research Question 11

Are there certain demographic, assessment, diagnostic, and intervention variables that are associated with the likelihood that the school psychologists surveyed conduct ADHD assessments, diagnose ADHD, and provide ADHD interventions? The demographic variables, assessment variables, diagnostic variables, and intervention variables used in this research question are the same as in research question 10. This was an exploratory question with no hypothesis.

This study found that school psychologists who hold a license as a credential are more likely to conduct assessments for ADHD. In order to obtain licensure, most states require psychologists to attain a doctorate. Psychologists also have to pass the licensure exam, complete a supervised experience, and

carry out ongoing continuing education. These stricter standards may foster beliefs of being more qualified and confident in their ADHD assessment practices. Practitioners who received more specific training and have obtained licensure may feel more prepared and more comfortable with conducting ADHD assessments.

Results of this study also suggest that level of education, SES, national certification, and beliefs about being qualified to diagnose ADHD were significant in differentiating whether or not school psychologists are more likely to provide a diagnosis of ADHD when warranted. In order to obtain a national certification, school psychologists need to complete specific course requirements in their graduate training program. They have to pass an examination, meet specific internship requirements, and maintain ongoing professional development. These stricter standards may foster differing beliefs in their ADHD diagnosis practices. A school psychologist who received more graduate education had more opportunities to receive graduate training in ADHD diagnosis. When it comes to providing a diagnosis for ADHD, practitioners who have obtained national certification and who have received more graduate education may feel more prepared, qualified, confident, and comfortable with providing the diagnosis.

The school psychologists beliefs in being qualified to diagnose ADHD were also significant suggesting that the more qualified one feels about diagnosing, the more likely they are to provide a diagnosis of ADHD. This result may have been influenced by social desirability. The respondents may have replied to the survey in a manner that supports their diagnostic practices so that their responses would be viewed by others favorably (Fisher, 1993).

Previous research has suggested that SES influences the prevalence of ADHD diagnosis and medication treatment. Low SES was seen as a risk factor for ADHD and had an impact on medication treatment of ADHD (Biederman, Milberger, et al., 1995). Studies have indicated higher rates of medication treatment to control symptoms in children with ADHD whose families have a higher income in comparison to a lower income (Bussing et al., 1998; LaFever et al., 1997). Lower SES has been associated with families being less likely to utilize health care services and to be less compliant with treatment of ADHD (Gingerich, Turnock, Litfin, & Rosen, 1998). Higher SES is one of the predictors of positive outcomes for children with ADHD (Hechtman, 1996). In the current study, SES helped predict whether or not school psychologists provide a diagnosis of ADHD when warranted. The results show that families with higher SES are receiving their ADHD diagnoses from another source outside

of the school environment. Because families with higher SES are more likely to utilize health care services, are more likely to use medication treatment to control ADHD symptoms, and are more likely to be compliant with treatment of ADHD, they may not need the school services in identification and intervention of ADHD. Families of higher SES are most likely receiving treatment, assessment, and a diagnosis of ADHD from an outside professional, such as a clinical psychologist, psychiatrist, or physician.

Results of this study also suggest that state certification and beliefs about being qualified to assess for ADHD to determine if the disorder exists were significant in differentiating whether or not school psychologists are more likely to provide interventions for ADHD. State certified school psychologists are more likely to provide ADHD interventions when compared to school psychologist who hold another credential. State certification regulations may be guiding school psychologists to provide ADHD interventions. State certified school psychologists may feel that ADHD intervention is an area where they feel most comfortable to practice. It appears that holding a state certification helps predict whether or not interventions are provided.

The results revealed school psychologists who feel qualified to assess for ADHD to determine if the disorder exists are more likely to provide interventions for ADHD. If a school psychologist believes they are qualified to assess for ADHD to determine if the disorder exists, they may feel that they are in a better position to provide interventions for ADHD. As part of the assessment for ADHD, one of the goals is to assess in order to plan for intervention and to evaluate the outcomes of the interventions (Pelham et al., 2005). Through the assessment process, school psychologists gain specific assessment knowledge on the child with ADHD. They are in the position to use this knowledge to help develop and provide interventions for the children with ADHD. If they are collecting data to help determine if the disorder exists, they probably feel comfortable with planning and evaluating interventions based on that data. It appears that beliefs about being qualified to assess ADHD helps predict whether or not interventions are provided.

Research Question 12

Is there a difference between the school psychologists surveyed who indicate that they conduct ADHD assessments and school psychologists who indicate that they do not conduct ADHD assessments for the variables of geographic location, community setting, SES, sex, level of education, years of experience, credentials, beliefs of being well-trained in ADHD assessments,

beliefs of being qualified to conduct ADHD assessments, level of confidence in ability to conduct ADHD assessments, beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, and beliefs of being qualified to assess for ADHD to develop interventions? This was an exploratory question with no hypothesis.

The results revealed that after a Bonferroni correction was used to reduce familywise error rates, no significant differences were found between any of the comparisons. None of the demographic variables, assessment variables, or diagnostic variables were significantly different when comparing school psychologists who checked that they conduct ADHD assessment and school psychologists who checked that they do not conduct ADHD assessments.

Research Question 13

Is there a difference between the school psychologists surveyed who indicate that they provide an ADHD diagnosis and school psychologists who indicate that they do not provide an ADHD diagnosis for the variables of geographic location, community setting, SES, sex, level of education, years of experience, credentials, beliefs of being well-trained in ADHD assessments, beliefs of being qualified to conduct ADHD

assessments, level of confidence in ability to conduct ADHD assessments, beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, and beliefs of being qualified to assess for ADHD to develop interventions? This was an exploratory question with no hypothesis.

The results showed that significant differences existed between the school psychologists who provide an ADHD diagnosis and the school psychologists who do not provide an ADHD diagnosis. Significant differences for level of education and being a licensed psychologist occurred between school psychologists who provide an ADHD diagnosis and school psychologists who do not provide an ADHD diagnosis. A school psychologist who received more graduate education had more opportunities to receive graduate training in ADHD diagnosis. When providing a diagnosis for ADHD, practitioners who received more graduate education may feel more prepared, qualified, confident, and comfortable with providing the diagnosis. The stricter licensure standards may foster beliefs of being more prepared, qualified, confident, and comfortable with providing the diagnosis as well.

The results suggest that level of education and being a licensed psychologist have an impact on whether a school psychologist chooses to diagnose ADHD.

School psychologists who provide an ADHD diagnosis displayed higher ratings for beliefs about being qualified to diagnose ADHD. They also reported higher ratings for levels of confidence in their ability to assess for ADHD and diagnose ADHD. School psychologists who diagnose ADHD believe they are more qualified in assessing ADHD to establish if the disorder exists and to determine services needed. No other significant differences were found. School psychologists who provide a diagnosis of ADHD believe they are more qualified to diagnose ADHD and have more confidence in their ability to assess and diagnose ADHD. They also believe they are more qualified when assessing for ADHD to determine if the disorder exists and to determine services needed. These results may have been influenced by social desirability. The respondents may have replied to the survey in a manner that supports their diagnostic practices so that their responses would be viewed by others favorably (Fisher, 1993).

Research Question 14

Is there a difference between the school psychologists surveyed who indicate that they provide interventions for ADHD and school psychologists who indicate that they do not provide interventions for ADHD for the variables of geographic location, community setting, SES, sex, level of education, years of experience, credentials, beliefs of being well-trained in ADHD assessments, beliefs of being qualified to conduct ADHD assessments, level of confidence in ability to conduct ADHD assessments, beliefs of being qualified to diagnose ADHD, level of confidence in ability to diagnose ADHD, beliefs of being qualified to assess for ADHD to determine if the disorder exists, beliefs of being qualified to assess for ADHD to determine services, beliefs of being qualified to assess for ADHD to develop interventions, beliefs of being well-trained in ADHD interventions, beliefs of being qualified to provide ADHD interventions, and level of confidence in ability to provide ADHD interventions? This was an exploratory question with no hypothesis.

The results showed that after a Bonferroni correction was used to reduce familywise error rates, no significant differences were found between any of the comparisons. None of the demographic variables, assessment variables, diagnostic variables, or intervention variables were significantly

different when comparing school psychologists who responded that they provide interventions for ADHD and school psychologists who replied that they do not provide interventions for ADHD.

Implications

The results have implications that could be of interest to school psychologists, university faculties, students with ADHD, families of children with ADHD, and schools. The main conclusion that can be drawn from the results of this study is that the majority of school psychologists are conducting assessments and providing interventions for ADHD. Those ADHD assessment practices use multiple methods of data collection employing multiple sources of information within multiple settings.

An argument can be made that school psychologists should be assessing, diagnosing, and intervening more often for ADHD. School psychologists are in the position to assess, diagnose, and intervene for ADHD. School psychologists receive numerous referrals for ADHD and they are frequently conducting assessments and providing interventions for ADHD. Assessments and interventions are also a substantial portion of their caseloads. Even the school psychologists that do not conduct ADHD assessments are referring to an outside professional. They would still have access to that data and would be in an ideal position to make the identification or diagnosis of ADHD.

School psychologists are in an ideal position to conduct assessments and provide interventions for children with ADHD (Power et al., 1994).

There appears to be a change in the role of the school psychologist in the assessment, diagnosis, and intervention of ADHD. It seems that ADHD is no longer thought of as a strictly medical diagnosis. School psychologists believe they are qualified and feel confident in their ability to assess, diagnose, and intervene for ADHD. The actual ADHD assessment and intervention practices of school psychologists are similar to their beliefs of being qualified and confident in their ability to assess and intervene for ADHD. However, the beliefs of being qualified and confident in their ability to diagnose ADHD were greater than their actual diagnostic practices. It appears that school psychologists feel they are qualified to diagnose ADHD and are confident to do so, but these feelings have not translated into them actually doing so in practice. This difference between beliefs and practice may be due to state and school district regulations. The difference may also be accounted for by confusion in terminology. School psychologists may not have been comfortable with the word diagnosis, but they may still be identifying ADHD without calling it a diagnosis.

School psychologists are frequently reviewing school records, teacher input, academic performance, parent input, developmental history, and medical history as part of their ADHD assessments. They are frequently conducting interviews and observations. School psychologists are frequently using rating scales and psychoeducational testing. To a lesser extent, school psychologists are administering neuropsychological testing. School psychologists are performing all of the necessary assessments in order to diagnose or identify ADHD. They are performing assessments and providing interventions for ADHD frequently. They are familiar with ADHD and it is becoming more commonplace and acceptable in schools. School psychologists should be playing a more active role in the identification or diagnosis of ADHD more often.

School psychologists are also using a wide variety of instruments to varying extents as part of their ADHD assessments. The differing usage of the various instruments suggests that there is a need for a more standardized battery in the assessment of ADHD. Standardized batteries are useful in the assessment of many different disabilities. Standardized batteries are helpful in eliminating diagnosis bias. By examining the usage of specific assessment instruments surveyed in this study, a standard battery could be developed in order to improve assessment and intervention practices for ADHD. Since

there is not a standard battery involved in the assessment for ADHD, these results could be used to help develop one by finding the most common and popular instruments. The information collected for intervention usage could be used to develop a standard battery of interventions to use with ADHD by finding the most common and popular interventions.

The inclusion of neuropsychological tests and continuous performance tests are typically justified in an ADHD assessment to assess such neurological functions like executive functioning (Barkley, 2006). There is evidence to suggest that the use of neuropsychological tests aids in diagnosing ADHD (Culbertson & Krull, 1996; Grodzinsky & Diamond, 1992). Contrasting evidence suggests that neuropsychological tests have problems with reliability and validity (Burcham & DeMers, 1995) and a high rate of false positives and negatives (Brock, 1997; Grodzinsky & Barkley, 1999). The findings suggest that school psychologists are not using neuropsychological instruments or continuous performance tests frequently during their ADHD assessments. The majority of respondents reported that they seldomly or never used neuropsychological instruments and continuous performance tests. School psychologists are not measuring neuropsychological factors despite the evidence of their importance and role in ADHD. It may be that school psychologists are not trained or feel comfortable administering

such assessments. Another explanation may be that school psychologists do not have the economic resources or time available to complete neuropsychological assessments. This an area of practice where school psychologists need improvement.

The most commonly reported interventions for ADHD were among the most frequently recommended in the literature (Barkley, 1998; Barkley, 2006; DuPaul & Stoner, 2003; DuPaul et al., 2002; DuPaul et al., 2008; Hoff et al., 2002; Pelham et al., 2005; Power & Mautone, 2008; Tobin et al., 2008). The most commonly used interventions were ones that are able to be performed within the school environment. School psychologists are employing interventions that they have immediate access to such as working with the students, working with the teachers, or modifying the classroom environment. School psychologists are less likely to perform an intervention that lies outside of the school environment. Children with ADHD have difficulties within family and peer relationships, yet the current findings suggest that school psychologists are not frequently providing interventions related to those relationships. School psychologists are focusing more on direct interventions and typically have less accessibility to parents and outside professionals. This is an important intervention and an area where school psychologists need to improve their practice.

The majority of school psychologists believed they are well-trained in ADHD assessment and ADHD interventions during their school psychology graduate training. Approximately 54% of school psychologists checked that they strongly agree or agree being well-trained regarding ADHD assessments and 56% of school psychologists noted that they strongly agree or agree being well-trained regarding interventions for ADHD. The level of agreement regarding training could be higher. It appears that school psychologists are expressing concerns about their training regarding ADHD. A significant, negative relationship existed between beliefs regarding training and years of experience. As a school psychologist gains more years of experience, their beliefs about being well-trained in ADHD assessment and intervention decreases. This belief may come from a lack of training in ADHD assessments and interventions or a need for continuing education as a school psychologist gains experience. ADHD assessment and intervention training may not have been specific to ADHD in the past due to ADHD not being a part of the old regulations. Training may be coming more from workshops and in-services rather than graduate training programs (Smith, 1999). This may be an area that school psychology graduate programs want to focus on for improvement. Better training practices may help increase beliefs of being qualified and confidence, which will result in improved practices.

The results revealed that level of education and the credentials of licensure, national certification, and state certification were significant when conducting Pearson *r* and Spearman *rho* correlation coefficients, binary logistic regression, and Mann-Whitney *U* tests. The more education a school psychologist obtains, the more likely they are to provide a diagnosis of ADHD. Level of education was also found to be a predictor of whether an ADHD diagnosis was provided or not. A school psychologist who received more graduate education had more opportunities to receive graduate training in ADHD diagnosis. Better training programs may result in enhanced practices.

A school psychologist who holds licensure is more likely to provide a diagnosis of ADHD. Licensure was also a predictor of whether ADHD assessments are conducted or not. A significant difference for licensure was found between school psychologists who diagnose ADHD and school psychologists who do not diagnose ADHD. National certification was a predictor of whether an ADHD diagnosis is provided or not. State certification was a predictor of whether ADHD interventions are provided or not.

Practitioners who received more specific training and have obtained licensure, national certification or state certification may feel more prepared and more comfortable with conducting ADHD assessments, diagnosing ADHD, and providing interventions for ADHD.

It was found that SES was significant in differentiating whether or not school psychologists are more likely to provide a diagnosis of ADHD when warranted. SES helped predict whether or not school psychologists provide a diagnosis of ADHD when warranted. The results showed that families with higher SES are receiving their ADHD diagnoses from another source outside of the school environment. Families with higher SES are more likely to utilize health care services. They are more likely to use medication treatment to control ADHD symptoms and to be compliant with treatment of ADHD. These families may not need the school services in identification and intervention of ADHD. Outside professionals such as clinical psychologists, psychiatrists, or physicians are most likely providing treatment, assessment, and a diagnosis of ADHD for these families. School psychologists should try to educate communities with higher SES about the resources available to help all parents for ADHD in schools.

Limitations

There were several variables within this study that may limit the generalizability and interpretation of the results. The first limitation of this study was in the nature of survey research. The respondents may be biased due to their interest level and knowledge about the topic being studied (Dillman, 1978). The effect of social desirability may have caused some respondents to provide responses based on their knowledge of recommended practices rather than their actual practice. In addition, the respondents may have replied to the survey in a manner that would be viewed favorably by others. Due the voluntary nature and effect of social desirability, the participants' responses may not be indicative of their actual assessment and intervention practices. Response bias was a possible limitation. This study had a response rate of 49.2%, which compared well to the previous national survey studies reviewed for this study. The previous national survey studies had response rates that ranged from 13% to 62.7% (Chang, 2001; Cushman et al., 2004; Demaray et al., 2003; Goh et al., 1981; Handler, 2000; Hennigen, 1997; Hutton et al., 1992; Koonce, 2007; Miller, 2005; Moore et al., 2005; Rosenberg & Beck, 1986; Smith, 1999; Wilson & Reschly, 1996). Even with an acceptable return rate, there was a possibility that differences existed between the respondents and those who did not return the survey.

The next limitation of the study was that the participants were all regular NASP members that indicated they are practicing school psychologists working primarily in a school setting. This means that only school psychologists that joined this professional organization were included and results may not be reflective of all school psychologists' practices. When looking at the degree to which this study can be generalized to the general population, the results of this survey study were limited to how well the sample of school psychologists who are regular members of NASP represents school psychologists as a whole. Similar comparisons between this study and that to the most recently reported NASP Membership Survey provided support for the generalization of the results to the larger population of practicing school psychologists (Curtis et al., 2008).

The survey for this study was carefully designed in order to assess an extensive variety of assessments and interventions with the possibility for respondents to include other options through open-ended items. A possible limitation was that some assessment and intervention practices were missed even with the use of open-ended items. The assessment instruments included in the survey are representative of the most recent editions available at the time of the mailing. Previous editions of assessments that were recently revised and recently announced revisions, may not be presented during the time of taking the

survey; and therefore, the results may not be indicative of current usage of those limited number of instruments. Although this study attempted to gain usage information for a wide variety of assessment and intervention practices, it cannot inform us how school psychologists used the information gained through assessment and during intervention. In addition, it cannot yield information that was related to perceived importance of the assessment and intervention practice in the decision-making process or why the assessment or intervention was selected.

Another possible limitation of this study was the lack of established reliability and validity information for the survey instrument used. To help establish content validity for the survey, an expert panel was used to review the survey and a pilot study was conducted on a small, convenient sample. To help establish reliability, the survey was administered a second time to the pilot study group. The expert review and pilot study helped in editing the survey to reflect appropriate content. A percentage of agreement was used to determine reliability between the surveys administered to the pilot study group. The overall level of reliability and the individual survey item reliability was deemed to be very good to excellent.

Finally, the prevalence of ADHD can vary significantly due the function of age, sex, and other factors. It was possible that the selection of an assessment battery may also vary based on these variables (Barkley, 1998; Koonce, 2007). Based on this information, a possible limitation of this study was using a survey of general assessment practices rather than looking for assessment practices based on a specific age and/or sex.

Recommendations for Future Research

Because ADHD is a common referral for school psychologists, future studies should continue to explore the assessment and intervention practices of school psychologists. Since ADHD can vary due the function of age, sex, and other factors, the selection of assessments and interventions may vary based on these variables. Future studies should survey practices based on a specific age and/or sex in a possible case study. In addition, future studies might include an exploration of how school psychologists use the information gained through assessments and during interventions. Surveying the perceived importance of the assessments and interventions and the decision-making process why the assessment or intervention was selected would be beneficial.

Future studies should continue to investigate the role of the school psychologist by exploring if ADHD assessment and intervention practices vary by state. State regulations and

mandates have been shown to affect school psychology practices (Hosp & Reschly, 2002). The majority of school psychologists felt qualified and confident in their abilities to diagnose ADHD. However, only 26.8% of the school psychologists actually do diagnose for ADHD. The current study did not provide for an explanation for this difference. Possible differences due to differing state and school district regulations should be explored. In addition, terminology differences should be explored in future research. The majority of school psychologists felt qualified and confident in their abilities to diagnose ADHD. However, only 26.8% actually do diagnose for ADHD. It may be that school psychologists did not want to endorse the term diagnose. The terminology of diagnosis is often connected to a medical definition. Other terms should be explored to represent school psychologists identifying ADHD.

The majority of school psychologists surveyed reported that they are well-trained in ADHD assessments and interventions as part of their school psychology graduate training. However, the results showed that 18.7% of respondents indicated being neutral to the statement that they are well-trained in regards to ADHD assessments and 27.7% of the respondents disagreed or strongly disagreed that they are well-trained in regards to ADHD assessments. Similarly, 22% of respondents noted being neutral to the statement that they are well-trained in regards to ADHD

interventions and 22% of respondents disagreed or strongly disagreed that they are well-trained in regards to ADHD interventions. A significant, negative relationship existed between beliefs regarding training and years of experience. As a school psychologist gains more years of experience, their beliefs about being well-trained in ADHD assessment and intervention decreases. Training in assessment may not have been specific to ADHD in the past due to ADHD not being a part of the old regulations. Training may be coming more from workshops and in-services rather than graduate training programs. The specific training practices should be explored in future research to address these issues in order to improve training programs.

The school psychologists surveyed are using a wide variety of instruments to varying extents as part of their ADHD assessments. The differing usage of the various instruments suggests that there is a need for a more standardized battery in the assessment of ADHD. Standardized batteries are useful in the assessment of many different disabilities and are helpful in eliminating diagnosis bias (Miller, 2005). Future research should investigate constructing a more standard battery for assessments.

Neurological factors are considered a main contributor to ADHD. Using neuropsychological tests is typically justified to

assess such neurological functions like executive functioning (Barkley, 2006). Evidence suggests that the use of neuropsychological tests aids in diagnosing ADHD (Culbertson & Krull, 1996; Grodzinsky & Diamond, 1992). However, the results showed that school psychologists are not using neuropsychological tests or continuous performance tests frequently during their ADHD assessments. School psychologists are not measuring neuropsychological factors despite the evidence of their importance and role in ADHD. Future research should investigate specific assessment instrument practices particularly in the area of neuropsychological tests and continuous performance tests. Training practices should be explored to see if school psychologists feel well-trained and competent in the use and interpretation of neuropsychological tests and continuous performance tests. Further, challenges such as time constraints and economic limitations should be explored to see if they are limiting the use neuropsychological tests and continuous performance tests.

The school psychologists surveyed most commonly used interventions that were performed within the school environment. School psychologists are providing interventions where they are working with the students, working with the teachers, or modifying the classroom environment. School psychologists are less likely to perform interventions outside of the school

environment. Children with ADHD have difficulties within family and peer relationships, yet the current findings suggest that school psychologists are not frequently providing interventions related to those relationships. Future research should investigate the patterns of intervention usage.

Finally, SES helped predict whether or not school psychologists provided a diagnosis of ADHD when warranted. The results revealed that families with higher SES are receiving their ADHD diagnoses from another source outside of the school environment. Higher SES families are most likely receiving treatment, assessment, and a diagnosis of ADHD from an outside professional such as a clinical psychologist, psychiatrist, or physician. Future studies should continue to examine the connection between assessing, diagnosing, and intervening for ADHD within various SES populations. Specifically, research should focus on why higher SES families are receiving their ADHD diagnoses from another source outside of the school environment.

Summary

The primary purpose of the current study was to investigate the assessment and intervention practices of school psychologists regarding ADHD. The study was a quantitative, non-experimental study that collected data using a survey. The response rate was 49.2% that compared well to other similar national studies. Various descriptive statistics were used in

analyzing the data. Relationships were calculated using Spearman *rho*, Pearson *r*, and logistic regression. Differences were calculated by using Mann Whitney *U*.

The majority of school psychologists conducted assessments for ADHD and provided interventions for ADHD. They are using a wide variety of appropriate instruments as part of the assessment and they appeared to be comfortable when intervening for ADHD. Of the school psychologists who do not conduct ADHD assessments, the majority referred to an outside professional for the assessment. School psychologists either have access to the necessary data or are in the ideal position to conduct, identify, and intervene for ADHD. Even though the minority of school psychologists provided a diagnosis of ADHD when warranted, the argument can be made that more school psychologists should be identifying or diagnosing ADHD.

School psychologists are frequently performing ADHD assessments and providing ADHD interventions. ADHD assessments and interventions are a major part of their caseload. School psychologists appear to be comfortable with assessing for ADHD and its identification. They are self-assured in their intervention role. Diagnosis, planning for intervention, and evaluating outcomes of interventions are an important part of the ADHD assessment. Since ADHD assessment is such a significant part of the school psychologist's role, the argument

that more school psychologists should be identifying or diagnosing ADHD is supported.

The majority of school psychologists believed they are qualified to and felt confident in their ability to assess, diagnose, and intervene for ADHD. More school psychologists believed they are qualified to and felt confident in their ability to diagnosis ADHD than previously mentioned. This increase suggests that school psychologists are becoming more assured and confident in their role with ADHD. The change in their role may be due to the commonplace of the ADHD evaluation and the frequency of ADHD being recognized and accepted by schools. The change may also be due to the changing beliefs that ADHD is no longer a strictly medical diagnosis. Even though the majority of school psychologists believed they are qualified to and felt confident in their ability to diagnose ADHD, only 26.8% actually provided a diagnosis. This difference between beliefs and actual diagnostic practice may be due to state and school district regulations or confusion in terminology. It appears that school psychologists are ready for a more active role in identifying or diagnosing ADHD.

School psychologists are frequently reviewing school records, teacher input, academic performance, parent input, developmental history, and medical history as part of their ADHD assessments. They are frequently conducting interviews and

observations. School psychologists are frequently using rating scales and psychoeducational testing. To a lesser extent, school psychologists are administering neuropsychological testing. Some neuropsychological areas may be important to measure, but not a priority due to time constraints or economic limitations. School psychologists are performing all of the necessary assessments in order to diagnose or identify ADHD and they are in an ideal position to conduct those assessments. These practices further support that more school psychologists should be identifying or diagnosing ADHD. School psychologists are using a wide variety of instruments to varying extents as part of their ADHD assessments. The differing usage of the various instruments suggests that there is a need for a more standardized battery in the assessment of ADHD.

The most commonly used interventions are ones that can be performed within the school environment. School psychologists employed interventions that they have immediate access to, such as working with the students, working with the teachers, or modifying the classroom environment. School psychologists are less likely to perform an intervention that lies outside of the school environment. Children with ADHD have difficulties within family and peer relationships, yet the current findings suggest that school psychologists are not frequently providing interventions related to those relationships. School

psychologists are focusing more on direct interventions and typically have less accessibility to parents and outside professionals. This is an important intervention and an area where school psychologists need to improve their practice.

The results revealed that experience is related to beliefs about being well-trained in ADHD assessments and interventions. Older, more experienced school psychologists believed they are not as well-trained in ADHD as compared to younger, less experienced school psychologists. This suggests that these beliefs may come from a lack of training in ADHD assessments and interventions or a need for continuing education. ADHD assessment and intervention training may not have been specific to ADHD in the past due to ADHD not being a part of the old regulations. ADHD training may be completed through workshops and in-services rather than graduate training programs. This may be an area that school psychology graduate programs want to focus on for improvement.

School psychologists' beliefs of being well-trained in ADHD assessment were associated with their beliefs in being qualified to assess for ADHD and their level of confidence in ADHD assessment. Beliefs of being well-trained in ADHD interventions were associated with their beliefs in being qualified to intervene for ADHD and their level of confidence in ADHD intervention. The higher school psychologists rated their

beliefs in being well-trained in ADHD assessment and intervention, the higher they rated their beliefs in being qualified to assess and intervene and confidence to assess and intervene. The findings support that training is related to beliefs about being qualified and confident to assess and intervene for ADHD. Better training leads to more qualified and confident ADHD assessments and interventions. Training programs may want to focus on training in ADHD assessment and intervention practices in order to enhance the quality of school psychologists' practices.

This study found that school psychologists who hold a license as a credential are more likely to conduct assessments for ADHD. Stricter licensure standards may foster beliefs of being more qualified and confident in ADHD assessment practices. Practitioners who received more specific training and have obtained licensure may feel more prepared and more comfortable with conducting ADHD assessments.

Level of education, SES, national certification, and beliefs about being qualified to diagnose ADHD were significant in differentiating whether or not school psychologists are more likely to provide a diagnosis of ADHD when warranted. Stricter national certification standards and graduate education may foster differing beliefs in ADHD diagnosis practices. Practitioners who have obtained national certification and who

have received more graduate education may feel more prepared, qualified, confident, and comfortable with providing an ADHD diagnosis. Higher SES families are receiving ADHD diagnoses from another source outside of the school environment because they may not need the school services in identification and intervention of ADHD.

State certification and beliefs about being qualified to assess for ADHD to determine if the disorder exists were significant in differentiating whether or not school psychologists are more likely to provide interventions for ADHD. State certification regulations may be guiding school psychologists to provide ADHD interventions. State certified school psychologists may feel that ADHD intervention is an area where they feel most comfortable to practice. If a school psychologist believes they are qualified to assess for ADHD to determine if the disorder exists, they may feel that they are in a better position to provide interventions for ADHD.

Significant differences for level of education and being a licensed psychologist occurred between school psychologists who provide an ADHD diagnosis and school psychologists who do not provide an ADHD diagnosis. Practitioners who received more graduate education may feel more prepared, qualified, confident, and comfortable with providing the diagnosis. The stricter licensure standards may foster beliefs of being more prepared,

qualified, confident, and comfortable with providing the diagnosis as well. Level of education and being a licensed psychologist appears to have an impact on whether a school psychologist chooses to diagnose ADHD. School psychologists who provide an ADHD diagnosis displayed higher ratings for beliefs about being qualified to diagnose ADHD and level of confidence in their ability to assess for ADHD and diagnose ADHD. School psychologists who diagnose ADHD believe they are more qualified in assessing ADHD to determine if the disorder exists and to determine services needed. The results may have been influenced by the respondents replying to the survey in a manner that supports their diagnostic practices.

Possible limitations of the study included generalizability of the participants and results, the effect of social desirability and nonresponse, the reliability and validity of the survey instrument, and the use of general practices versus more case-specific practices. It is recommended to explore assessment and intervention practices for ADHD in the future. Future research in this area might include using a specific scenario based survey rather than a general practice survey. Future research should investigate how school psychologists use the information they gain and the perceived importance of the instruments and interventions used. Their decision making and reasoning should be surveyed as well. Future research should

look at if practices differ by state or district and if there are terminology differences that affect assessment and diagnostic practices. Specific training practices for ADHD assessments and interventions should be explored. Future studies should continue to explore the connection between assessing, diagnosing, and intervening for ADHD and SES.

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Appendix A

Copy of Assessment and Intervention Practices for ADHD Survey

Assessment and Intervention Practices for ADHD: A National Survey of School Psychologists

The following questions seek information about your practices in assessment and intervention of ADHD. Your feedback will help provide a better understanding of school psychologists' practices for ADHD. The data collected from this survey will help develop plans to improve training and practices that will benefit school psychologists, students, families, and schools. For the purposes of this study, school psychologists are considered part of a team of qualified professionals who help make eligibility determinations for special education and Section 504 services within the school setting. Part of the evaluation process is to determine if a child qualifies as a child with a disability and the child's educational needs.

Section I: Demographic Information

Please complete the following information to help develop a coding system that will be used for data organization. This information will be kept confidential. Please provide responses to the following items:

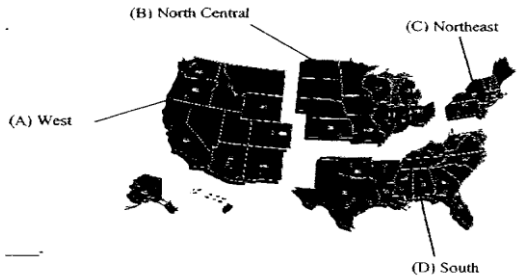
1. Please specify the region of the country in which you work. (check one)

☐ (A) West (AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, WY)

☐ (B) North Central (IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI)

☐ (C) Northeast (CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, PR, RI, VT)

☐ (D) South (AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA, WV)



2. Please indicate your primary employment setting. (check one)
   ☐ College or University ☐ Community Mental Health
   ☐ Hospital/Medical ☐ Private Practice
   ☐ School District ☐ Other (please specify):

3. Please indicate the nature of the community of your primary employment setting. (check one)
   ☐ Urban ☐ Suburban ☐ Rural

4. Please indicate the socioeconomic status (SES) of the community of your primary employment setting. (check one)
   ☐ Mostly Higher SES ☐ Mostly Middle SES ☐ Mostly Lower SES

5. Please specify gender. (check one)
   ☐ Male ☐ Female

6. Please indicate highest level of graduate education in school psychology. (check one)
   ☐ Master's Degree (30 to 59 semester hours)
   ☐ Post Master's, Specialist Degree (60+ semester hours)
   ☐ Doctoral Degree
   ☐ Other (please list) _____

7. Please indicate year when highest school psychology degree was obtained:

8. Please indicate how many years you have been a practicing school psychologist:

9. Please indicate all credentials that apply. (check all that apply)
   ☐ State Certified School Psychologist ☐ Licensed Psychologist
   ☐ Nationally Certified School Psychologist ☐ Other (please specify):

Items continued on next page…

Section II: ADHD Assessment Information

For items 10-17, please indicate your opinion regarding the statements. Circle the corresponding answer in order to rate the level of agreement to the following statements. Circle SA, if you strongly agree with the statement. Circle SD, if you strongly disagree with the statement. You should circle A, N, or D for ratings in between.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
10. I was well-trained regarding ADHD assessment in my school psychology graduate training.	SA	A	N	D	SD
11. School psychologists are qualified to assess for ADHD.	SA	A	N	D	SD
12. I am confident in my ability to assess for ADHD.	SA	A	N	D	SD
13. School psychologists are qualified to diagnose ADHD.	SA	A	N	D	SD
14. I am confident in my ability to diagnose ADHD.	SA	A	N	D	SD
15. School psychologists are qualified to assess for ADHD to determine if the disorder exists.	SA	A	N	D	SD
16. School psychologists are qualified to assess for ADHD to determine the need and appropriateness of special education or Section 504 services.	SA	A	N	D	SD
17. School psychologists are qualified to assess for ADHD to develop appropriate interventions.	SA	A	N	D	SD

Please answer the following items:

18a. Do you conduct assessments for ADHD?

☐ Yes ☐ No

If yes, please complete item numbers 19-174. If no, please answer 18b and then skip to item number 175 on page 7.

18b. If you do not assess for ADHD, do you refer to an outside professional for the assessment?

☐ Yes ☐ No

19. At the end of your ADHD assessment, do you provide a diagnosis of ADHD if warranted?

☐ Yes ☐ No

20. How many assessments did you conduct for ADHD in the past year?

21. Approximately what percentage of your assessments was conducted for ADHD?

For items 22-174, please circle the corresponding number in order to rate the frequency with which you use the following practices when conducting ADHD assessments. If you never use the assessment, circle 0. If you always use the assessment, circle 4. You should circle 1, 2, or 3 for ratings in between.

	Never 0	Seldom 1	Sometimes 2	Often 3	Always 4
General					
22. Assessments to determine differential diagnosis	0	1	2	3	4
23. Curriculum Based Assessment (CBA)	0	1	2	3	4
24. Functional Behavior Assessment (FBA)	0	1	2	3	4
25. Review of academic performance	0	1	2	3	4
26. Review of classroom characteristics that may affect child's behaviors	0	1	2	3	4
27. Review of developmental history	0	1	2	3	4
28. Review of family history	0	1	2	3	4
29. Review of group administered standardized assessments	0	1	2	3	4
30. Review of medical history	0	1	2	3	4
31. Review of parent input	0	1	2	3	4
32. Review of school records/history	0	1	2	3	4
33. Review of teacher characteristics that may affect child's behaviors	0	1	2	3	4
34. Review of teacher input	0	1	2	3	4
35. Other:	0	1	2	3	4
36. Other:	0	1	2	3	4

Items continued on next page…

	Never 0	Seldom 1	Sometimes 2	Often 3	Always 4
Interview Methods					
37. Achenbach System of Empirically Based Assessment (ASEBA)					
37a. ASEBA – Semistructured Clinical Interview for Children & Adolescents	0	1	2	3	4
38. Aggregate Neurobehavioral Student Health & Educational Review (ANSER)	0	1	2	3	4
39. Behavior Assessment System for Children – 2nd Edition (BASC-2)					
39a. BASC-2 – Structured Developmental History (SDH)	0	1	2	3	4
40. Diagnostic Interview for Children and Adolescents – 4th Edition (DICA-IV)	0	1	2	3	4
41. Diagnostic Interview Schedule for Children – 4th Edition (DISC-IV)	0	1	2	3	4
42. Child Interview	0	1	2	3	4
43. Parent Interview	0	1	2	3	4
44. Teacher Interview	0	1	2	3	4
45. Other:	0	1	2	3	4
46. Other:	0	1	2	3	4
Observational Methods					
47. Achenbach System of Empirically Based Assessment (ASEBA)					
47a. ASEBA – Child Behavior Checklist – Direct Observation Form	0	1	2	3	4
48. Behavior Assessment System for Children – 2nd Edition (BASC-2)					
48a. BASC-2 – Portable Observation Program (POP)	0	1	2	3	4
48b. BASC-2 – Student Observation System (SOS)	0	1	2	3	4
49. General observation of child	0	1	2	3	4
50. Systematic observation of child	0	1	2	3	4
51. Other:	0	1	2	3	4
52. Other:	0	1	2	3	4
Behavior Rating Scales					
53. Achenbach System of Empirically Based Assessment (ASEBA)	0	1	2	3	4
54. Behavior and Emotional Rating Scale – 2nd Edition (BERS-2)	0	1	2	3	4
55. Behavior Assessment System for Children – 2nd Edition (BASC-2)	0	1	2	3	4
56. Behavior Dimensions Rating Scale (BDRS)	0	1	2	3	4
57. Behavior Dimension Scale – 2nd Edition (BDS-2)	0	1	2	3	4
58. Behavior Evaluation Scale – 3rd Edition (BES-3)	0	1	2	3	4
59. Child Symptom Inventory – 4 (CSI-4)	0	1	2	3	4
60. Clinical Assessment of Behavior (CAB)	0	1	2	3	4
61. Conners Comprehensive Behavior Rating Scales (CBRS)	0	1	2	3	4
62. Devereux Scales of Mental Disorders (DSMD)	0	1	2	3	4
63. Emotional Quotient Inventory: Youth Version (EQ-i:YV)	0	1	2	3	4
64. Home Situation Questionnaire (HSQ)	0	1	2	3	4
65. Parent-Child Relationship Inventory (PCRI)	0	1	2	3	4
66. Parenting Relationship Questionnaire (PRQ)	0	1	2	3	4
67. Parenting Stress Index – 3rd Edition (PSI-3)	0	1	2	3	4
68. Social Skills Rating System	0	1	2	3	4
69. Other:	0	1	2	3	4
70. Other:	0	1	2	3	4

Items continued on next page…

	Never 0	Seldom 1	Sometimes 2	Often 3	Always 4
ADHD Rating Scales					
71. ADD-H: Comprehensive Teacher's Rating Scale – 2nd Edition (ACTeRS)	0	1	2	3	4
72. ADHD-IV Rating Scale	0	1	2	3	4
73. ADHD Symptom Checklist – 4 (ADHD-SC4)	0	1	2	3	4
74. Attention Deficit Disorders Evaluation Scale – 3rd Edition (ADDES-3)	0	1	2	3	4
75. Attention Deficit/Hyperactivity Disorder Rating Scale – Revised	0	1	2	3	4
76. Attention-Deficit/Hyperactivity Disorder Test (ADHDT)	0	1	2	3	4
77. Brown Attention-Deficit Disorder Scales	0	1	2	3	4
78. Child Attention Profile (CAP)	0	1	2	3	4
79. Clinical Assessment of Attention Deficit – Child (CAT-C)	0	1	2	3	4
80. Conners 3 – 3rd Edition	0	1	2	3	4
81. Test of Everyday Attention for Children (TEA-Ch)	0	1	2	3	4
82. Other:	0	1	2	3	4
83. Other:	0	1	2	3	4
Continuous Performance Assessments					
84. Auditory Continuous Performance Test (ACPT)	0	1	2	3	4
85. Conners' Continuous Performance Tests - II (CPT-II)	0	1	2	3	4
86. Gordon Diagnostic System (GDS)	0	1	2	3	4
87. Integrated Visual and Auditory Continuous Performance Test (IVA)	0	1	2	3	4
88. Test of Variables of Attention (T.O.V.A.)	0	1	2	3	4
89. Other:	0	1	2	3	4
90. Other:	0	1	2	3	4
Cognition / Intelligence Assessments					
91. Comprehensive Test of Nonverbal Intelligence – 2nd Edition (CTONI-2)	0	1	2	3	4
92. Das-Naglieri Cognitive Assessment System (CAS)	0	1	2	3	4
93. Differential Ability Scales – 2nd Edition (DAS-II)	0	1	2	3	4
94. Expressive Vocabulary Test – 2nd Edition (EVT-2)	0	1	2	3	4
95. Kaufman Assessment Battery for Children – 2nd Edition (KABC-II)	0	1	2	3	4
96. Kaufman Brief Intelligence Test – 2nd Edition (KBIT-2)	0	1	2	3	4
97. Leiter International Performance Scale – Revised (Leiter-R)	0	1	2	3	4
98. Peabody Picture Vocabulary Test – 4th Edition (PPVT-4)	0	1	2	3	4
99. Reynolds Intellectual Assessment Scales (RIAS)	0	1	2	3	4
100. Slosson Intelligence Test – Revised (SIT-R3)	0	1	2	3	4
101. Stanford-Binet Intelligence Scales – 5th Edition (SB5)	0	1	2	3	4
102. Test of Nonverbal Intelligence – 3rd Edition (TONI-3)	0	1	2	3	4
103. Universal Nonverbal Intelligence Test (UNIT)	0	1	2	3	4
104. Wechsler Abbreviated Scale of Intelligence (WASI)	0	1	2	3	4
105. Wechsler Adult Intelligence Scale – 4th Edition (WAIS-IV)	0	1	2	3	4
106. Wechsler Intelligence Scale for Children – 4th Edition (WISC-IV)	0	1	2	3	4
107. Wechsler Nonverbal Scale of Ability (WNV)	0	1	2	3	4
108. Wechsler Preschool and Primary Scale of Intelligence – 3rd Edition (WPPSI-III)	0	1	2	3	4
109. Woodcock-Johnson III Normative Update - Tests of Cognitive Abilities (WJIII NU-COG)	0	1	2	3	4
110. Woodcock-Johnson III Diagnostic Supplement to the Tests of Cognitive Abilities	0	1	2	3	4
111. Other:	0	1	2	3	4
112. Other:	0	1	2	3	4

Items continued on next page…

	Never 0	Seldom 1	Sometimes 2	Often 3	Always 4
Achievement Assessments					
113. Diagnostic Achievement Battery – 3rd Edition (DAB-3)	0	1	2	3	4
114. Kaufmann Test of Educational Achievement – 2nd Edition (KTEA-II)	0	1	2	3	4
115. Peabody Individual Achievement Test – Revised – Normative Update (PIAT-R/NU)	0	1	2	3	4
116. Wechsler Individual Achievement Test – 3rd Edition (WIAT-III)	0	1	2	3	4
117. Wide Range Achievement Test – 4th Edition (WRAT-4)	0	1	2	3	4
118. Woodcock-Johnson III Normative Update - Tests of Achievement (WJIII NU-ACH)	0	1	2	3	4
119. WJ III NU – Tests of Achievement/Brief Battery (WJIII NU Form C/Brief Battery)	0	1	2	3	4
120. Young Children's Achievement Test (YCAT)	0	1	2	3	4
121. Other:	0	1	2	3	4
122. Other:	0	1	2	3	4
Neuropsychological Assessments					
123. Beery-Buktenica Developmental Test of Visual-Motor Integration (VMI-5)	0	1	2	3	4
124. Behavioral Assessment of the Dysexecutive Syndrome in Children (BADS-C)	0	1	2	3	4
125. Behavior Rating Inventory of Executive Function (BRIEF)	0	1	2	3	4
126. Bender Visual-Motor Gestalt Test – 2nd Edition (Bender-Gestalt II)	0	1	2	3	4
127. Children's Category Test (CCT)	0	1	2	3	4
128. Comprehensive Trail-Making Test (CTMT)	0	1	2	3	4
129. Dean-Woodcock Neuropsychological Battery (DW)	0	1	2	3	4
130. Delis-Kaplan Executive Function System (D-KEFS)	0	1	2	3	4
131. NEPSY-II	0	1	2	3	4
132. Pegboard	0	1	2	3	4
133. Porteus Maze	0	1	2	3	4
134. Raven's Progressive Matrices	0	1	2	3	4
135. Rey Complex Figure and Recognition Trial (RCFT)	0	1	2	3	4
136. Stroop Color and Word Test	0	1	2	3	4
137. Test of Auditory Processing Skills – 3rd Edition (TAPS-3)	0	1	2	3	4
138. Test of Language Development – 4th Edition (TOLD-4)	0	1	2	3	4
139. The Matching Familiar Figures Test (MFFT)	0	1	2	3	4
140. Tower of London – 2nd Edition (TOL-2)	0	1	2	3	4
141. Wisconsin Card Sorting Test (WCST)	0	1	2	3	4
142. Other:	0	1	2	3	4
143. Other:	0	1	2	3	4
Memory and Learning Assessments					
144. California Verbal Learning Test – Children's Version (CVLT-C)	0	1	2	3	4
145. Children's Memory Scale (CMS)	0	1	2	3	4
146. Detroit Tests of Learning Aptitude – 4th Edition (DTLA-4)	0	1	2	3	4
147. Test of Memory and Learning – 2nd Edition (TOMAL-2)	0	1	2	3	4
148. Wide Range Assessment of Memory and Learning – 2nd Edition (WRAML2)	0	1	2	3	4
149. Other:	0	1	2	3	4
150. Other:	0	1	2	3	4

Items continued on next page…

	Never 0	Seldom 1	Sometimes 2	Often 3	Always 4
Adaptive Behavior Assessments					
151. AAMR Adaptive Behavior Scale – School 2nd Edition (ABS-S:2)	0	1	2	3	4
152. Adaptive Behavior Assessment System – 2nd Edition (ABAS-II)	0	1	2	3	4
153. Adaptive Behavior Inventory (ABI)	0	1	2	3	4
154. Scales of Independent Behavior – Revised (SIB-R)	0	1	2	3	4
155. Vineland Adaptive Behavior Scales – 2nd Edition (Vineland-II)	0	1	2	3	4
156. Other:	0	1	2	3	4
157. Other:	0	1	2	3	4
Projective / Personality Assessments					
158. Brief Symptom Inventory (BSI)	0	1	2	3	4
159. Children's Apperception Test (CAT)	0	1	2	3	4
160. House-Tree-Person Drawing	0	1	2	3	4
161. Kinetic Drawing	0	1	2	3	4
162. Millon Adolescent Clinical Inventory (MACI)	0	1	2	3	4
163. Millon Pre-Adolescent Clinical Inventory (M-PACI)	0	1	2	3	4
164. Minnesota Multiphasic Personality Inventory – Adolescent (MMPI-A)	0	1	2	3	4
165. Personality Inventory for Youth (PIY)	0	1	2	3	4
166. Personality Inventory of Children – 2nd Edition (PIC-2)	0	1	2	3	4
167. Roberts Apperception Test for Children – 2nd Edition (Roberts-2)	0	1	2	3	4
168. Rorschach	0	1	2	3	4
169. Sentence Completion	0	1	2	3	4
170. Symptom Checklist – 90 – Revised (SCL-90-R)	0	1	2	3	4
171. TEMAS (Tell-Me-A-Story)	0	1	2	3	4
172. Thematic Apperception Test (TAT)	0	1	2	3	4
173. Other:	0	1	2	3	4
174. Other:	0	1	2	3	4

Items continued on next page…

Section III: ADHD Intervention Information

For items 175-177, please indicate your opinion regarding the statements. Circle the corresponding answer in order to rate the level of agreement to the following statements. Circle SA, if you strongly agree with the statement. Circle SD, if you strongly disagree with the statement. You should circle A, N, or D for ratings in between.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
175. I was well-trained regarding ADHD interventions in my school psychology graduate training.	SA	A	N	D	SD
176. School psychologists are qualified to provide interventions for ADHD.	SA	A	N	D	SD
177. I am confident in my ability to provide interventions for ADHD.	SA	A	N	D	SD

Please answer the following items:

178a. Do you provide interventions for ADHD?

☐ Yes ☐ No

If yes, please complete item numbers 181-238. If no, please answer 178b and then the survey is complete.

178b. If you do not provide interventions for ADHD, do you refer to an outside professional for the interventions?

☐ Yes ☐ No

179. How many interventions did you provide for ADHD in the past year?

180. Approximately what percentage of your interventions provided was for ADHD?

For items 181-238, please circle the corresponding number in order to rate the frequency with which you provide the following types of interventions for ADHD. If you never use the intervention, circle 0. If you always use the intervention, circle 4. You should circle 1, 2, or 3 for ratings in between.

	Never 0	Seldom 1	Sometimes 2	Often 3	Always 4
ADHD Interventions					
181. Consult with physician to monitor medication dosage and efficacy	0	1	2	3	4
182. Create behavior intervention plan for student	0	1	2	3	4
183. Facilitate parent support groups	0	1	2	3	4
184. Provide anger management training	0	1	2	3	4
185. Provide behavior management to the students directly	0	1	2	3	4
186. Provide behavior management training to parents	0	1	2	3	4
187. Provide behavior management training to teachers	0	1	2	3	4
188. Provide biofeedback training	0	1	2	3	4
189. Provide cognitive behavioral therapy	0	1	2	3	4
190. Provide conflict resolution/problem solving training	0	1	2	3	4
191. Provide family therapy	0	1	2	3	4
192. Provide homework interventions	0	1	2	3	4
193. Provide instructional consultation to teacher	0	1	2	3	4
194. Provide neurofeedback training	0	1	2	3	4
195. Provide ongoing support to teachers	0	1	2	3	4
196. Provide parent training/education on ADHD	0	1	2	3	4
197. Provide play therapy	0	1	2	3	4
198. Provide relaxation training	0	1	2	3	4
199. Provide self-directed intervention training	0	1	2	3	4
200. Provide social skill training	0	1	2	3	4
201. Provide teacher education on ADHD	0	1	2	3	4
202. Recommend a combination of interventions	0	1	2	3	4
203. Recommend behavioral approaches to ADHD intervention such as:					
203a. Extinction	0	1	2	3	4

Items continued on next page…

	Never 0	Seldom 1	Sometimes 2	Often 3	Always 4
Interventions Continued					
203b. Negative reinforcement	0	1	2	3	4
203c. Positive reinforcement	0	1	2	3	4
203d. Punishment	0	1	2	3	4
203e. Time out	0	1	2	3	4
204. Recommend cognitive approach to ADHD intervention	0	1	2	3	4
205. Recommend contingency contracting	0	1	2	3	4
206. Recommend dietary restrictions	0	1	2	3	4
207. Recommend habilitation therapy	0	1	2	3	4
208. Recommend home/school communication journal	0	1	2	3	4
209. Recommend hypnosis	0	1	2	3	4
210. Recommend in-home tutoring	0	1	2	3	4
211. Recommend instructional strategies	0	1	2	3	4
212. Recommend intensive, multimodal treatment program	0	1	2	3	4
213. Recommend modifying academic tasks	0	1	2	3	4
214. Recommend modifying environmental factors	0	1	2	3	4
215. Recommend ocular motor exercises	0	1	2	3	4
216. Recommend optimal arousal therapy	0	1	2	3	4
217. Recommend organizational skill training	0	1	2	3	4
218. Recommend parent support groups	0	1	2	3	4
219. Recommend participation in positive behavior support system	0	1	2	3	4
220. Recommend peer coaching	0	1	2	3	4
221. Recommend peer interventions	0	1	2	3	4
222. Recommend peer mediation	0	1	2	3	4
223. Recommend peer tutoring	0	1	2	3	4
224. Recommend physician consultation for medication treatment consideration	0	1	2	3	4
225. Recommend replacement behaviors	0	1	2	3	4
226. Recommend Section 504 Plan	0	1	2	3	4
227. Recommend self-directed interventions such as self-monitoring, self-evaluation, or self-reinforcement	0	1	2	3	4
228. Recommend special education services	0	1	2	3	4
229. Recommend strategies to improve parent/child communication	0	1	2	3	4
230. Recommend strategies to improve parent/child relations	0	1	2	3	4
231. Recommend study skill training	0	1	2	3	4
232. Recommend use of a token economy system	0	1	2	3	4
233. Recommend use of computer assisted instruction	0	1	2	3	4
234. Recommend vitamins, supplements, or other nondrug substances	0	1	2	3	4
235. Refer to behavioral specialist to develop behavior management techniques	0	1	2	3	4
236. Use of other psychotherapies	0	1	2	3	4
237. Other:	0	1	2	3	4
238. Other:	0	1	2	3	4

Thank you for completing the survey!

Appendix B

Initial Cover Letter

May 1, 2010

Dear Fellow NASP Member:

I am a Nationally Certified School Psychologist completing my doctoral work in Educational and School Psychology at Indiana University of Pennsylvania. I am examining the assessment and intervention practices of school psychologists for Attention Deficit Hyperactivity Disorder (ADHD). Children with ADHD often experience academic and social difficulties in school that can lead to a high incidence of referrals to school psychologists for the assessment and intervention of ADHD. School psychologists are often in an excellent position to help children with ADHD. There is a need to examine the school psychologists' practices in the area of assessment and intervention practices for ADHD because of ambiguity within practices and the lack of previous research on the topic. ***Based on information collected during a pilot study of the survey, this survey should only take 10-15 minutes of your time.***

The NASP Research Committee has reviewed this study and granted the researcher permission to recruit NASP members as research participants. Indiana University of Pennsylvania supports the practice of protection of human subjects participating in research. This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730). There are no known risks or discomforts associated with this research. Please be aware that even if you agree to participate in this survey study, you are free to withdraw at any time and you may do so without penalty. Although your participation is solicited, it is strictly voluntary. The survey has an identification number for mailing purposes only. This number is used to verify returned surveys and to assist with follow-up on unreturned surveys. Your name will never be placed on a survey and your name will not in any way be associated with any of the findings. All information obtained will be kept confidential and incorporated into group data. The enclosed survey should take about 10-15 minutes to complete. To encourage participation, a random drawing from those who have responded will be conducted and five $50 gift cards will be given away. To be eligible for the drawing, the respondents must complete and return the survey by May 14, 2010. Please complete and return the survey in the enclosed, self-addressed stamped envelope by May 14, 2010. Your return of a completed survey implies consent.

If you have any questions or require additional information, please feel free to contact either of us as listed below. If you choose not to participate, please return the incomplete survey in the enclosed envelope.

I understand that this is yet another item to add to your busy schedule. Your input will help gain a better understanding of ADHD assessment and intervention practices. We appreciate your time and cooperation and look forward to receiving your completed survey.

Sincerely,

Timothy J. Borick, Ed.S., NCSP
School Psychologist/Doctoral Candidate (IUP)
212 Ontario Street
Olyphant, PA 18447-2300
(570) 876-4528
timborick@yahoo.com

Edward Levinson, Ed. D.
Committee Chair/Professor
Indiana University of Pennsylvania (IUP)
Educational & School Psychology
246 Stouffer Hall
Indiana, PA 15705
(724) 357-3786
emlevins@iup.edu

Appendix C

Follow-up Postcard

May 14, 2010

Dear Fellow NASP Member:

Approximately two weeks ago you should have received a survey seeking your input on the role of school psychologists in assessment and intervention for ADHD. The survey was sent to NASP members throughout the United States.

If your survey has already been returned, I would like to thank you for your participation. If you have not yet completed the survey, please do so today because your input is very valuable. Although your participation is solicited, it is strictly voluntary.

If by some chance you did not receive the survey or if it has been misplaced, please email me at timborick@yahoo.com or call me at (570) 876-4528. I will mail out another survey immediately.

Thank you for your time and cooperation,

Timothy J. Borick, Ed.S., NCSP
School Psychologist/Doctoral Candidate (IUP)
212 Ontario Street
Olyphant, PA 18447-2300
(570) 876-4528
timborick@yahoo.com

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emlevins@iup.edu

Appendix D

Follow-up Cover Letter

Name of non-responding respondent
Street Address
Town, State Zip

June 1, 2010

Dear Fellow NASP Member:

Approximately four weeks ago, you should have received a survey seeking your input on the role of school psychologists in assessment and intervention for ADHD. The survey was sent to NASP members throughout the United States. As of today, I have not received your completed survey. I really would like to include your feedback in the results.

The purpose of this study is to sample the assessment and intervention practices of school psychologists regarding ADHD. There is a need to examine school psychologists' practices in the area of assessment and intervention practices for ADHD in order to gain a better understanding of current practices and role responsibilities.

If your survey has already been returned, I would like to thank you for your participation. If you have not yet completed the survey, please take a moment to complete the enclosed survey and return it in the self-addressed stamped envelope. ***Based on information collected during a pilot study of the survey, this survey should only take 10-15 minutes of your time.*** Please do so today because your input is critical. Although your participation continues to be solicited, it is strictly voluntary.

Please contact me at (570) 876-4528 or timborick@yahoo.com if you have any questions or require additional information.

Thank you for your time and cooperation.

Respectfully,

Timothy J. Borick, Ed.S., NCSP
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Appendix E

Second Follow-up Cover Letter

Name of non-responding respondent
Street Address
Town, State Zip

June 14, 2010

Dear Fellow NASP Member:

Several weeks ago, you should have received a survey designed to investigate the assessment and intervention practices of school psychologists with ADHD. The survey was sent to NASP members throughout the United States. We have been very pleased with the response rate thus far. However, our records indicate that your survey packet has yet to be returned. If you have returned the survey materials, please accept our gratitude and disregard this letter.

If you have not returned the survey, please take a moment to complete the enclosed survey packet and return it in the self-addressed stamped envelope. Please complete and return the survey by June 28, 2010. As a practitioner, you know that the highest response rate is critical to the validity of this study. The results of this study will hopefully provide trainers of school psychologists, and school psychologists themselves, with important information regarding ADHD assessment and intervention practices. Your input is critical.

Your support and cooperation are greatly appreciated since we understand how busy a school psychologist can be. There are no known risks or discomforts associated with this research. Although your participation continues to be solicited, it is strictly voluntary. Your return of a completed survey implies consent. If you have any questions about the research project or the survey, please contact me at (570) 876-4528 or at timborick@yahoo.com.

Thank you for your time and cooperation.

Sincerely,

Timothy J. Borick, Ed.S., NCSP
School Psychologist/Doctoral Candidate (IUP)
212 Ontario Street
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Appendix F

Gift Card Winner’s Cover Letter

Name of Gift Card Winner
Street Address
Town, State Zip

August 11, 2010

Dear Winner's Name:

Congratulations! You have won a $50 gift card in the drawing conducted among timely responders to the survey entitled, Assessment and Intervention Practices Survey for ADHD. Please enjoy the enclosed gift card.

As outlined in the initial cover letter that accompanied the survey, a drawing was conducted among those who returned completed surveys by May 14, 2010. In all, 155 respondents were eligible. From this group, five names were randomly drawn to win $50 gift cards each. You are one of the lucky winners. The gift card is yours to enjoy as you please.

The drawing was conducted to encourage participation. I am pleased to report a return rate of 51% for this national survey. I felt it was an excellent return rate considering the busy schedules of school psychologists. I would like to thank you for your cooperation and timely response.

Congratulations. If you have any questions about the research project, please contact me at (570) 876-4528 or at timborick@yahoo.com.

Sincerely,

Mr. Timothy J. Borick, Doctoral Candidate
School Psychologist
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