Perceptions of School Psychologists Regarding Behavioral Interventions for Children with Autism Spectrum Disorders and Co-occurring Emotional and Behavioral Disorders

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By

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Abstract

This study surveyed school psychologists' experience and confidence working with children diagnosed with Autism Spectrum Disorders (ASD), as well as the amount and type of training received and importance of receiving additional training. Members randomly selected from the National Association of School Psychology (NASP) membership completed a survey. Significance tests conducted determined differences existed between doctoral and non-doctoral school psychologists across several demographic, caseload, training, and confidence variables. Doctoral level school psychologists were older, had a greater number of years in the field, assessed a greater number of students with ASD and EBDs, and had higher levels of confidence in his or her ability to assess, counsel, develop behavioral intervention plans, and consult with those who work directly with students with ASD and EBDs. Additional data described self-reported training experiences in ASD and perceptions of training. Regression analyses performed identified predictors of confidence in working with students with ASD and EBDs. Perceptions of training emerged as the only significant predictor of confidence to deliver various services to students with ASD. In addition, descriptive data indicated that a fairly small percentage of school psychologists believed that they were well trained to work with students with ASD, a relatively large percentage desired more training, and many believed that this training was important.
CHAPTER ONE

Introduction

As a school psychologist, there is immense pressure to be knowledgeable about a variety of areas such as characteristics of students with special needs, assessment, and interventions. While autism spectrum disorders (ASD) are considered low incidence disabilities, schools are challenged to provide appropriate supports for these children due to their complex needs. Children with an autism spectrum disorder may also have emotional or behavioral concerns that do not present as they would in a typically developing child. This is due to the developmental and neurocognitive difficulties experienced by children with ASD. Their inability to recognize or express emotional needs, as well as, social and communication deficits impede their ability to say how they feel. These children may act out, react aggressively to avoid stimuli they do not like, or impulsively seek out pleasurable stimuli. These behaviors are a problem in the classroom because they not only disrupt the child’s learning but they also disrupt their peers and the teacher.

The Individuals with Disabilities Education Improvement Act (IDEIA) of 2004, (IDEIA, 2004) requires the placement of children in a learning environment that is least restrictive. For a child with ASD placement in a regular education classroom becomes difficult with the presence of Emotional and Behavioral Disorders (EBDs). The majority of interventions designed for problem behaviors require more time than one regular education teacher can give to one individual student. Therefore, the presence of EBDs for children with ASD increases the amount of support and intervention needed within a classroom, be it a regular education or special education classroom. It is the role of the school psychologist to assess, design interventions, and consult with other school staff regarding these students. Therefore, school psychologists need to
correctly identify any emotional and behavioral problems a child may be experiencing, for placement in the least restrictive environment. Only then can the development of appropriate and evidence-based interventions specific to the child occur to improve the student’s learning outcome.

The training requirements for school psychologists may not be adequate to deal with the sometimes-overwhelming behavioral concerns found with over half of the children with ASD and EBDs. Training programs approved by the National Association of School Psychology (NASP) are designed to give graduate school psychology students adequate training needed to work with the general school-age population. With the growing number of children diagnosed with ASD, one begins to question if these training program requirements will be enough to stay current with the increasing need for knowledge on these low incidence disabilities.

**Problem Statement and Purpose of the Study**

It is important to investigate the perceptions of school psychologists regarding their confidence in supporting children with ASD who have co-occurring EBDs. EBDs often have atypical presentation in children with ASD, which leads to difficulty identifying them accurately and in a timely manner. Children with ASD are already challenging to work with due to neurocognitive deficits. In addition, the presence of a co-occurring EBD more often relates to poorer outcomes in life. Research has found that children with ASD and EBD have poorer life outcomes because EBDs tend to become stable and persist over time if not treated (Howlin, 2000). Between 9 and 11 percent of adult persons with ASD have some type of co-occurring psychiatric diagnosis, which further affects their ability to function independently (Howlin, 2000). Therefore, it is important to assess accurately for EBD’s so that interventions can be developed effectively ultimately increasing the probability of better adult outcomes. Designing
interventions for students with ASD is often affected by the presence of EBDs because often times EBDs interfere with ASD-specific interventions.

School psychologists are the key providers in developing appropriate support plans in schools, yet it is unclear how much training program requirements focus on ASD and EBD student populations. In addition, school psychologists’ training differs depending on whether they have attended a doctoral or non-doctoral program. Due to the differences among training programs, it is unclear how confident school psychologists are in working with ASD and EBD students.

This study will survey school psychologists in regards to their training in assessment, the development of interventions, and the implementation of interventions for behavioral problems. Since training programs approved by the National Association of School Psychologists (NASP) are required to train school psychologists in a very prescriptive manner, these Masters/Specialist programs most likely have less time available to offer the extensive training needed to work with children who have ASD and EBDs. In comparison, NASP approved PhD level programs may be more likely have the ability to offer specialization in ASD. Based on these differences in training, school psychologists may have lower levels of confidence in assessing and addressing EBDs in this population through counseling, behavior intervention plans, and consultation, especially coming from Masters/Specialist level programs.

Therefore, this study will address the following research questions. First, are there significant differences between non-doctoral and doctoral school psychologists on the following variables: demographic, case load, service, confidence in assessment, counseling, developing behavioral interventions, and consulting with others on students with ASD and EBDs, perceptions of how well trained school psychologists felt, amount of additional training desired,
and perceptions of importance of additional training. Second, to what extent was confidence in assessing for EBDs, counseling, developing behavioral interventions, and consulting on students with ASD and EBDs predicted by the following variables: degree type, number of years working, number of students with ASD and EBDs worked with this year, and perceptions of training. Finally, for each analysis, which predictors are statistically significant and how much variance in the criterion does each uniquely account for?

**Delimitations of the Study**

The participants only included NASP members because the Association provided a mailing list that was used to obtain a rather large and diverse sample of school psychologists. Because this appears to be the first study of its kind, there was no distinction made between professionals working at different grade levels nor any comparisons made between school psychologists’ perceptions of confidence and other professionals working in schools.

This study does not compare levels of confidence in working with children with other disabilities to levels of confidence in working with children diagnosed with ASD. Finally, no distinction is made between school psychologists working with Autism versus Asperger’s or Pervasive Developmental Disorder - Not Otherwise Specified. School psychologists will be surveyed on their work with children who present with any form of ASD.

Because Rett’s Disorder and Childhood Disintegrative Disorder have extremely low occurrence rates in the population and the associated severe impairment make it unlikely these children will attend public schools Autistic Disorder, Asperger’s Disorder, and Pervasive Developmental Disorder - not otherwise specified (PDD-NOS) will be the focus of this study.

**Definitions of Key-Terms**
The term *Autism Spectrum Disorder* (ASD) is used for any child who reportedly has a DSM-IV diagnosis of Autism, Asperger's, and Pervasive Developmental Disorder-Not otherwise Specified. In addition, for brevity the term autism will be used interchangeably with ASD.

*Emotional and Behavioral Disorders* (EBD) refers to marked behavioral and/or emotional responses divergent from age, cultural or ethnic norms which ultimately affect academics, social, and adaptive functioning. These responses last across time and settings, while remaining unresponsive to direct interventions implemented in a general education setting (Forness & Kavale, 2000).

*Evidence-Based Assessment* according to Mash and Hunsely (2005) refers to assessment methods that “are based on empirical evidence in terms of their reliability and validity as well as their clinical usefulness for prescribed populations and purposes” (Mash & Hunsley, 2005, p. 364).

*Evidence-Based Treatment* is defined as using scientific knowledge to inform practitioner’s decisions regarding interventions (Detrich, 2008).

**Non-Doctoral Training**

A) *Master's Level Training* is attendance in a program which includes at least 36 semester credits and a field experience. These programs are being phased out as current standards require at least 60 graduate semester hours (National Association of School Psychologists, 2000)

B) *Specialist Level Training* refers to attendance at a program that includes at least 60 graduate semester hours and includes at least one academic year of supervised internship experience lasting a minimum of 1200 clock hours (National Association of School Psychologists, 2000).
The term *Doctoral Level Training* refers to completion of a program that includes at least four years of full-time graduate study with a minimum of 90 graduate semester hours where 78 of these credits are for classes and 12 hours make up the full-time supervised internship and a doctoral project/thesis. The supervised internship experience consists of at least 1500 clock hours (National Association of School Psychologists, 2000).
CHAPTER TWO

Overview and Purpose of the Study

This chapter is a review of the relevant literature, which forms an empirical basis for the proposed study. First, characteristics of individuals with Autism Spectrum Disorders (ASD) and related emotional and behavioral disorders (EBD) are discussed. Next, the literature for evidence-based assessments and evidence-based interventions for children with ASD and co-occurring EBD is reviewed. Lastly, school psychologists training and perceptions of their training in working with children with ASD and other co-occurring disorders are explored.

Children with ASD often experience co-occurring emotional and/or behavioral problems. Emotional and behavioral disorders (EBD) are broadly defined as reactions emotionally or behaviorally that markedly differ from same aged peers and is not accounted for by culture or ethnic norms (Forness & Kavale, 2000). EBDs include general conditions such as aggression and self-injury, and more specific DSM-IV psychiatric disorders, such as Anxiety, Depression, Oppositional Defiant Disorder, or Conduct Disorder. These children require multiple and often intensive school-based services, under the Individuals with Disabilities Education Improvement Act of 2004 (Individuals with Disabilities Education Improvement Act, 2004), as well as community based supports.

School psychologists across the nation are trained in programs that often do not specialize in ASDs. Lack of training in masters/specialists and doctoral level programs is a cause for concern. School psychologists need to be knowledgeable about children with ASD and problem behaviors to serve their highly individualized needs. To have confidence in oneself when working with this population may lead to a more effective and appropriate delivery of
supports and services for these children. If children with ASD do not receive appropriate supports the child will continue to exhibit problem behaviors thus affecting both the child’s ability to learn leading to a poorer quality of life, and ongoing difficulties for the teacher to effectively teach her students. In addition, both time and money are wasted. The outcome for these children will improve as they are able to receive appropriate interventions and education.

This study surveyed school psychologists’ experience and confidence working with children diagnosed with ASD, as well as amount and type of training received and importance of receiving additional training. This included inquiry about the number of students assessed, the number of behavioral interventions developed or revised, the amount of individual or group counseling conducted, and the number of different individual case consultations provided by each school psychologist in the current school year. Based on self-reports the extent of training school psychologists received in ASD are also described. Lastly, perceptions of confidence in assessing for emotional and behavioral disorders (EBDs), addressing co-occurring EBDs through counseling, developing effective behavioral intervention plans, and providing consultation for those working directly with students with ASD were also assessed. The results of this study will inform practitioners and researchers of areas in school psychologists’ training that may need to be enhanced in order to work with children with ASD. By identifying areas of weakness in training specific to the ASD population, improved training in this area would result in better-prepared graduates to work with these students, and more importantly, better student outcomes.

**Autism Spectrum Disorders: Diagnostic Features**

Autism Spectrum Disorders (ASD) are classified by the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000) within the category of Pervasive Developmental Disorders (PDD). The five PDD’s include Autistic
Disorder, Asperger's Disorder, Pervasive Developmental Disorder Not Otherwise Specified, Rett's Disorder, and Childhood Disintegrative Disorder. These types of disorders are all evident in the first years of life and most commonly occur with a diagnosis of Mental Retardation (APA, 2000).

There are qualitative deficits in a child with Autistic Disorder (AD) in three areas: social interaction, communication, and repetitive or stereotyped behaviors and interests. A deficit in social interaction is described as "an impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction" (APA, 2000, p. 75). Social deficits may also include a lack of peer relationship development, deficiency in seeking enjoyment spontaneously with other people, or not showing "social or emotional reciprocity" (APA, 2000, p. 75). Communication deficits are described as a delay or failure to develop spoken language, or to start or sustain a conversation with another person. Using repetitive or idiosyncratic language, or experiencing difficulty playing make-believe or imitating social patterns are also indicative of a communication deficit (APA, 2000). Lastly, repetitive or stereotyped behaviors and interests include an intense preoccupation with an object or concept, and inflexibility to changes in routines or rituals. "Stereotyped and repetitive motor mannerisms or persistent preoccupation with parts of objects" are also included in this area of deficit (APA, 2000, p. 75). A child must have at least two deficits in social interaction, at least one deficit in communication and one deficit in repetitive or stereotyped behavior and interests prior to the age of three years old to have a diagnosis of AD. Additionally, these deficits cannot be better accounted for by Rett's Disorder or Childhood Disintegrative Disorder to have Autistic Disorder.
Asperger’s Disorder (Asp) is similar to Autistic Disorder in many ways with some exceptions. Children with Asp do not exhibit delays in language, cognitive development, self-help, adaptive behavior, and curiosity about the environment (APA, 2000). In spite of this, children with Asp do have difficulty with pragmatic/social language. Frequently, conversations may consist of irrelevant details, perseveration, lack of awareness that the other person initiated conversation, and awkward shifts in topic. In essence, these children have difficulty understanding the rules of how to have conversations with another individual (Klinger, Dawson, & Renner, 2003). The normal development of cognition and early language acquisition in children with Asp explain the late diagnosis of these children until after placement in social situations such as preschool or kindergarten (APA, 2000). An Asp diagnosis can only be made after ruling out the possibility of another PDD or Schizophrenia.

PDD-NOS is characterized by difficulty with reciprocal social interactions, or having some stereotyped behaviors, interests and activities, yet the child does not meet the criteria for Obsessive Compulsive Disorder, Schizophrenia, or Avoidant Personality Disorder. A PDD-NOS diagnosis is used when a child possesses ASD characteristics but does not meet the criteria for AD or Asp, and the behavior cannot be accounted for by the other disorders mentioned.

Prevalence and Etiology

According to the Centers for Disease Control and Prevention (2008) the number of children diagnosed with an autism spectrum disorder in 2007 was 1 in 150. To every one female diagnosed with ASD there are three to five males diagnosed (APA, 2000; Klinger, Dawson, & Renner, 2003). Etiological studies suggest that ASD is a genetically based disorder. Hence, ASD affects the way the brain is structured, and how it functions, ultimately leading to behavioral manifestations (Klinger, Dawson, & Renner, 2003). There is wide variability in
symptom presentation across individuals, and symptoms also vary within the same individual over time. Such heterogeneity of symptom presentation poses challenges for both assessment and intervention planning across the lifespan.

**Associated Features**

Along with the core deficits of ASD, children may also display associated features. Abnormalities in EEG’s, seizure disorders and sleep disturbances are common (Klinger, Dawson, & Renner, 2003). Despite the lack of research on eating habits, many parents report their children’s eating habits are affected by the texture, color, or taste of the food. This often leads to unbalanced diets if not monitored (Klinger, Dawson, & Renner, 2003).

Other associated features of ASD fall in the category of neuro-cognitive deficits. Many children with AD have an intellectual disability ranging from mild to profound. Children with ASD may evidence an uneven development of cognitive skills including verbal-nonverbal discrepancy, and problems with working memory. In addition, problems with information processing, memory, cognitive flexibility (i.e. rigid thinking), and attention are typical impairments seen with ASD (Klinger, Dawson, & Renner, 2003). In addition to these deficits, children with ASD tend to exhibit strengths in rote learning and weaknesses for tasks requiring concept formation, abstract thinking and generating knowledge. Executive functioning problems, which manifest in poor self-regulation of behaviors, motivations and emotions have also been identified (Klinger, Dawson, & Renner, 2003), and are often associated with emotional and behavioral disorders. Due to these deficits, it is often difficult for children with ASD to adapt successfully to the academic and social demands of general educational school programs.

Due to the extensive deficits found in children with ASD, specialized professional training is needed to appropriately support these students. School psychologists need to
understand how deficits associated with ASD affect learning and are related to behaviors that impede learning in regular education. Therefore, school psychologists need to effectively assess these students’ individual needs and develop appropriate behavioral interventions.

**Co-occurring Emotional and Behavioral Disorders**

Children with ASD often evidence high rates of co-occurring EBD's. Studies support that rates of co-occurring EBD's range from 2 percent to 80.9 percent (e.g., see Brereton, Tonge, & Einfeld, 2006; De Bruin, Ferdinand, Meester, De Nijs, & Verheij, 2007; Ghaziuddin, Ghaziuddin, & Greden, 2002; Matson & Nebel-Schwalm, 2007). More often these kinds of studies focus on groups of children with ASD and intellectual disabilities. One such study found that children with autism and intellectual disabilities had co-occurring rates of total psychiatric and behavior disorders four times higher than children with intellectual disability alone (Bradley, Summers, Wood, & Bryson, 2004). A second study investigated co-occurring disorders in children with PDD-NOS. Overall 80.9 percent of school aged children in the sample had at least one co-occurring disorder, and over half (54.3%) of the children had two or more co-occurring psychiatric disorders (De Bruin, Ferdinand, Meester, De Nijs, & Verheij, 2007). Brereton, Tonge, and Einfeld (2006) also found similar results, 73.3 percent of children identified with ASD were found to have a co-occurring disorder. Based on these results the majority of children with ASD meet criteria for a psychiatric disorder, which is higher than in the general population.

Research supports the occurrence of disorders like anxiety, phobias and depression in children with ASD but the samples are usually small and the methods often differed across studies (Matson & Nebel-Schwalm, 2007). Despite this, there are a growing number of studies to support that children with ASD often present with a variety of co-occurring disorders. These studies looked at aggression (Brereton et al., 2006; Horner et al., 2002), self injurious behavior
(SIB; Horner et al., 2002; Matson & Nebel-Schwalm, 2007), anxiety (Brereton et al., 2006; Bradley et al., 2004; De Bruin et al., 2007; Matson & Nebel-Schwalm, 2007; Kim, Szatmari, Bryson, Streiner, & Wilson, 2000), depression (Brereton et al., 2006; De Bruin et al., 2007; Ghaziuddin et al., 2002; Kim et al., 2000; Matson & Nebel-Schwalm, 2007), attention problems, hyperactivity, and impulsivity (Brereton et al., 2006; De Bruin et al., 2007; Leyfer, et al., 2006), oppositional behavior (De Bruin et al., 2007; Matson & Nebel-Schwalm, 2007), and tics (Baron-Cohen, Mortimore, & Moriarty, 1999). These EBD's can also significantly interfere with a child’s ability to function successfully in many environments including school settings, and adversely affect the quality of life of the affected student and his/her family.

The Use of Evidence Based Assessment

Despite high rates of co-occurring EBD’s little research has been completed to date to reliably identify EBD’s in children with ASD. This is problematic since developmental difficulties often cause atypical presentation of EBDs in children with ASD. Because of their communication impairments, poor self-insight and understanding of abstract concepts, these children often have difficulty accurately reporting the types of emotions they experience as well as their emotional needs. Therefore, school psychologists may not be able to recognize the existence of a co-occurring EBD and diagnostic overshadowing occurs. Diagnostic overshadowing refers to behaviors and symptoms that are incorrectly attributed to the primary diagnosis (i.e., ASD) rather than as the result of a co-occurring disorder (Reiss & Levitan, 1982). This increases the risk for a failure to provide timely EBD-specific treatment. Thus, evidence-based assessments need to be available for individuals with an ASD.
Assessment procedures to identify a child with ASD are much more advanced than are procedures to diagnose EBD in children with ASD. According to best practice, the first step in autism diagnosis requires a multi-method assessment, which includes a medical and developmental history, record review, direct observations, a parent interview and/or a screening tool (Ozonoff, Goodlin-Jones, & Solomon, 2005). These methods should be completed by various professionals and people in the child’s life. It is important to assess a child using a diagnostic measure that is well researched and has good psychometric qualities (Mash & Hunsley, 2005). Two of these measures include the Autism Diagnostic Interview-Revised (ADI-R; Lord, Rutter, & Le Couteur, 1994) and the Autism Diagnostic Observation Schedule (ADOS; Lord, Rutter, DiLavore, & Risi, 1999). The ADI-R is a comprehensive parent interview that is best suited to confirm the initial diagnosis of autism, but it is very labor intensive and not recommended for children below a mental age of 20 months or an IQ below 20 (Ozonoff, Goodlin-Jones, & Solomon, 2005). The ADOS is a semi-structured direct observation instrument. It allows the observer to set up multiple opportunities for social interaction and communication. It can be used with all ages and it has good psychometric properties (Ozonoff, Goodlin-Jones, & Solomon, 2005), but it is not as effective for use with lower functioning children. The diagnostic evaluation is completed by those with clinical expertise in ASD and developmental disabilities (DD).

The second part of the recommended steps to diagnose autism requires different assessments. An intellectual assessment is completed to identify the child’s cognitive strengths and weaknesses for educational planning and goal setting (Ozonoff, Goodlin-Jones, & Solomon, 2005). In addition, expressive and receptive language and adaptive behavior testing are
recommended. Ozonoff et al. (2005) also indicate that further areas of testing can be completed, such as neuropsychological assessment, attention, executive functioning, academic functioning, and psychiatric assessment.

The assessment literature related to co-occurring emotional and behavioral problems is not as advanced. To date there is a gap in the research for screening measures designed to identify co-occurring psychological disorders in school-age children with ASD. The Nisonger Child Behavior Rating Form (NCBRF; Aman, Tasse, Rojahn, & Hammer, 1996) is a behavior rating scale used to identify social and behavior problems, and it is designed for use on children with an intellectual disability ages 3-22. Even though it has not been normed on the ASD population one group of researchers conducted a factor analysis to investigate the NCBRF's validity for use with children with ASD. The results supported the factor structure of the NCBRF on the ASD sample (Lecavalier, Aman, Hammer, Stoica, & Mathews, 2004). However, the NCBRF scales are not well aligned with the DSM-IV diagnostic categories and assess for many non-specific symptoms. The Aberrant Behavior Checklist (ABC; Aman & Singh, 1994), while not normed on the ASD population, could be used to assess for EBDs in children with ASD. This instrument was originally designed to assess for problem behaviors in developmentally disabled populations based on five subscales: irritability, lethargy, stereotypic behavior, hyperactivity, and inappropriate speech. A factor analysis confirmed that the ABC could be used on children with ASD to assess for and track the progress of problem behaviors (Brinkley, et al., 2007). The Child Behavior Checklist 1.5-5 (CBCL; Achenbach & Rescorla, 2000), a third-party rating scale that screens for a wide range of EBDs in preschool age children, is widely used in the general populations. Even though the CBCL is not normed on an ASD population, a confirmatory factor analysis suggested that the CBCL 1.5-5 could be used to assess
for EBDs, and should be used in conjunction with other clinical data for diagnostic decision-making (Pandolfi, Magyar, & Dill, 2009). More research is still needed for the school age CBCL forms to validate their use with ASD populations.

Leyfer et al. (2006) developed a new instrument called the Autism Comorbidity Interview-Present and Lifetime version (ACI-PL). The authors aimed to develop a “diagnostic gold standard tool” for diagnosing co-morbid psychopathology in children with ASD (Leyfer, et al., 2006, p. 851). Although it identified psychological disorders such as Depression, Bipolar Disorder, Anxiety Disorders, Attention Deficit Hyperactivity Disorder, and Oppositional and Defiant Disorder, more research is needed to establish its reliability and validity.

Given that children with ASD often present atypically many commonly used rating scales may not adequately identify the child’s symptoms of an EBD. Practitioners may either over or under estimate the occurrence of an EBD in a child with ASD resulting in the risk for inappropriate interventions. For instance, the DSM-IV (2000) includes behaviors such as hyperactivity, aggressiveness and self-injury as non-specific symptoms related to autism. However, these symptoms can also be used to describe ADHD, anxiety and depression in children. The identification of evidence-based tools to reliably identify co-occurring emotional and behavioral disorders in children with ASD is therefore needed. Until then practitioners will be challenged to accurately identify co-occurring EBDs that require specific treatment.

**Evidence-Based Treatments**

Assessment should be linked to the development of appropriate evidence-based interventions as a matter of best practice (Mash & Hunsley, 2005). Evidence-based practice in psychology is defined as “the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preference” (APA Presidential Task Force on
Evidence-Based Practice, 2006, p. 273). This definition implies that no one intervention will work for all children with ASD. Each intervention or treatment must be developed as a unique plan for the child based on the information gleaned from the assessments conducted as well as interventions that have been supported through research studies to work for children with similar problems. If a child is identified as having a co-occurring emotional or behavioral disorder then the use of evidence-based treatments for that specific disorder could be used with the ASD population.

The problem here is that no evidence-based interventions for the co-occurring conditions have been identified specifically for children with ASD. For instance, Cognitive Behavioral Therapy (CBT) is used for adolescents with depression (Crisp, Gudmundsen, & Shirk, 2006), however, children with ASD often have difficulty expressing their emotions and thoughts due to language impairments. They also struggle with complex concepts such as emotions, self-awareness, information processing, and perspective taking making it extremely difficult to implement CBT with children with ASD without modifications that tailor treatment delivery to their unique development and learning profiles (e.g. visual supports, social stories, more frequent sessions, and use of direct instruction). More research on CBT for children with ASD is needed.

**Behavioral Interventions**

In schools, teachers often need to deal with behavior problems. For children with ASD, behaviors in the classroom are often an issue during the first several years of school or during transitional years. A meta-analysis conducted in 2002 by Horner, Carr, Strain, Todd, & Reed summarized the research on behavioral interventions for children with autism eight years old or younger. As a part of their study, they identified problem behaviors that included tantrums, physical aggression, stereotypy, and self-injury (Horner, Carr, Strain, Todd, & Reed, 2002).
Thus, it is important for school psychologists to be aware of the most recent research in order to offer consultation to teachers regarding these specific behavior problems.

In order to prevent and/or change problem behaviors effective behavioral interventions for children with ASD are needed. A process known as a functional behavioral assessment (FBA) is used to develop these interventions (Horner, Carr, Strain, Todd, & Reed, 2002). First, the problem behavior is clearly defined in measurable terms (Buschbacher & Fox, 2003) and the antecedents and consequences that predict and maintain problem behaviors (Williams, Johnson, & Sukhodolsky, 2005) must be identified. This helps identify what purpose the behavior servers for the individual. Next, positive alternative behaviors need to be identified which may serve the same function as the problem behavior or increase coping skills (Luiselli, 2008). The development of interventions is then possible based on the information collected with the FBA.

While FBAs do not diagnose EBDs in children their use is recommended as best practice for school psychologists as a way to develop effective interventions based on the problem behaviors (Knoster & McCurdy, 2002). In addition, FBAs are required for any student that shows significant behavior problems that interfere with learning (IDEIA, 2004). The law does not indicate use for any particular population of students; however, research indicates that FBAs are highly recommended for use with ASD populations (Horner, Carr, Strain, Todd, & Reed, 2002; Ozonoff, Goodlin-Jones, & Solomon, 2005) particularly because they are directly linked to interventions. Unfortunately, school psychologists only receive general training in FBAs and the development of Behavioral Intervention Plans (BIPs), and the opportunity to learn how to conduct FBAs and develop BIPs for children with ASD and EBDs may be limited.

When creating BIPs it is important to select specialized intervention methods implemented with good integrity. Therefore the behavioral interventions should be implemented
by capable persons able to collect data to measure the effectiveness of the interventions over time (Horner, Carr, Strain, Todd, & Reed, 2002). Most often the school psychologist will train teachers or implement the behavioral interventions themselves depending on the district.

The developmental and neurocognitive deficits that affect students with ASD’s ability to communicate and process information may hinder the effectiveness of specific types of interventions not yet studied in ASD samples. Currently, the research completed on FBAs and BIPs supports their use for children with ASD (Dunlap, Iovannone, & Kincaid, 2008; Eldevik, Eikeseth, Jahr, & Smith, 2006; Horner, et al., 2002; Knoster & McCurdy, 2002). More research is needed on the assessments of EBD and EBD-specific interventions for children with ASD. School psychologists need to be aware of this lack of research when working with these students in schools. Because school psychologists receive general training there is concern that they are unaware of the heightened possibility of EBDs in ASD students, and how to accurately identify and intervene effectively with them.

**NASP Training of School Psychologists**

The National Association of School Psychologists (NASP) requires a number of training standards for doctoral and non-doctoral training programs. Training programs approved by NASP mandate that students are trained in eleven domains (National Association of School Psychologists, 2000): (1) Data-based decision-making and accountability, (2) Consultation and collaboration, (3) Effective instruction and development of cognitive/academic skills, (4) Socialization and development of life skills, (5) Student diversity in development and learning, (6) School and systems organization, policy development, and climate, (7) Prevention, crisis intervention, and mental health, (8) Home/school/community collaboration, (9) Research and program evaluation, (10) School psychology practice and development, and (11) Information
technology. All of these areas are relevant for school psychologists that work with children with ASD, however, school psychologists are trained to work with the general population. The extent to which school psychologists are prepared to work specifically with students with ASD is unknown, but is likely to vary widely across programs. To date there are no published studies that investigate the number of programs actually offering courses or field work specific to ASD. One study investigated school psychologists' reports of the types of assessments and interventions that they use with children that have low incidence disabilities (Cole & Shapiro, 2005). Trainers and practitioners were both questioned using two national surveys. Ninety-five percent of training directors reported their programs had integration of low incidence disabilities (LID) in assessment and intervention classes. They also reported that the students in the programs spent around 26-50% of their time assessing and designing interventions for students with LID. Despite this 82% of trainers reported that the programs provide few or no strategies to use for students with LID when integrating them into a general education setting (Cole & Shapiro, 2005). Practitioners reported that 84% had ten or fewer cases with children with LID in the last 12 months. Only 16% of practitioners had more than 10 cases (Cole & Shapiro, 2005). This study gave some insight into the practices of training programs.

Another specific difficulty within the NASP training requirements is with Domain 4, Socialization and development of life skills. It specifically states that school psychologists need to have “a knowledge of human developmental processes, techniques to assess these processes, and direct and indirect services applicable to the development of behavioral, affective, adaptive, and social skills” (National Association of School Psychologists, 2000, p. 15-16). Often times NASP approved programs fulfill this requirement with one class in Applied Behavioral Analysis and one class in Child Development. School psychologists would most likely need more than
one class in each area to develop enough knowledge in human development specific to children
with ASD. New standards for school psychologists were proposed in 2006, Blueprint III:
Images of School Psychology's Future (Telzrow, Burns, & Ysseldyke, 2006). It is an amended
version of both Blueprint II and NASP's Standards for Training and Field Placement and
outlines eight domains for training rather than the 10 and 11 domains outlined respectively. Like
previous standards however, Blueprint III describes standards for training with the general
population. Thus it continues to be unknown if graduate students would receive specific training
in regards to the ASD population. According to NASP's online website, Blueprint III has not
been adopted by the Delegate Assembly of NASP and is not considered a part of NASP
standards.

There is one study that focused on a training program at the University of Utah that
documented their experiences after implementing a specific program to work with children who
have ASD and behavior problems (Jenson, Clark, Sloane, Kehle, & Clifford, 1991). The goal of
the program was for the students to become experts in assessment, treatment and program design
for children with ASD (Jenson, Clark, Sloane, Kehle, & Clifford, 1991). Their focus was on
"discrete, trial-based, core behavior management programs to increase attending behavior and to
reduce noncompliance, tantrums, self-stimulation, and self-injury (Jenson, Clark, Sloane, Kehle,
& Clifford, 1991, p. 466). School psychologists trained peer tutors, and teachers in how to
generalize and integrate students with ASD in the classroom. The outcome of the training for
these school psychology students resulted in a training manual and showed that the more training
school psychologists are exposed to the more likely they are to participate in the programs
designed for training on a specific population of students; in this case programs on ASD. While
this information is helpful to know that some students are gaining the necessary training it continues to be unclear if other programs offer similar opportunities.

School Psychologists Perceptions of Competence

Training of school psychologists in doctoral and non-doctoral programs is generally designed to cover various areas within the field in a short amount of time (3-5 years). School psychologists are often expected to be the experts in regards to managing and extinguishing problem behaviors exhibited by children with ASD, yet the NASP standards only require training for the general population of students. Therefore, the extent to which non-doctoral and doctoral training programs provide training specific to students with ASD is unknown. It is very difficult to know how much training students are getting beyond the minimal requirements set up by NASP. In addition, no research has addressed school psychologists’ self-reports of their confidence to assess for EBDs, create behavioral intervention plans, address co-occurring EBDs through counseling, and consult with those who work directly with children with ASD in school settings. There are no other studies that evaluate predictors of confidence for these activities either. Knowledge of school psychologists’ perceptions of their competence can thus lead to changes in training requirements. This way the ASD population may be better serviced in our schools.

Present Study

This study works to address this lack of knowledge. A survey assessed school psychologists’ training experiences in the areas of ASD core and associated features and in their training in assessment and intervention for co-occurring EBDs in students with ASD. The study examined differences that may exist on variables such as assessing for EBDs, addressing EBDs through counseling, developing effective behavior intervention plans, and providing consultation...
to others working with students with EBDs and ASD. It also examined predictors of confidence in the areas of assessment, counseling, behavioral interventions, and consultation. The predictors included were degree type, number of years working as a school psychologist, number of students worked with that have an ASD and EBD in the current school year, and perceptions of their own training to assess, and develop interventions to address problem behaviors with these students. These predictors were selected because it is reasonable to think that they will relate to confidence. There is no literature in this specific area so there may be better predictors that have not yet been identified.

The importance of appropriately trained school psychologists is vital to the success of children that require multiple and complex supports within the schools. School psychologists are usually the ones tasked with the responsibility of making sure these students receive appropriate supports so that they are educated in the least restrictive environment as mandated by IDEIA 2004.

Research Questions

1. Are there significant differences between non-doctoral and doctoral level school psychologists on the following variables: demographics, student case load, services offered, confidence in assessment, counseling, developing behavioral interventions, and consulting with others on students with ASD and EBDs, perceptions of how well trained school psychologists felt, amount of additional training desired, and perceptions of importance of additional training.

2. To what extent was confidence in assessing for EBDs, counseling, developing behavioral interventions, and consulting on students with ASD and EBDs predicted
by the following variables: degree type, number of years working, number of students with ASD and EBDs worked with this year, and perceptions of training.

3. For each analysis, which predictors are statistically significant and how much variance in the criterion does each uniquely account for?
CHAPTER THREE
Methodology

Participants

The investigation randomly sampled 509 school psychologists from 1,000 names randomly selected by the INFOCUS group from the School Psychologist and Public School categories within the NASP membership directory. Permission from NASP was obtained by writing to the organization detailing the purpose for the study and the research questions asked.

The return rate was 30.5% of the 509, meaning that 155 School Psychologists returned a survey. Several potential participants were removed from the study for two reasons. Ten participants had missing data on the survey crucial for analysis, and one participant was a graduate student intern. Therefore, the final N-size was 144, which was sufficient for data analysis. Participants consent was implied when they filled out and returned the survey.

Instrumentation

A two-page front and back survey, attached in Appendix A of this paper, was developed by the researcher to gather information about school psychologists’ demographics, case load information, perceptions of confidence in working with students with ASD and EBDs, general practice information, and types and perceptions of training. The demographics, caseload information, perceptions of confidence, and types and perceptions of training were used to answer the research questions. Lastly, general practice information was used to gather information about the role of the school psychologist. It was estimated that the survey took 15 minutes to complete.
Data-Collection Procedures

The INFOCUS company associated with the NASP Research Committee provided an excel spreadsheet of 1,000 mailing addresses randomly selected from the NASP directory. Of those 1,000 members, 509 were randomly selected for participation in this study using a random numbers table. The mailing list, surveys, and return envelopes were numbered to track mailings and returns. A cover letter included as Appendix B was sent along with the survey to explain the purpose of the study, describe measures taken to protect confidentiality, and give the estimated time for completion. As an incentive for responding, participants were notified that they could be entered into a random drawing for either a twenty-five dollar Target or Starbucks gift card. This was also voluntary. Participants were asked to fill out a separate sheet of paper giving their email or address for a summary of the results once it is completed as well as to enter them into the drawing. This kept the contact information separate from the participants’ completed survey. Participants were asked to return the survey within two weeks. Completion of the survey was indication of the participant’s consent. The coded surveys were kept apart from the master mailing list once they were returned to the researchers. The data from each survey were then entered into an electronic data file for statistical analysis in a group format only. Only the researcher and advisor only had access to these files, which were stored on a private thumb drive kept by the researcher. The surveys were stored in the researcher’s home, in a locked room. This study was approved by Rochester Institute of Technology’s Institutional Review Board prior to gathering data.

Data Analysis

Descriptive Statistics. After all the surveys were received, the responses were entered into SPSS version 13.0 for analysis (2006). Descriptive statistics were obtained for all survey
items. The mean and standard deviation were obtained for interval and ratio data such as caseload information, confidence in working with students with ASD and EBD, training, and a desire for additional training. Percentages for response categories were calculated for ordinal and nominal data such as demographic information and general practice information. Descriptive statistics were provided for participants with non-doctoral and doctoral degrees. For likert scale items, percentages of participants in the entire sample who reported "Agree" or "Strongly Agree" on statements pertaining to confidence in performing various activities were calculated. In addition, percentages of all the participants who responded "well" or "very well" on statements pertaining to perceptions of training received, "More" or "Much More" on statements pertaining to additional training wanted in various activities, and "Quite Important" or "Very Important" on a statement that asked the importance to receive more training were calculated.

**Significance tests.** Several t-tests were conducted to determine if there were any significant differences between the non-doctoral and doctoral groups of the study. Qualitative and quantitative analyses were used to evaluate the three assumptions: independence, normality and homogeneity of variance. Independence was assumed since the participants filled them out in their home state. A statistical test for normality included inspection of the skewness and kurtosis indices. Qualitative analyses included inspection of the histogram, stem-and-leaf display, normal probability and detrended normal probability plots, and box plots. Homogeneity of variance was assessed by examining the variances of each group: the assumption was considered met if the larger to smaller variance ratio was within 4:1. In addition to identifying significant mean differences, Cohen's $d$ was also calculated to determine effect size. A small effect size is equal to 0.25, medium is equal to 0.50 and a large effect is equal or larger than 1.0.
Regression analysis. The regression analyses were conducted to determine what variables, if any, predict confidence in school psychologists in the areas of assessment, counseling, behavior intervention plans and consultation. The four assumptions, independence, normality, homoscedasticity and linearity were assessed. Methods for assessing independence and normality were previously described. Homoscedasticity was assessed by inspecting plots of the standardized residual and the standardized predicted residual. Linearity was assessed using the Loess fit line in scatterplots of the variables of interest. To assess for outliers the standardized residuals, Cook's statistic, Leverage, and standardized difference in Beta were each examined for cases that might have been influential. This was done for each of the four regressions calculated. Only one outlier was identified in the fourth regression analysis, but it did not significantly change the results so it was left in the analysis. Lastly, $R^2$, adjusted $R^2$, significance of $R^2$, and the squared semi-partial correlation of all predictors were calculated.
CHAPTER FOUR

Results

Participant Characteristics

Descriptive statistics were obtained for the sample (N=145) and can be found in Table 1. The total sample included 76.4% females and had a total mean age of 42.2 years old. Three fourths of the participants held non-doctoral degrees (75.5%), and the overall mean number of years worked in the field was 13.03 (SD=10.07). When compared to NASP membership data (see Curtis, Lopez, Castillo, Batsche, Minch, & Smith, 2008) our sample had approximately the same gender ratio, a higher non-doctoral to doctoral ratio and was overall a younger sample.

Independent t-tests were conducted to compare the non-doctoral and doctoral participants in the sample. For the non-doctoral subgroup, participant age and years working in the field were positively skewed, while the distribution for age in the doctoral group was slightly negatively skewed. The doctoral distribution for the number of years working in the field was multi-modal. Despite these deviations from normality, the sample sizes were sufficiently large making the t-test robust to violations of this assumption. Results of the t-tests indicated that the mean age and years working as a school psychologist were significantly different between the two groups at α=0.05, two-tailed. Doctoral participants tended to be older than non-doctoral school psychologists (t = 3.827, df = 141, p = .000, CI95= [12.688 - 0.044]) and this difference was moderately large (Cohen’s d = 0.74). Doctoral level school psychologists also reported more years working in the field compared to non-doctoral school psychologists, (t = -3.705, df = 143, p = .000, CI95= [-10.541 - 3.206]) and this difference was also moderately large (Cohen’s d = 0.71).

Respondents were asked to report on who typically assesses and develops interventions for students with ASD and EBDs in their school district. Data indicated that the school
psychologist was frequently involved in both of these areas: 40.7% reported that school psychologists are the only ones to assess these students, while 15% of school psychologists alone are responsible for developing interventions for students with an ASD and EBD. For assessment, the remaining 59.3% of respondents reported that these services were provided by a combination of professionals that included external consultants, other school-based professionals, and an "other" category. Responses to the other category included outside agencies, physicians, psychiatrists, local medical university medical clinics, and social workers. Those who are solely responsible for developing interventions for students with ASD and EBD include other school based professionals (8.3%), external consultants (1.4%) and the other category (2.8%) which respondents indicated were mainly behavior specialists, autism specialists, and multi-disciplinary teams. In addition, 46.9% of participants indicated that both the school psychologist and other school-based professionals were responsible for developing interventions. The remaining 25.5% of participants reported other combinations of professionals, all of which include the school psychologist.

Participants were also surveyed on the type of training they received on the core and associated features of ASD and in assessment and intervention practices for co-occurring EBDs in students with ASD. Refer to Table 2 for the percentages of the highest level of training attended by participants in these two areas. Overall, the majority of training for school psychologists in both the core and associated features of ASD, as well as, in assessment and intervention practices for students with ASD and EBDs were self-reported to be from portions of a course or workshop. In addition to the highest level of training indicated, 54% of participants also checked the "other" category on the training of the core and associated features of ASD, while 17.9% checked the "other" category for the training in the area of behavioral interventions.
for students with ASD and EBDs. The majority of their responses included experiential training (i.e., working in group homes, hospitals, classrooms, or private practices servicing students with ASD), internship or supervised field experiences, district or county sponsored presentations, and books or journal articles. Most of these responses were separated out into the other training categories. Three participants indicated that they had specialized training through a master’s degree program, involvement in undergraduate research program, or a certification in Autism Disorders. The vast majority of school psychologists reported that they had very little training in ASD.

Training Perceptions and Further Need for Training

Descriptive data were obtained for non-doctoral and doctoral participants with respect to how well trained they feel they are in assessment and developing interventions. Almost a quarter of non-doctoral participants (22%) and half of the doctoral participants (50%) reported that they were trained “well” or “very well” to conduct assessments. A larger number of doctoral participants (55.6%) compared to non-doctoral participants (36.7%) felt that they are trained “well” or “very well” to develop interventions for students with ASD and EBDs. When asked how much additional training in assessment participants wished they had for students with ASD and EBDs 68.9% of non-doctoral participants and 52.8% of doctoral participants indicated “more” or “much more.” A larger number of non-doctoral participants (73.4%) compared to 52.7% of doctoral participants indicated they wished they had “more” or “much more” training in interventions for students with ASD and EBDs. Lastly, 60.5% of non-doctoral school psychologists and 41.5% of doctoral school psychologists indicated that it is “quite important” or “very important” to them to receive more training to provide appropriate school-based supports for students with ASD and EBDs.
Caseload of School Psychologists

Participants in this study work at various grade levels. The greatest number of school psychologists worked at the kindergarten through 12th grade level (19.3%), followed by kindergarten through 5th grade (16.6%), preschool through 5th grade (12.4%), kindergarten through eighth (11%), preschool through 12th grade (9.7%), 9th through 12th grade (9.0%) and 6th through 8th (7.6%). The remaining 14.4 percent of participants reported that they worked at either the preschool through 8th grade level (3.4%), kindergarten through 5th and 9th through 12th level (3.4%), 6th through 12th grade (3.4%), preschool through 5th and 9-12th grade (1.4%), preschool and 9-12th grade (1.4%), preschool, 6-8th and 9-12th grade (0.7%), and preschool alone (0.7%).

T-tests were conducted to evaluate differences between caseloads for doctoral and non-doctoral school psychologists. Table 3 presents the descriptive data. One variable, the number of individual case consultations provided for students with an ASD and EBD this school year, violated the homogeneity of variance assumption. In this case, a separate variance t-test was conducted and the larger variance estimate was used in the calculation of effect size to provide a more conservative estimate. Responses to caseload questions 2 through 7 were positively skewed. Again, the t-test is robust to violations of this assumption with sufficiently large sample size. As seen in Table 3, the only statistically significant difference between non-doctoral and doctoral level school psychologists was in the number of students they assessed with ASD and EBDs. Cohen’s d indicated a medium effect size.

Confidence in Practice

Independent t-tests compared the differences between non-doctoral and doctoral participants regarding confidence to assess for EBDs, conduct counseling, develop behavioral
interventions, and consult on cases regarding students with an ASD and behavioral problems. Both the non-doctoral and doctoral groups for practice questions 1, 3, and 4 on the survey were slightly negatively skewed. These questions surveyed participants' confidence to assess for EBDs, develop behavioral intervention plans and provide consultation to those working with students that have an ASD and EBD. The doctoral group for practice question 2 on the survey was again slightly skewed but the non-doctoral group's distribution approached a normal curve based on qualitative and quantitative analyses. This survey question addressed confidence in counseling students with ASD and EBDs. The sample size continued to be large enough to make the $t$-test robust to violations of normality.

Results of the $t$-tests as shown in Table 4 indicated a statistically significant result for each survey item when comparing levels of confidence in delivering various services to student with ASD and EBDs between the non-doctoral and doctoral groups. Doctoral level school psychologists reported significantly higher levels of confidence in their ability to assess for EBDs in students with ASD, to effectively address co-occurring EBDs with students with ASD through counseling, to develop effective behavioral intervention plans to address problem behaviors of students with ASD and EBDs, and to provide consultation to those working directly with these students. Effect sizes were generally moderate, ranging from .39 to .63.

Responses to the Likert-scale items that assessed confidence in providing various services were also examined by analyzing the combined response frequencies of "agree" and "strongly agree" by non-doctoral and doctoral school psychologists. A total of 35.8% of non-doctoral school psychologists and 61.1% of doctoral school psychologists responded in this way with respect to confidence to assess students with an ASD for an EBD. Non-doctoral participants with confidence to address co-occurring EBDs of student with ASD through
counseling made up 25.7% of participants, while 50% of participants in the doctoral group indicated confidence in this area. A smaller proportion of non-doctoral school psychologists (42.2%) compared to doctoral level school psychologist (66.6%) indicated that they agree with the statement referring to confidence in their abilities to develop effective behavioral intervention plans to address problem behaviors of students with ASD who have a co-occurring EBD. Lastly, 47.7% of non-doctoral participants and 77.8% of doctoral participants indicated they have confidence to provide consultation to those working directly with students that have ASD and EBDs.

Regression Analysis for Predictors of School Psychologists' Confidence

Multiple regression analyses were conducted to determine what factors if any would predict levels of confidence in school psychologists' ability to provide services to students that have ASD and an EBD. The assumptions of independence, normality, linearity and homoscedasticity were evaluated. Independence was assumed for each regression because all respondents completed surveys on their own. Continuous variables in all four-regression analyses completed were negatively skewed to varying degrees; however, multiple regressions are fairly robust to violations of normality, especially given the sample size here. Linearity was also tenable with the lone exception being the relationship between “degree type” and the criterion, but this was expected given that “degree type” was a dichotomous variable. The homoscedasticity assumption was met for all the regressions. Only one outlier was identified in the regression analysis that analyzed predictors in confidence to provide consultations, but it was kept in the regression because removing it did not significantly change the regression results. No other significantly influential cases were identified.
The zero order correlations for each regression are listed in Table 5. The correlations among the predictor variables were low to moderate. Thus, none of them provided redundant information about the relevant criterion variables and all were appropriately included in the analyses.

The results of the regression analyses are presented in Tables 6 through 9. In each analysis the statistically significant $R^2$ indicated that some combination of the predictors accounted for a significant proportion of variance in the criterion. $T$-tests were then conducted to determine if any individual predictors were statistically significant. The squared semi-partial correlation was also calculated to determine the amount of variance uniquely accounted for by each predictor. Self-reports of adequacy in training in assessment for EBDs in students with ASD was a statistically significant predictor of confidence for school psychologists to assess for EBDs in these students. It uniquely accounted for 24.5% of the variance. Training to assess for EBDs in students with ASD was also a statistically significant predictor of confidence in effectively counseling students with EBDs. It uniquely accounted for 3.8% of the variance. Perceptions of training in developing interventions to address problem behaviors of students with ASD and EBDs was a statistically significant predictor of confidence to develop effective behavioral intervention plans for students with ASD and EBDs. It uniquely accounted for 41.0% of the variance. Lastly, perceptions of training to develop interventions to address problem behaviors was also a statistically significant predictor of confidence to provide consultation to those working directly with students that have ASD and EBDs. It uniquely accounted for 16.0% of the variance.
CHAPTER FIVE
Discussion

General Findings

The purpose of this study was to examine self-reports of school psychologists regarding their confidence about their ability to work with students diagnosed with an Autism Spectrum Disorder (ASD) and co-occurring Emotional Behavioral Disorders (EBDs). Two major sets of analyses were performed. First, significance tests were conducted to determine if any differences existed between doctoral and non-doctoral school psychologists across several demographic, caseload, training, and confidence variables. Additional data described self-reported training experiences in ASD and perceptions of training. Second, regression analyses were performed to identify predictors of confidence in working with students with ASD and EBDs. Several significant findings emerged from this study. Results indicated several differences between the doctoral and non-doctoral groups, which will be detailed below. In addition, descriptive data indicated that a fairly small percentage of school psychologists believed that they were well trained to work with students with ASD, a relatively large percentage desired more training, and many believed that this training was important. Perceptions of training emerged as the only significant predictor of confidence to deliver various services to students with ASD.

Differences between Non-Doctoral and Doctoral Trained School Psychologists

Several differences between doctoral and non-doctoral school psychologists were found. Doctoral level school psychologists were older, reported significantly more years working, and assessed more students with an ASD and EBD. Both non-doctoral and doctoral groups worked with relatively few students with ASD during the school year, even though there was a
statistically significant difference and decent effect size. Doctoral level school psychologists also reported higher levels of confidence in their abilities to assess, counsel, develop interventions, and provide consultation to others working directly with students with an ASD and EBDs.

Self-Reports Regarding Training

Data were collected on the types of training attended by participants. The vast majority of the entire sample did not report high levels of training specifically in the core and associated features of ASD and in assessment and intervention practices for students with ASD and EBDs. It appears that school psychologists receive the majority of their training on ASD and EBD through portions of a course and/or through workshops, and therefore are not adequately trained to work with this high needs population.

Self-reports on perceived need and interests in more training indicated that more than half of both the non-doctoral and doctoral groups indicated that they wished they had more training in both assessment and interventions for students with ASD and EBDs. More non-doctoral participants also indicated that they believe it is important to them to receive additional training in these areas, compared to doctoral participants. It is unclear why these differences exist. It could be because doctoral level school psychologist tend to have worked longer in the field or that their training programs provided more training than non-doctoral programs. More research in this area is needed to determine why this difference exists.

Self-Reports of Confidence

Non-doctoral school psychologists reported lower levels of confidence in their ability to assess, counsel, develop behavioral interventions and consult on students with ASD and EBDs compared to the doctoral level. The highest level of confidence across both groups was to
provide consultation to those working directly with students, while the lowest level of confidence was in counseling students to address behavioral problems. Training programs for school psychologists may focus more on providing consultation services rather than counseling, which may explain why this difference exists. School psychologists may believe that the counseling component of their program did not adequately address how to work with students that have neurocognitive difficulties found in students with ASD, leading to lower levels of confidence. More research in this area is needed to figure out why these differences exist.

Predictors of Confidence in Assessing for EBDs in students with ASD

Self-reports of training adequacy emerged as the only significant predictor of confidence for all service activities. Reports of training adequacy were positively related to confidence. Interestingly no other statically significant predictors accounted for confidence in any of these areas. The amount that training in assessment uniquely accounted for confidence in assessing for EBDs was 24.5% and for the same predictor only 3.8% of variance accounts for confidence in counseling students with ASD. Therefore, stronger predictors for confidence in counseling may exist. Self-reports of training in the development of interventions uniquely accounted for over 41.0% of the variance in confidence to develop effective behavioral intervention plans for students with ASD and EBDs. This same predictor uniquely accounted for a smaller proportion of variance (16%) in confidence to provide consultation to those working directly with students with ASD and EBDs. It appears that other predictors may better predict confidence in providing consultation, which have not yet been identified. Further research conducted could provide additional predictors in confidence for all four areas mentioned.

While more research needs to be done to find other predictors of confidence in working with students with ASD and EBDs this study provides a starting point in the research. These
results indicated that school psychologists, regardless of degree type and years in the field, need specific training in ASD and EBDs. Such training may improve their level of confidence in their abilities to work with these students. Greater confidence in their own abilities may also make it more likely that the development and delivery of effective and appropriate supports and services for students with ASD and EBDs will occur in the schools. This may ultimately lead to increased opportunities for the child to learn in the classroom thus increasing his or her quality of life. However, the relationship between confidence, actual competence of School Psychologists, and student outcome is an area for future study.

Limitations

Several limitations for this study exist. First, only NASP members volunteered to complete and return the survey were included in the final sample despite random selection from the NASP mailing list. The option to fill out the survey may have create a response bias meaning there could be some characteristic of those that chose to fill out the survey not found in all School Psychologists. Thus, the results found may not generalize to all school psychologists.

Second, the data collected were based on self-reports, thus what the School Psychologist can recall. Recollections of the number of students worked with during the current school year, number of students assessed, percentage of students with EBD, number of BIP's developed and revised, number of students counseled, and number of case consultations may not be remembered as they actually occurred presenting another limitation of the study. School psychologists may report skewed numbers of students worked with that year. Also, no actual measurements of the amount or quality of training for school psychologists nor actual job performance or effectiveness were gathered. In addition, this study did not assess the factors related to the school psychologists' reports of how well trained they were. Therefore, each
participant may have been influenced by different factors (i.e., lack of opportunity, poor supervision during field experiences, poor classroom instruction, out of date resources etc.) that affected how they saw and reported their training in working with students with ASD. These variables may also have influenced perceptions of confidence in working with these students, but this was not assessed in this study. Another limitation for this study is that it is unclear if all the relevant predictors were identified for the regression analyses. There may be other predictors that would better account for levels of confidence.

Implications for Training, Practice, and Future Research

Based on the results of this study, it appears that doctoral and non-doctoral school psychology training programs may not necessarily provide students with adequate training in ASD through coursework, and field experiences. Many training programs may not afford students the opportunity to specialize in areas such as ASD or EBDs. Therefore, it is probable that school psychologists are not prepared to work with students with ASD and co-occurring EBDs. More research should be conducted to investigate the types of courses NASP programs offer graduate students as well as to compare the differences in courses between doctoral and non-doctoral level programs. Also a comparison between the number of training hours received during graduate programs versus the number of training hours received following graduation from programs should be examined to see if training translates into actual competence in the field.

School psychologists in this study reported low levels of training in their graduate programs, yet high levels of involvement in the assessment, and development of interventions for students with ASD and EBDs. There is a need for both new and veteran school psychologists to receive specialized consultation and supervision from individuals with expertise in ASD and
EBDs. Access to updated literature on research based practices and interventions would also be helpful for school psychologists to develop the most appropriate interventions for these students. Lastly, school psychologists need to closely monitor progress and the integrity of interventions developed for these students in the classroom.

Because this is the first study to investigate school psychologists' perceptions of their training and confidence to work with students that have an ASD and EBD there are many areas not addressed. Future research should investigate participants' actual job performance so that a comparison can be made to their levels of confidence and training. This study collected data based on participants' responses, so the actual quality of training indicated was not investigated and factors that might have influenced their reports of their training also need to be investigated. School psychologists' confidence may be affected by the actual quality of training they received and their perceptions of its effectiveness. Additional investigation into other relevant predictors of confidence in working with this population as well as comparing school psychologist to other school professionals that work with students with ASD would be informative. Lastly, the amount and quality of training received by school psychologists during their graduate education needs to be further investigated so that these training programs may better prepare school psychologists before entering the field as a professional.

**Conclusion**

This study was completed to determine if there are differences in levels of confidence and training between non-doctoral and doctoral level school psychologists. It also examined possible predictors of confidence in working with students that have an ASD and EBD in public schools. Differences did exist between the two levels of school psychologists in the areas of age, number of years working in the field, confidence in working with students with ASD and EBDs and self-
reports of training adequacy. The only predictor of confidence in assessing, counseling, creating behavioral interventions and consulting with others on students with ASD and EBD was self-reports of training adequacy. In addition, the majority of school psychologists regardless of graduate training level wanted more training to work more effectively with this population of students. Additional training and knowledge appears to be essential for promoting better outcomes for students with ASD and EBDs.
References


and behavioral support interventions that work (pp. 393-411). New York: Oxford University Press.


### Appendix A

**Survey**

**Demographics**

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<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td></td>
</tr>
<tr>
<td>Gender:</td>
<td>Male</td>
</tr>
<tr>
<td>What Type of Degree do you have?</td>
<td>Non Doctoral</td>
</tr>
<tr>
<td>Did you attend a NASP approved program?</td>
<td>Yes</td>
</tr>
<tr>
<td>Race:</td>
<td>(Circle)</td>
</tr>
<tr>
<td>Ethnicity:</td>
<td>(Circle)</td>
</tr>
<tr>
<td>How many years have you worked as a School Psychologist?</td>
<td></td>
</tr>
<tr>
<td>Current Employment:</td>
<td>Full Time</td>
</tr>
</tbody>
</table>

**Case load Information** Base your responses on this current school year.

1. **What grade levels do you currently work with?** (circle all that apply)
   - Pre-school
   - K-5th
   - 6th - 8th
   - 9th - 12th

2. **How many students with an Autism Spectrum Disorder (ASD) have you worked with this year?**
   (ASD includes Autistic Disorder, Asperger’s Disorder, and Pervasive Developmental Disorder-Not Otherwise Specified)
   *Consider all work related to assessment, counseling, development of behavior intervention plans, and case consultation.

3. **How many students with ASD also have an Emotional/Behavioral Disorder (EBD)?**
   *EBD includes but is not limited to internalizing and/or externalizing behavioral problems such as anxiety, depression, tic disorder, aggression, self-injurious behavior, and attention deficit/hyperactivity disorder. The presence of an EBD is substantiated through a formal school- or community-based evaluation, not merely by impression or suspicion.

4. **How many students with ASD & co-occurring EBDs have you assessed this year?**
   *Types of assessment include achievement, cognitive, social/emotional and FBA’s.*
5. How many new and revised behavior intervention plans for students with ASD and co-occurring EBDs have you developed or helped develop this year? (e.g.: behavior intervention plans to address behaviors interfering with learning and/or socialization.)

6. How many individuals with ASD and an EBD have you worked with in individual or group counseling so far this year? (e.g.: for developing coping skills for problems like anxiety, social skills, problem solving, or other adaptive skills)

7. How many different individual case consultations have you provided for students with ASD and EBDs this school year?

8. So far this school year, I have worked with ________ students with ASD compared to previous years.

   1 2 3 4 5 6 7
   Far Fewer Somewhat The Same Somewhat More Far
   Fewer Fewer Number More More

Practice. Rate your responses on the scale below each question that best describes your work with students with ASD and co-occurring Emotional and Behavioral Disorders (EBD).

1. I am confident in my ability to assess for EBDs in students with ASD.

   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neutral Somewhat Agree Strongly
   Disagree Disagree Agree

2. I am confident in my ability to effectively address the co-occurring EBDs of students with ASD through counseling.

   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neutral Somewhat Agree Strongly
   Disagree Disagree Agree

3. I am confident in my ability to develop effective behavioral intervention plans to address the problem behaviors of students with ASD who have a co-occurring EBDs.

   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neutral Somewhat Agree Strongly
   Disagree Disagree Agree
4. I am confident in my ability to provide consultation to those working directly with students that have ASD and EBDs.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Somewhat Disagree</td>
<td>Neutral</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>

**General Practice Information**

1. Who typically assesses students with ASD & EBDs in your district?  
*(Check all that apply.)*

- School Psychologist
- Other School-based Professional  
  (eg. Mental Health Provider, Teacher, Counselor)
- External Consultant
- Other  
  (Specify): _____________________________

2. Who is typically responsible for developing interventions for students with ASD & EBDs in your district?  
*(Check all that apply.)*

- School Psychologist
- Other School-based Professional  
  (eg. Mental Health Provider, Teacher, Counselor)
- External Consultant
- Other  
  (Specify): _____________________________

**Training**

1. What kind of training have you had to increase knowledge of the core and associated features of ASD?  
*(Check all that apply.)*

- Entire Course
- Portions of a Course(s)
- Entire Course and supervised field experience
- Workshop(s)
- None
- Other  
  (Specify): _____________________________

2. What kind of training have you had in assessment and intervention practices for co-occurring EBD in students with ASD?  
*(Check all that apply.)*

- Entire Course
- Portions of a Course(s)
- Entire Course and supervised field experience
- Workshop(s)
- None
- Other  
  (Specify): _____________________________

3. How well trained are you in assessing for EBDs in students with ASD?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somewhat Disagree</td>
<td>Neutral</td>
<td>Somewhat Disagree</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>
4. How well trained are you in developing interventions addressing the problem behaviors of students with ASD and EBDs?

<table>
<thead>
<tr>
<th>Very Poorly</th>
<th>Poorly</th>
<th>Average</th>
<th>Well</th>
<th>Very Well</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

5. How much additional training in assessment for students with ASD and EBDs do you wish you had?

<table>
<thead>
<tr>
<th>None</th>
<th>A Little</th>
<th>Some</th>
<th>More</th>
<th>Much More</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

6. How much additional training in interventions for students with ASD and EBDs do you wish you had?

<table>
<thead>
<tr>
<th>None</th>
<th>A Little</th>
<th>Some</th>
<th>More</th>
<th>Much More</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

7. How important is it for you to receive more training so that you can provide appropriate school-based supports for students with ASD and EBDs?

<table>
<thead>
<tr>
<th>Not at all important</th>
<th>Slightly Important</th>
<th>Fairly Important</th>
<th>Quite Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Thank you for your Participation!
Appendix B

Cover Letter

Dear School Psychologist,

You are invited to participate in a research study investigating school psychologists' training and confidence in working with children with Autism Spectrum Disorders (ASD) and co-occurring emotional and behavioral disorders (EBDs). The results from this study will inform practitioners and researchers about the amount of ASD-specific training received by school psychologists currently in the field and levels of confidence in working with this population. Benefits to this research include increasing knowledge in the field of school psychology pertaining to graduate level training specific to children with ASD and emotional/behavioral disorders. This knowledge could help inform future decision-making regarding the training of school psychologists.

Your name was randomly selected from a mailing list provided by NASP, whose research committee approved my request to access contact information for 1,000 randomly selected members. The Rochester Institute of Technology's Institutional Review Board (IRB) has approved this study. You are asked to complete the enclosed survey. We estimate this will take you 5-10 minutes. Please complete and return the survey and drawing card in the enclosed envelope within two weeks.

This study involves minimal risks; no more than one would expect during the typical school psychologist's work day. Participation may also result in increased personal awareness about your own training and level of confidence in working with this population. Your participation will provide important information about school psychologists working with children with ASD.

Every effort will be made to keep your personal information confidential. Your coded survey will be kept apart from the mailing list once it is returned to the researchers. The mailing list will have the codes for each survey and participant in the study. This is done to keep track of who did/did not return the survey. Only the investigator and advisor will have access to the survey and the electronic data files created for statistical analysis. The results will present the data in group format only. Completion and return of the survey signifies your consent to participate in this study.

A separate card is enclosed. Please fill out your contact information to be entered into a drawing for a gift card to Starbucks or Target. This card may be returned with your completed survey. It will be immediately separated from your survey responses and stored until the drawing. Also, please indicate if you would like me to inform you of the study results once it is completed in May 2010 by checking "Yes" or "No" on the card. If you check "yes," please provide your email or mailing address.

Participation in this study is voluntary. You can withdraw from participating at any time without penalty, and your completed survey will be destroyed and not used in the study. You also have the right not to participate at all or to leave questions blank that you are uncomfortable answering. Please contact Nicole Gilmour at nmg2685@rit.edu or my supervisor Dr. Vincent Pandolfi at vxpgla@rit.edu if you have questions or concerns about this study. You may also call the school psychology office at 585-475-6701. If you have questions about your rights as a research participant, you may contact the Heather Foti in the Rochester Institute of Technology, Office of Human Subjects Research at 585-475-7673.
Thank you in advance for your participation in this study. It is my hope that together we may continue to improve the field of School Psychology through studies like this one.

Sincerely,

Nicole Gilmour
Masters Student
Rochester Institute of Technology
School Psychology Program

Vincent Pandolfi, Ph. D.
Thesis Advisor/Assistant Professor
Rochester Institute of Technology
School Psychology Program
Table 1

Sample Demographics

<table>
<thead>
<tr>
<th></th>
<th>Total %</th>
<th>Doctoral (n=36)</th>
<th>Non-doctoral (n=109)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender: Female</td>
<td>76.4</td>
<td>61.1</td>
<td>81.5</td>
</tr>
<tr>
<td>NASP Approved Program</td>
<td>87.4</td>
<td>73.5</td>
<td>91.7</td>
</tr>
<tr>
<td>Race:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>1.4</td>
<td>2.8</td>
<td>0.9</td>
</tr>
<tr>
<td>Black/African</td>
<td>2.8</td>
<td>5.6</td>
<td>1.8</td>
</tr>
<tr>
<td>American</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>95.9</td>
<td>91.7</td>
<td>97.2</td>
</tr>
<tr>
<td>Ethnicity: Hispanic/Latino</td>
<td>1.9</td>
<td>0.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Employment: Full Time</td>
<td>91.0</td>
<td>94.3</td>
<td>89.9</td>
</tr>
</tbody>
</table>
Table 2

*School Psychologists Self-Reports of Types of Training Received*

<table>
<thead>
<tr>
<th>Training in the Core and Associated Features of ASD</th>
<th>Training in assessment and intervention practices for students with ASD and EBDs</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Training</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Portions of a course/workshop</td>
<td></td>
<td>83.5</td>
</tr>
<tr>
<td>Entire course</td>
<td></td>
<td>9.7</td>
</tr>
<tr>
<td>Entire course with field experience</td>
<td></td>
<td>5.6</td>
</tr>
</tbody>
</table>

**Note.** The total percentages do not add up to 100%. The remaining percentage accounts for those who only checked the "other" category.
Table 3

Caseload of Students With ASD and EBD for the Current School Year

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Total</th>
<th>Doctoral</th>
<th>Non-doctoral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students with ASD worked with this year</td>
<td>8.73</td>
<td>8.77</td>
<td>9.38</td>
</tr>
<tr>
<td>Number of students with ASD that also have an EBD</td>
<td>3.46</td>
<td>4.67</td>
<td>4.39</td>
</tr>
<tr>
<td>Number of students with ASD and EBDs assessed this year</td>
<td>1.73</td>
<td>2.48</td>
<td>2.58</td>
</tr>
<tr>
<td>Number of new and revised Behavior Intervention plans for students with ASD and EBD developed or helped develop this year</td>
<td>1.79</td>
<td>2.12</td>
<td>2.00</td>
</tr>
<tr>
<td>Number of students with ASD and EBD worked with in individual or group counseling this year</td>
<td>1.37</td>
<td>2.44</td>
<td>1.19</td>
</tr>
<tr>
<td>Number of different individual case consultations provided for students with ASD and EBDs this year</td>
<td>4.41</td>
<td>6.37</td>
<td>6.56</td>
</tr>
</tbody>
</table>

Note. * p < .05.

*aA separate variance t-test was completed because the homogeneity of variance assumption was violated.
Table 4

Confidence Ratings

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Total</th>
<th>Doctoral</th>
<th>Non-doctoral</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am confident in my ability to assess for EBDs in students with ASD</td>
<td>4.99 1.37</td>
<td>5.42 1.44</td>
<td>4.85 1.33</td>
<td>0.42*</td>
</tr>
<tr>
<td>I am confident in my ability to effectively address the co-occurring EBDs of students with ASD through counseling</td>
<td>4.49 1.54</td>
<td>5.12 1.23</td>
<td>4.27 1.57</td>
<td>0.60**</td>
</tr>
<tr>
<td>I am confident in my ability to develop effective behavioral intervention plans to address the problem behaviors of students with ASD who have a co-occurring EBDs</td>
<td>5.19 1.28</td>
<td>5.56 1.00</td>
<td>5.06 1.34</td>
<td>0.39*</td>
</tr>
<tr>
<td>I am confident in my ability to provide consultation to those working directly with students that have ASD and EBDs</td>
<td>5.43 1.12</td>
<td>5.94 0.89</td>
<td>5.27 1.13</td>
<td>0.63***</td>
</tr>
</tbody>
</table>

Note. * p < .05. ** p < .01. *** p < .001.
Table 5

Zero-Order Correlations Among Variables Included in Regression Analyses

<table>
<thead>
<tr>
<th></th>
<th>Number of years working as a school psychologist</th>
<th>Degree type</th>
<th>Number of students with ASD and EBD worked with this year</th>
<th>How well trained are you in assessing for EBDs in students with ASD</th>
<th>How well trained are you in developing interventions addressing problem behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence in assessing for EBDs in students with ASD</td>
<td>0.169*</td>
<td>0.178*</td>
<td>0.186*</td>
<td>0.564***</td>
<td>--</td>
</tr>
<tr>
<td>Confidence in addressing the co-occurring EBDs of students with ASD through counseling</td>
<td>0.212*</td>
<td>0.254**</td>
<td>0.159</td>
<td>0.436***</td>
<td>0.377***</td>
</tr>
<tr>
<td>Confidence in developing effective behavioral intervention plans to address the problem behaviors of students with ASD who have a co-occurring EBDs</td>
<td>0.127</td>
<td>0.166*</td>
<td>0.197*</td>
<td>--</td>
<td>0.688***</td>
</tr>
<tr>
<td>Confidence in providing consultation to those working directly with students that have ASD and EBDs</td>
<td>0.224**</td>
<td>0.263**</td>
<td>0.122</td>
<td>0.500***</td>
<td>0.632***</td>
</tr>
</tbody>
</table>

Note. * p < .05. ** p < .01. *** p < .001.
### Table 6

**Predictors of Confidence in Assessing for EBDS in Students With ASD**

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\beta$</th>
<th>95% CI</th>
<th>$sr^2$</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years working</td>
<td>0.003</td>
<td>-0.017, 0.023</td>
<td>0.000</td>
<td>0.282</td>
</tr>
<tr>
<td>Degree type</td>
<td>0.059</td>
<td>-0.409, 0.527</td>
<td>0.000</td>
<td>0.250</td>
</tr>
<tr>
<td>Number of students with ASD and an EBD worked with this year</td>
<td>0.015</td>
<td>-0.027, 0.057</td>
<td>0.002</td>
<td>0.698</td>
</tr>
<tr>
<td>How well trained are you in assessing for EBDs in students with ASD</td>
<td>0.826</td>
<td>0.596, 1.056</td>
<td>0.245</td>
<td>7.112***</td>
</tr>
</tbody>
</table>

**Note.** $R^2 = 0.321$, Adjusted $R^2 = 0.302$, $F = 16.576^{***}$

$sr^2$ = squared semi-partial correlation

*** $p < .001.$
Table 7

Predictors of Confidence to Address the Co-Occurring EBDs of Students With ASD Through Counseling

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\beta$</th>
<th>95% CI</th>
<th>sr$^2$</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years working</td>
<td>0.011</td>
<td>-0.013, 0.035</td>
<td>0.005</td>
<td>0.921</td>
</tr>
<tr>
<td>Degree type</td>
<td>0.442</td>
<td>-0.118, 1.003</td>
<td>0.014</td>
<td>1.560</td>
</tr>
<tr>
<td>Number of students with ASD and an EBD worked with this year</td>
<td>0.016</td>
<td>-0.035, 0.066</td>
<td>0.002</td>
<td>0.618</td>
</tr>
<tr>
<td>How well trained are you in assessing for EBDs in students with ASD</td>
<td>0.465</td>
<td>0.114, 0.816</td>
<td>0.038</td>
<td>2.618**</td>
</tr>
<tr>
<td>How well trained are you in developing interventions addressing the problem behaviors of students with ASD and EBDs</td>
<td>0.247</td>
<td>-0.082, 0.577</td>
<td>0.012</td>
<td>1.485</td>
</tr>
</tbody>
</table>

Note. $R^2 = 0.229$, Adjusted $R^2 = 0.202$, $F = 8.272^{***}$

$sr^2$ = squared semi-partial correlation

** $p < .01$, *** $p < .001$. 
Table 8
Predictors of Confidence to Develop Effective Behavioral Intervention Plans to Address Problem Behaviors of Students With ASD Who Have Co-Occurring EBDs

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>95% CI</th>
<th>sr²</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years working</td>
<td>-0.003</td>
<td>-0.019, 0.014</td>
<td>0.000</td>
<td>-0.322</td>
</tr>
<tr>
<td>Degree type</td>
<td>0.117</td>
<td>-0.262, 0.496</td>
<td>0.001</td>
<td>0.611</td>
</tr>
<tr>
<td>Number of students with ASD and an EBD worked with this year</td>
<td>0.015</td>
<td>-0.019, 0.049</td>
<td>0.003</td>
<td>0.857</td>
</tr>
<tr>
<td>How well trained are you in developing interventions addressing the problem behaviors of students with ASD and EBDs</td>
<td>0.935</td>
<td>0.758, 1.111</td>
<td>0.410</td>
<td>10.478***</td>
</tr>
</tbody>
</table>

Note. \( R^2 = 0.478, \) Adjusted \( R^2 = 0.463, F = 31.986*** \)
\( sr^2 = \) squared semi-partial correlation
*** \( p < .001. \)
Table 9
Predictors of Confidence to Provide Consultation to Those Working Directly With Students That Have ASD and EBDs

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\beta$</th>
<th>95% CI</th>
<th>$sr^2$</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years working</td>
<td>0.006</td>
<td>-0.009, 0.021</td>
<td>0.002</td>
<td>0.748</td>
</tr>
<tr>
<td>Degree type</td>
<td>0.315</td>
<td>-0.035, 0.665</td>
<td>0.013</td>
<td>1.778</td>
</tr>
<tr>
<td>Number of students with ASD and an EBD worked with this year</td>
<td>-0.007</td>
<td>-0.038, 0.25</td>
<td>-0.001</td>
<td>-0.422</td>
</tr>
<tr>
<td>How well trained are you in assessing for EBDs in students with ASD</td>
<td>0.130</td>
<td>-0.089, 0.349</td>
<td>0.006</td>
<td>1.171</td>
</tr>
<tr>
<td>How well trained are you in developing interventions addressing the problem behaviors of students with ASD and EBDs</td>
<td>0.648</td>
<td>0.442, 0.853</td>
<td>0.160</td>
<td>6.225***</td>
</tr>
</tbody>
</table>

Note. $R^2 = 0.430$, Adjusted $R^2 = 0.410$, $F = 21.009^{***}$

$sr^2 = \text{squared semi-partial correlation}$

$^{***} p < .001$. 