The Complex Nature of Asperger’s Syndrome: Assessing Knowledge and Perceptions of School Psychologists

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THE COMPLEX NATURE OF ASPERGER’S SYNDROME: ASSESSING KNOWLEDGE AND PERCEPTIONS OF SCHOOL PSYCHOLOGISTS

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Submitted in Partial Fulfillment of the Requirements of the Degree of Doctor of Psychology

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DEPARTMENT OF PSYCHOLOGY

Dissertation Approval

This is to certify that the thesis presented to us by Kelly L. Herman on the 9th day of November, 2007, in partial fulfillment of the requirements for the degree of Doctor of Psychology, has been examined and is acceptable in both scholarship and literary quality.

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Dedication and Acknowledgement

I would like to thank my dissertation committee chair and members, Dr. Diane Smallwood, Dr. Daniel Ingram, and Dr. Emily Chernicoff, for all of their guidance and support. I would also like to thank my family and, in particular, my mother and sister for all of their encouragement and support.

This dissertation is dedicated to my daughters Kendall, Kayla, and Kylie. I also dedicate this work to Ray and Jeanne, who inspired me to learn more.
Abstract

The complex nature of Asperger’s Syndrome (AS) often results in difficulty effectively meeting the needs of individuals with this disorder. Despite advancements in research and increasing focus on this disorder, limited awareness and understanding often result in difficulty identifying and, therefore, adequately supporting individuals with AS. Inadequate or faulty treatment further results from inappropriate diagnosis or failure to recognize psychiatric disorders likely to coexist with AS. This paper provides a literature review of AS and problems resulting from limited awareness, failure to identify or diagnose the disorder, failure to recognize common comorbid conditions, and failure to provide the appropriate supports and services. A description of the research study is presented, along with ethical and multicultural considerations. Finally, recommendations for future research and implications for practitioners are presented.

The purpose of the present study was to assess school psychologists’ knowledge and perceptions related to this disorder. Related purposes included assessing levels of knowledge of teachers and professionals working with students with AS, as well as to determine what supports and services are afforded to them. This information was obtained through a survey, which was distributed to a sample of school psychologists.

The results of the research study revealed that, whereas school psychologists view themselves as having sufficient knowledge about Asperger’s syndrome, they view many other educational professionals, including general education teachers, as lacking adequate knowledge about the disorder. Another major finding was that, despite student needs in the
social, emotional, and communication domains, school psychologists reported that a large number of students were not receiving counseling or speech-language therapy.
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Chapter 1

Introduction

Asperger’s Syndrome: Definition and Description

As Kaufman (2002) noted, in 1944 an Austrian physician named Hans Asperger observed a group of boys displaying a set of behaviors and self-absorbed, withdrawn tendencies he identified as Autistic Personality Disorder. The author added that in 1980, after working with a population of children displaying similar behaviors, British psychologist Lorna Wing eventually coined the term Asperger Syndrome. Safran, Safran, and Ellis (2003) further noted that it was not until half a century after its initial discovery that the American Psychiatric Association formally designated this syndrome as a distinct clinical disorder.

Klin and Volkmar (1995) described Asperger’s Syndrome (AS) as a severe developmental disorder characterized by significant impairment in social interaction and restricted and unusual patterns of interest and behavior. Church, Alisanski, and Amanullah (2000) stated that individuals with AS evidence difficulties in emotional relatedness. Additionally, although there are no significant language delays, difficulties with pragmatic language are observed.

According to the American Psychiatric Association’s Diagnostic and Statistic Manual of Mental Disorder, fourth edition--Text Revision, or DSM--IV--TR (2000), there are two primary diagnostic criteria that must be present in order to make the diagnosis of AS. One criterion relates to qualitative impairment in social interaction. Specific characteristics may include marked delays in nonverbal behaviors, impairments in
establishing peer relationships, absence of spontaneous seeking of shared enjoyment, interests, or achievements with others, and delays in social reciprocity. The second criterion relates to restricted areas of interest and stereotyped behaviors. Characteristics may include a preoccupation with a restricted area of interest, inflexibility or rigidity, stereotyped or repetitive motor movements, and preoccupations with objects or parts. As highlighted by Safran et al. (2003), additional characteristics such as poor motor skills and sensory difficulties may also be evident. As further stated by Myles and Simpson (2002), there is some dispute over the presence of motor delays with AS, though there appears to be sufficient evidence to indicate potential problems in this area. For instance, Miyahara et al. (1997) conducted a study in which they found that students with AS demonstrated a high prevalence of motor delay on a standardized test of motor performance. Others studies, such as the one conducted by Weimer, Schatz, Lincoln, Ballantyne, and Trauner (2001), found deficits in motor apraxia, but no clinically significant delays in motor functioning. The authors asserted that the motor incoordination observed in individuals with AS may be due to a sensory pathway deficit rather than a motor pathway deficit. Despite the inconsistent findings regarding motor deficits with AS, the DSM—IV--TR (2000) states that motor clumsiness or awkwardness may be present with this disorder. The manual further noted that, although typically mild in nature, such motor difficulties may contribute to social isolation and peer rejection. According to Myles and Simpson (2002), such deficits are likely to impact areas including writing, art, sports, and industrial arts.

It is essential to differentiate AS from both autistic disorder and pervasive developmental disorder-not otherwise specified (PDD-NOS). All three disorders fall
under the umbrella of pervasive developmental disorders. As noted in the *DSM—IV—TR* (2000), Asperger’s disorder, autistic disorder, and PDD-NOS are all characterized by a qualitative impairment in social interaction. The manual further states that AS can be differentiated from autism by a lack of delay in early language development. Furthermore, as noted by Barnhill (2001a), there is no clinically significant delay in cognitive functioning, as individuals with AS typically have average to above average intelligence. The author further noted that AS tends to have a later onset than autism or is diagnosed later because social difficulties will become more apparent in the context of the school setting.

Additionally, whereas social interactions are typically marked by self-isolation or profoundly rigid social approaches in autistic disorder, with AS there may be motivation for approaching others, though often done in a highly eccentric and one-sided manner that appears insensitive. In autism, restrictive, stereotypical, and repetitive interests or activities are typically accompanied by motor mannerisms, a preoccupation with parts of objects, rituals, and significant distress in change. With AS, however, these are usually observed in the all-encompassing pursuit of an interest involving a topic to which the individual devotes an exorbitant amount of time. (APA, 2000).

*Statement of the Problem*

Although greater focus in recent years has led to increased awareness and knowledge of AS, Myles and Simpson (2002) contended that this population remains challenging, perplexing, and largely misunderstood. These factors often make it difficult to effectively meet the needs of individuals with this disorder.
As noted by Church et al. (2000), there is an added challenge for individuals with AS, particularly in comparison to other disabilities. Specifically, the physical characteristics of disabilities such as Down syndrome and mental retardation promote more immediate awareness of differences and subsequently, greater understanding and acceptance of limitations and behaviors. In contrast, however, the perfectly normal appearance of individuals with AS, when coupled with their odd use of language and atypical social behaviors, may lead to a lack of understanding and tolerance from those around them. As Church et al. (2000) added, these children may be mistakenly viewed as behavior problems, cold, or inappropriate because of difficulties understanding social rules, empathizing, and recognizing alternative points of view.

Due to the complex nature of AS, there are challenges regarding appropriately identifying such individuals. Difficulties arise not only from failure to identify AS, but from limited awareness and understanding that may result in increasing behavioral problems, misdiagnosis, or failure to recognize conditions coexisting with the disorder. Without proper identification and understanding of the disorder, it is difficult to appropriately meet the needs of the individual with AS.

The literature review will illustrate that, despite increased research and awareness, there is still limited understanding about AS. This limited knowledge presents a barrier to appropriately identifying and treating individuals with the disorder. Furthermore, failure to identify AS and provide support in the early years can have serious detrimental consequences, as previously noted. Therefore, the purpose of the present study was to assess the level of knowledge and understanding that individuals working with children
with AS have about the disorder. A related purpose of the study was to examine the specific services and supports provided to students with AS.

**Purpose of the Study**

The purpose of the present study was to gain additional information about the knowledge and perceptions of those working with children with AS have about the disorder. A secondary purpose was to gain information about the type of educational programming and services provided to students with AS.
Chapter 2

Review of Literature

Myles and Simpson (2002) stated that AS is primarily a social disorder. Individuals with AS tend to be viewed as odd or eccentric, socially awkward, self-centered, and emotionally blunted. They also tend to exhibit inflexible or rigid patterns of thinking. Myles and Simpson (2002) added that, because children with AS have difficulty understanding nonverbal social cues and lack awareness of social standards and norms, they will often display behaviors viewed as socially unacceptable. Considering the characteristics and behaviors that define this complex disorder, it easy to understand how the inability of these children to understand or appreciate the views, thoughts, and feelings of others could lead them to be viewed as uncaring and self-centered by those not familiar with AS. Similarly, poor social judgment, difficulty understanding social rules, and a tendency to be blunt can easily be mistaken for rudeness by individuals with limited knowledge of the disorder.

Webb, Miller, Pierce, Strawser, and Jones (2004) noted that the development of social competence is an essential goal for all children. Myles and Simpson (2002) have defined social competence as a set of skills and strategies that allow individuals to have meaningful friendships with others. Gutstein and Whitney (2002) noted that social competence also encompasses the abilities to collaborate productively with groups, work partners, and teams, manage public social settings, and participate in family functioning.

One essential component of social competence involves understanding social rules. As noted by Myles and Southwick (2005), whereas social rules are generally
second nature to most people, these rules are not innately understood by many individuals with AS.

Gutstein and Whitney (2002) asserted that the three main elements of social competence are secure attachment, instrumental social learning, and experience-sharing relationships. The authors noted that attachment is the affiliative tie of an infant to his or her parents, whereas instrumental social learning refers to engaging in an interaction in order to obtain specific objects, skills, or information. The authors further stated that experience-sharing involves the skills and drive necessary to engage in reciprocal play, develop friendships, and value others’ points of view. According to Gutstein and Whitney (2002), individuals with AS appear to develop secure attachments and the ability for instrumental interaction, but they typically fail to develop experience-sharing.

The social skills deficits that individuals with autism spectrum disorders (which include autism, AS, and PDD-NOS) demonstrate will lead to not only making frequent errors in decoding and interpreting social information, but also in acting on such errors within the context of social relations with others. Because of this, interpersonal relationships with family and friends are likely to suffer, and the ability to obtain or maintain employment will be quite difficult. (Webb et al., 2004).

As noted by Myles and Simpson (2002), despite limited awareness and understanding of social rules, children with AS are quite aware that they do not fit in with their peers. Although they desire to be accepted and fit in with peers, these children lack the skills and means necessary to accomplish this goal. The authors asserted that peer acceptantance is further hindered by the fact that, because children with AS are viewed as odd and different, they often become targets for teasing and bullying.
Research by authors such as Attwood (1998), Baron-Cohen (1995), and Kinderman, Dunbar, and Bentall (1998) has indicated that children with AS lack theory-of-mind. Baron-Cohen (1995) has described theory-of-mind as the ability to attribute mental states to others in order to predict and explain the behavior of others. Likewise, Kinderman et al. (1998) stated that theory-of-mind is the ability to understand and conceptualize the mental processes of others. This ability is viewed as having a central role in social communications. The authors further noted that theory-of-mind deficits have been identified as having a possible causal role in disorders such as autism and Asperger’s syndrome. Because of a lack of theory-of-mind, Gevers, Clifford, Mager, and Boyer (2006) asserted that individuals with pervasive developmental disorders experience difficulties with reciprocal social interactions. Myles and Southwick (2005) further stated that theory-of-mind difficulties have a significant impact on individuals with AS. The authors added that the following academic, behavioral, and social problems are likely to be evident: difficulty explaining one’s own behaviors, difficulty understanding emotions, difficulty predicting behavior and emotional state of others, problems understanding others’ perspectives, difficulty inferring others’ intentions, the inability to understand that behavior impacts others’ thoughts and feelings, problems with joint attention and social practices, and problems distinguishing fact from fiction. As Harwood and Farrar (2006) further noted, a more complex understanding of the mind may lead to more advanced social-emotional understanding across many different situations.

Failure to see others’ points of view may help explain why individuals with AS appear to lack empathy. According to Blakemore and Frith (2004), empathy is a complex
emotion that requires awareness of both others’ feelings and one’s own reaction. According to the authors, typically developing children will begin to show empathic responses when another person is upset or in pain around the age of 2. However, because of difficulties recognizing emotions in self and others and problems recognizing others’ perspectives, children with AS will have trouble with empathy.

As noted by Verte, Guerts, Roeyers, Oosterlaan, and Sargeant (2006), multiple studies have identified executive functioning deficits in individuals with autistic spectrum disorders. According to Solomon, Goodlin-Jones, and Anders (2004), executive functions, which include planning, impulse control, inhibition, maintenance, organization, and flexibility of thought and action, are mental control processes that allow the individual to maintain an appropriate problem-solving set for attainment of a future goal. Verte et al. (2006) have further identified working memory and verbal fluency as executive function domains. In a study conducted by the researchers, children with AS demonstrated deficits in cognitive flexibility, planning, inhibition, verbal fluency, and working memory.

*Asperger’s Syndrome and the Preschool Child*

According to Myles and Southwick (2005), children with AS will begin to experience difficulty building and maintaining friendships at a young age. As the authors noted, an inability to understand social cues, the tendency to interpret words and phrases in a concrete manner, and difficulties with language comprehension all lead to difficulty interacting with peers. Myles and Southwick (2005) added that further difficulties arise
from a clumsy social style, the tendency to engage in one-sided social interactions, and difficulty taking others’ perspectives or accurately sensing others’ feelings.

According to Gutstein and Whitney (2002), at about age 4, normally developing children are able to coordinate free play, understand the perspectives of others, and use joint attention to coordinate perceptions with peers and share novel experiences. However, this is not the case for children with AS. In a study conducted by Church, Alisanski, and Amanullah (2000), the researchers found that preschoolers with AS tended to have difficulty initiating and sustaining relationships with peers. The researchers further noted that many of the preschoolers misread social situations and failed to read social cues of both teachers and classmates. Additionally, whereas some children seemed to be oblivious to the other children around them, others were inappropriately silly, loud, or aggressive. According to Gutstein and Whitney (2002), a child who engages in activities without observing the reactions of peers is likely to be avoided. In contrast, a child who bases his or her actions on the reactions of peers is likely to be valued.

A primary challenge of meeting the needs of the preschool child with AS is the fact that it is often difficult to recognize and diagnose this disorder during the early years. As highlighted by Church et al. (2000), although these children are likely to stand out from their peers as unique and different, it is often not to the degree that they are viewed as needing comprehensive assessment. In addition, as Attwood (1998) noted, because children with AS typically develop language skills either early or on time, their development during these years may not be viewed as particularly unusual. Consequently, parents, caregivers, or teachers may have little reason to suspect the child may have a disorder such as AS.
As Klin and Volkmar (1995) stated, behavior, such as a preoccupation with restricted patterns of interest, may not be easily recognized during the early years as a symptom of AS because it is not particularly unusual for young children to demonstrate strong interests in specific topics (such as dinosaurs or fictional characters, for example). In addition, limited knowledge about the disorder may further hinder early identification. As these children enter school, however, their difficulties and differences may become more evident.

Of preschoolers studied by Church et al. (2000), 72% did not receive a formal diagnosis of AS until after their fifth birthday. The researchers indicated that, in the social context of the school setting, difficulties with social interactions, play skills, and sensory processing become more evident, as does the tendency to display odd and unique behaviors.

According to Attwood (1998), however, this may not always be the case. At a young age, the child with AS may present with a well-developed vocabulary and good memorization for rote skills. Although these children may be viewed as odd or different from other children, their apparent command of the basic rote skills that are stressed during the early years may result in the failure of teachers to see them as a priority for referral.

As Klin and Volkmar (1995) noted, it is common for children with AS to display a precociousness for learning to talk, a fascination with letters and numbers, and even the ability to decode words during the early years. Safran et al. (2003) further asserted that, because of average to above average intelligence, parents, caregivers, and teachers are likely either to miss early signs of the disorder or underestimate the seriousness of them.
In addition, whereas preschoolers exhibiting signs of AS may have difficulty initiating and maintaining relationships with peers, Church et al. (2000) indicated that these children tend to get along well with their teachers and other adults.

Although researchers such as Bankier, Lenz, Gutierrez, Bach, and Katschnig (1999) have highlighted the importance of early recognition and diagnosis of AS, as well as the detrimental effects of failing to provide treatment and intervention during the sensitive years of development, the previously mentioned factors often make early identification challenging. Unfortunately, difficulty identifying AS may lead to behavioral difficulties as a result of failing to recognize and therefore address such factors as social deficits, transition difficulties, and sensory needs.

Asperger’s and the Elementary School Child

As children with AS mature and develop, they may be viewed as exhibiting more difficulties. This point was illustrated by Church et al. (2000), who asserted that social skills deficits take center stage as novel and more complex social situations place increasing demands on children with AS.

In a study conducted by Church et al. (2000), the researchers found that elementary school children with AS had significant social skills difficulties. In particular, none of the children had deep, reciprocal relationships with peers. However, several children, as noted by the authors, had superficial relationships with other children. According to the researchers, children in this age group were either quiet and unassuming or exuberant, active, and frequently in violation of social boundaries. Children in the
latter group would often become too physical and have difficulty keeping their hands to themselves, the researchers noted.

As Church et al. (2000) further noted, students in upper elementary grades still tended to have superficial relationships. According to the authors, the child with AS would often direct play and was likely to become upset if a peer had alternative ideas about how to play. Furthermore, play tended to be based on rigid rules, and friendships would sometimes dissolve if those rules were broken. In the later elementary years, children with AS were viewed as silly, rude, or very inappropriate. Significant difficulty understanding the depth and meaning of others’ emotional expressions and reacting to expressed emotions was also observed.

Although social difficulties are the core of AS, the features and characteristics of this disorder will also impact academic functioning. For instance, the tendency of those with AS to be verbose is often misleading. As Myles and Simpson (2002) contended, the needs of these children often go unrecognized because their well-developed vocabularies, oral expression, and ability to recall calls often give the impression that they understand more than they actually do. Often, their abilities in these areas result in failure of others to recognize deficits in comprehension and higher order thinking. Consequently, frustration may result from placing unrealistic academic demands or expectations on these children. As Little (2002) noted, children with AS are often placed in general education classrooms. Therefore, unrealistic demands and expectations are even more likely, given that general education teachers are unlikely to have had training or much experience in working with this population.
According to Griswold, Barnhill, Myles, Hagiwara, and Simpson (2002), children with AS often exhibit deficits in comprehension of abstract concepts and figures of speech, distinguishing essential from nonessential or irrelevant information, and the ability to problem solve. Academic difficulties tend to be further compounded by attention problems. Additionally, given that researchers such as Klin and Volkmar (1995) noted the tendency for children with AS to exhibit deficits in the areas of visual-motor coordination and manipulative skills, it is not surprising that many of these children will demonstrate difficulty with grapho-motor tasks such as writing. This further adds to academic problems, particularly when considering the emphasis on written language skills in the classroom setting.

Ghaziuddin (2002) indicated that it is quite common for individuals with AS to exhibit symptoms of hyperactivity and impulsivity. Understandably, these behaviors can further impact academic functioning. According to the authors, hyperactivity and impulsivity tend to be particularly prevalent during the elementary school years. When the symptoms reach the necessary level of severity, a diagnosis of ADHD is often made.

However, there are instances in which children initially diagnosed with ADHD may more appropriately fit the criteria for AS. Perry (1998) notes that it in many cases, misdiagnoses may lead to incorrect or inadequate treatments. The author further asserts that it is important to recognize that symptoms of ADHD, such as hyperactivity, inattention, and impulsivity, can be associated with a number of childhood-onset psychiatric disorders, including pervasive developmental disorders. Additionally, Ghaziuddin, Weidmer-Mikhail, and Ghaziuddin (1998) contended that the social intrusiveness and oddities of children with AS can further lead to the misdiagnosis of
ADHD. Because of this, the researchers highlight the importance of screening children with previous diagnoses of ADHD who display social difficulties, in order to ascertain if AS is a more appropriate diagnosis.

It is also important to recognize that children with AS often experience sensory processing difficulties. As noted by Roe (1999), the tendency for children with AS to perceive sights, sounds, touch, motion, smells, and taste in a manner that distorts the stimuli often results in feelings of hypersensitivity to such stimuli. This is of importance because, according to Myles and Simpson (2002), a study of individuals with AS revealed that 75% of the subjects demonstrated behavioral difficulties when sensory thresholds were violated. Given that children with AS may be more inclined to exhibit disruptive behaviors when experiencing sensory difficulties, problematic behaviors in the classroom may be mistakenly perceived as defiance or opposition when, in fact, such behaviors may simply be a reaction to sensory overload.

Transitions may also be particularly difficult for children with AS. Safran et al. (2003) asserted that this may become more evident during the middle school years, when increased changes in teachers and classes are likely to present greater problems for such children. The authors add that weaknesses in academic organization and attention further add to difficulties encountered during activity changes and transitions.

Although a surge of research and literature on AS in recent years has led to development and greater awareness of the disorder, Myles and Simpson (2002) have indicated that much remains to be learned about AS. They further noted that, despite advancements, there continues to be a lack of understanding about this disorder. In the educational setting, this lack of understanding, coupled with limited research in areas
such as the most suitable educational methods for children with AS, lead to challenges in implementing appropriate and effective educational, social, and emotional supports.

To illustrate the negative consequences resulting from failure to correctly identify such a disorder, Roe (1999) provided a case example of a boy who continually experienced significant behavior problems in school. Due to his difficulties, he was frequently suspended and ultimately expelled from school. Only after his expulsion did he receive a diagnosis of AS. Roe (1999) further explained that the discovery of the boy’s disorder subsequently led to the realization that the majority of his behaviors resulted from having been set up by peers or as a response to being wrongfully punished for misdeeds he had not committed. The author further notes that, whereas social deficits and odd behaviors result in a greater tendency for children with AS to be targeted by peers, the disorder itself also leaves these children vulnerable and unable to defend themselves in social situations. Consequently, when faced with repeated abuse from peers and wrongful blame, an increase in problematic behaviors is not surprising.

Similarly, Frazier, Doyle, Chiu, and Coyle (2002) presented a case highlighting the negative outcomes likely to result from failure to properly identify and diagnose AS. The researchers discussed a case of a boy whose delayed diagnosis and treatment led to years of increasing dysfunction and a worsening of symptoms.

Asperger’s and the Adolescent

As Gutstein and Whitney (2002) noted, typically developing children spend countless hours experimenting and practicing with relationships. However, this is not the case for children with AS, who then enter adolescence and young adulthood in a manner
that is increasingly divergent from others in their drives, interests, and social thinking. According to Gutstein and Whitney (2002), such individuals develop their own unique type of socialization that neglects the study and mastery of reciprocal experience sharing. Without mastery of experience sharing, the individual fails to become proficient in relationship building and the maintenance of relationships.

In a study conducted by Church et al. (2000), the researchers found that social skills difficulties continued to be the most challenging problem as students entered adolescence. As is the case with younger children, adolescents’ social relationship also tended to be superficial. Most often, friendships were based on a common interest, such as a love of computer games. Although teens with AS seemed to take an interest in the opposite sex, difficulty reading social cues tended to interfere with meeting and establishing relationships with members of the opposite gender. As stated by Church et al. (2000), difficulties reading social cues, interacting appropriately with others, and understanding consequences of one’s actions significantly interfered with socialization overall. As noted by Myles and Simpson (2002), many students with AS recognize that they are different from their peers. Because of this, self-esteem and self-concept difficulties often arise.

Whereas externalizing behavior problems and ADHD-like symptoms are particularly prevalent in children with AS during the elementary school years, depression commonly occurs during adolescence. According to Myles and Simpson (2002), children with AS do not develop greater social awareness simply as a function of age. Consequently, these individuals will find themselves at increasing odds with existing
social norms as they move through the developmental stages. This will lead to greater vulnerability, anxiety, and discomfort with social situations.

As noted in Barnhill (2001b), the greatest challenge and disability for individuals with AS may be seen during adolescence and young adulthood, in which social relationships are of central focus and importance in virtually all activities. The authors add that, because of painful awareness of social differences at these stages, depression and anxiety often occur. These conditions are likely to be perpetuated by the frustration experienced by these individuals as they continue to desire to fit in. Despite the ongoing desire to gain acceptance and interact socially with peers, the adolescent is still faced with deficits in the skills needed to accomplish this task.

Myles and Simpson (2002) indicated that social isolation often results from a lack of understanding regarding the rules of social behavior and how to respond to various situations, as well as from the inability to infer the thoughts and beliefs of others. Furthermore, the authors noted that since adolescents with AS continue to be viewed as odd or different, bullying continues to occur at this stage. Understandably, this further results in lowered self-esteem and self-confidence, as well as in increased feelings of anxiety and depression.

In one research study on depression with AS, Barnhill (2001b) sought to investigate the relationship between social attributions and level of depressive symptoms in adolescents with the disorder. According to the author, it is important to determine whether individuals with AS possess a social attributional style likely to place them at risk for depression. If so, this will obviously have important implications for intervention and treatment. As further noted by Barnhill (2001b), the results of the study revealed that
the more individuals with AS attributed social failure to their ability and effort, the higher their level of depressive symptoms.

In a related study, Barnhill and Myles (2001) found a significant relationship between attributional style and depression for individuals with AS. This study also found evidence of a learned helplessness phenomenon in individuals with the disorder. As the authors reported, the participants in the study appeared to blame themselves for negative outcomes or events, and attributed negative events to internal, stable, and global reasons.

Regardless of what factors the presence of depression in individuals with AS is attributed to, research on this topic does clearly highlight the importance of increasing knowledge and awareness of depression within this population. As Barnhill and Myles (2001) asserted, despite the fact that research indicates that individuals with developmental disabilities, including AS, are prone to depression and anxiety, there has been little research regarding suicidal ideation and gestures within this population. The authors further commented that, at times, individuals may not even be identified as having AS until a crisis such as a suicide attempt or involvement with the legal system occurs.

Clearly, advancements in the field of depression within the AS population are vital in order to ensure that the condition is diagnosed and appropriately addressed with positive interventions before a crisis occurs. Given that individuals with AS may be at increased risk for depression, particularly during adolescence and early adulthood, Ghaziuddin et al. (1998) have highlighted the importance of screening individuals with AS for depressive disorders.
Bipolar disorder has also been reported in individuals with AS. Frazier et al. (2002) indicated that it may be common for an individual with AS to suffer from comorbid mood disorders for years before a diagnosis is made. The authors further asserted that the delay in diagnosis may result from the fact that symptoms and behaviors associated with AS may mask the symptoms of a mood disorder. Specifically, behaviors such as inattention, hyperactivity, obsessiveness, stereotypies, social intrusiveness, social withdrawal, aggression, and self-injurious behaviors, which are associated with autistic spectrum disorders, may also be quite evident during manic or depressive phases of bipolar disorder. Frazier et al. (2002) further noted that the presence of comorbid bipolar disorder should be considered when there is deterioration in cognition, language, behavior, or activity, and when observed behaviors indicate a mood problem.

Although none of the studies reviewed specifically sought to examine anxiety disorders within the AS population, many researchers do discuss this topic in conjunction with depression. As reported by Ghaziuddin (2002), the results of a study examining mood disorders and symptoms with adolescent boys with AS revealed that this group tended to experience high levels of anxiety. As previously mentioned, increases in both anxiety and depression tend to occur during adolescence, due to the increased emphasis on the importance of socialization. Attwood (1998) further addressed this topic by stating that, due to the difficult and challenging nature of social situations, many young adults with AS have reported intense feelings of anxiety. At times, panic attacks or compulsive behaviors have further resulted.

As cited by Ghaziuddin (2002), because idiosyncratic interests, single-minded pursuits, and obsessions are included in the diagnostic criteria of AS, it is often
challenging to distinguish between the obsessions that persist within the framework of this disorder from those characteristic of obsessive-compulsive disorder (OCD). The author further contended that although AS and OCD can themselves be easily differentiated from one another, there are instances where the two disorders can co-occur. Ghaziuddin (2002) noted, however, that although individuals with AS may have OCD-type behaviors that accompany their compulsive interests, the presence of OCD as a comorbid condition may be indicated if the behaviors or symptoms are accompanied by distress. The author further stated that the individual may also present with a desire to reduce or decrease the ritualistic behaviors. Therefore, one clear distinction between AS with OCD-type behaviors and true OCD lies in the fact that, whereas the idiosyncratic interests of the AS child do not lead to internal distress and tend to be pleasurable, such symptoms tend to cause stress and anxiety for those with OCD.

Asperger’s and the Adult

Although the review of literature has clearly shown there are many struggles and difficulties encountered by children and adolescents with AS, the adult with this disorder is likely to face even greater challenges as a result of limited understanding and tolerance of AS-related behaviors.

According to Gutstein and Whitney (2002), studies of adults with AS have revealed this group to be largely unemployed or underemployed, unable to live independently, and lacking significant social relationships. The researchers further reported a study in which only 12% of adults with AS were employed full time. Furthermore, social difficulties were cited as the leading cause of job failure. Gutstein
and Whitney (2002) asserted that the frequent negative outcomes of adults with AS may be largely due to the failure of these individuals to attain social competence as they enter adolescence and young adulthood. The authors further contend that this reinforces the critical need for such individuals to be appropriately identified at an early age, so that appropriate intervention and support can be provided.

The need for support is further illustrated by Kreytak (1998). The author presented a story of a 29-year-old man who, although having the desire and credentials to work as a computer programmer, worked at two part-time jobs and earned a meager annual income of $5,000. Kreytak (1998) noted that, despite the man’s knowledge and mastery of skills in his desired career area, his AS had stalled his career development. Specifically, the disorder interfered with his ability to hold a job by limiting his understanding of social norms.

Telzow and Koch (2003) have further highlighted challenges regarding employment. Although their research focuses on individuals with nonverbal learning disabilities rather than those with AS specifically, their research is pertinent since, as the authors note, AS has been identified as one condition that produces patterns of performance resembling nonverbal learning disability. Furthermore, researchers such as Brumback, Harper, and Weinberg (1996) have described AS as a severe form of nonverbal learning disability. In addition to these viewpoints, the similarities regarding social and interpersonal deficits between both groups make this research particularly relevant.

Telzow and Koch (2003) noted that, for such individuals, some challenges to employment may include difficulty with tasks requiring gross or fine motor skills,
difficulty adjusting to changes in routine or structure, and, most notably, poor social skills. The authors further assert that impairments in social functioning provide the greatest barriers to successful employment. Specifically, poor social skills, atypical speech patterns, difficulty perceiving nonverbal cues, and difficulty recognizing sarcasm or humor may make gaining acceptance from coworkers challenging for these individuals. Telzow and Koch (2003) further asserted that unusual behaviors or characteristics, along with a lack of awareness regarding common social expectations in the workplace, often lead to difficulties establishing positive relationships with coworkers and supervisors.

As previously noted, Gutstein and Whitney (2002) have asserted that social competence also encompasses the abilities to collaborate productively with groups, work partners, teams and to manage public social settings. Because individuals with AS will generally fail to develop adequate social competence, such difficulties in these areas will have a direct impact on their employment opportunities and experiences. Furthermore, as Howlin (2000) asserted, the inability to develop social competence is the primary cause for the failure of most adults with autistic spectrum disorders to attain a minimal quality of life.

Although the identification of AS is an essential precursor for providing appropriate supports and interventions to individuals with this disorder, properly differentiating AS from other psychiatric disorders is equally critical for appropriate treatment. As Stenmark, Sigalin, Beier, and Ericson (2002) noted, the symptoms and behaviors of those with autistic spectrum disorders are often misunderstood as psychotic symptoms. In a study reported by the researchers, 14 patients with prepsychotic and
psychotic symptoms were referred for evaluation. The results of psychiatric and neuropsychological assessments revealed the diagnosis of AS for two of the patients and autistic disorder for one. As further noted by Stenmark et al. (2002), those patients diagnosed with AS or autism demonstrated substantially greater impairments in social skills than the psychotic patients and, therefore, were in need of greater support in this area.

Whereas Ghaziuddin (2002) indicated that the co-occurrence of schizophrenia and AS is not common, there are cases where individuals with AS have been misdiagnosed with schizophrenia. For instance, Perlman (2000) stated that his previous work with schizophrenic patients revealed a subgroup that, although exhibiting common characteristics such as social withdrawal, apathy, and social communication difficulties, related to others in a manner that was quite different from that of most schizophrenic patients. The author added that increased awareness of AS has ultimately led to the realization that many of these individuals may have been misdiagnosed as schizophrenic and could have more appropriately been diagnosed as having AS. Similarly, Attwood (1998) contended that during adolescence, peer rejection and social isolation may result in the individual retreating into his or her own inner world. Such individuals may engage in outward self talk and lose interest in social contact and personal hygiene. Although these behaviors may lead one to mistakenly suspect the development of schizophrenia, a closer examination may reveal the presence of AS rather than a psychotic disorder.

Pelletier (1998) noted that there is the possibility of misdiagnosing AS as borderline personality disorder. The author comments that this type of occurrence is not surprising, particularly since there can be significant overlap between some behaviors and
characteristics present in both disorders. Pelletier (1998) illustrated this by briefly describing two cases in which children who were hospitalized and had been previously diagnosed with borderline personality disorder, were later re-evaluated and determined to meet the clinical criteria for AS. Faced with these occurrences, the author concludes by examining the possibility that many adults who have been diagnosed with borderline personality disorder may, in fact, present with AS.

**Implications for Assessment and Intervention**

Clearly, the current literature review demonstrates the critical nature of early identification of developmental disorders such as AS, particularly in light of the negative consequences that have resulted due to misdiagnosis or lack of knowledge. Furthermore, limited awareness regarding disorders likely to co-exist with AS has also resulted in limited progress for these individuals, due to the presence of additional disorders that are not being adequately addressed. With these factors in mind, many researchers have provided guidelines for screening and assessment of AS, as well as recommendations for interventions.

Safran (2001) highlighted several instruments that can aid in the identification of young children at risk for AS. Some of these include the Australian Scale for Asperger’s Syndrome and the Autism Spectrum Disorders Screening Questionnaire. Safran et al. (2003) further identified such instruments as the Asperger Syndrome Diagnostic Scale and the Gilliam Asperger’s Disorder Scale. These types of instruments may help to identify patterns of behavior that are observed with AS. As further noted by the authors, however, although the use of rating scales and such instruments can be helpful in early
identification, their results should not be used in isolation, but as part of a comprehensive multidisciplinary assessment process. This process should ideally include such areas as communication skills/pragmatic language, comprehension, motor skills, social/emotional functioning, cognitive characteristics, and sensory processing. Safran (2001) stated that the uniqueness of such indicators as impaired interpersonal skills, isolated play, and delayed motor impairment, in the presence of normal language and intellectual development, is helpful in the early identification of AS.

According to Lainhart (1999), assessing the mood of individuals with AS can be done by observing parts of their affect such as emotions, feelings, and motivations, and then comparing them to their best baseline. Specifically, children with pervasive developmental disorders will look less well, happy, and comfortable than usual when experiencing depression. The author added that such individuals will also show less evidence of pleasure and appear less motivated to participate in usual activities. As Attwood (1998) stated, clinical interviews and self-report scales can be used to assess the nature and degree of mood disorders. Rating scales designed for children and adults with mood disorders can be modified for use with the AS population. The author further noted, for instance, that using a pictorial representation of the gradation in experience and mood can aid those with AS in more easily qualifying their responses. Similarly, a pictorial dictionary of feelings can provide additional cues to be used as measures.

As previously mentioned, there is a tendency for children with AS to exhibit behaviors characteristic of ADHD. Because of this, researchers such as Ghaziuddin et al. (1998) have highlighted the importance of screening children previously diagnosed with ADHD who demonstrate social difficulties, for AS. Similarly, since there is a high
prevalence of depression and anxiety among individuals with AS, particularly as they reach adolescence, Ghaziuddin (2002) asserted that it is critical to screen for comorbid anxiety and depression.

As Foster and King (2003) noted, early intervention and subsequent treatment should focus on enhancing skills in communication, social skills, adaptive functioning, behavior, and academics. As these children progress, vocational training may also be necessary.

According to Klin and Volkmar (1995), individuals with AS will learn skills, concepts, and strategies most effectively in an explicit and rote manner. The authors further stated that it is important to utilize a parts-to-whole approach when giving verbal instructions, and to teach verbal steps in correct sequence. Similarly, Safran et al. (2003) indicated that it is most helpful to provide directions and explanations in small, logical, and methodological steps. Furthermore, the explanations should be concrete, concise, and specific. As the authors added, it is important for individuals working with the AS child to recognize that weaknesses in abstract reasoning will impact the child’s comprehension. Therefore, although the student may be able to adequately verbalize a concept, it may be done without a true understanding.

Due to deficits in sensory integration, Safran et al. (2003) asserted that children with AS benefit from visually based instructional approaches such as illustrations, graphic organizers, written materials, and videos. The authors also noted that techniques to reduce distracting sensory input can include the use of simple items such as earplugs or sunglasses. Additionally, if significant delays in motor or visual-motor skills are present, then services such as occupational therapy and physical therapy can be helpful. Safran et
al. (2003) commented that, at times, poor motor skills may substantially interfere with writing. Consequently, additional accommodations such as prewritten notes or adaptive equipment (such as a word processor) may be needed.

According to Safran et al. (2003), having specific and predictable routines can help to ease transition difficulties for the child with AS. The authors further noted that it is often helpful to provide the student with visual representations of the classroom routine or daily schedule. In addition, due to a rigid pattern of thinking characterized by inflexibility, it is important to notify the child with AS, in advance, of any schedule changes. Attention to these types of factors can help to prevent frustration and distress for the child with AS, as well as resulting behavioral difficulties that may occur.

Safran et al. (2003) indicated that, with the AS student, a lack of social understanding will often result in inappropriate behaviors. Whereas some of the behaviors may be viewed as simply annoying to others, some can be quite disruptive. The authors added that, because students with AS are not readily aware of the unspoken and underlying social rules and expectations, these individuals must be taught to discriminate socially appropriate behaviors from those that are inappropriate, as well as to learn acceptable alternatives to those deemed inappropriate. Safran et al. (2003) indicated that social skills training, structured peer relationships, the use of social stories can be of great help. Klin and Volkmar (1995) have further noted that, since social skills are largely dependent upon communication, it is important to focus on such areas as pragmatic speech/language skills, appropriate nonverbal behavior, decoding the nonverbal behavior of others, perspective-taking skills, and correct interpretation or nonliteral language.
Meyer (1999) asserted that children and adults with AS have difficulty identifying and expressing their own emotions. Even when the individual is able to identify the feeling, he or she is often unable to express it appropriately. The author further stated that individuals with AS tend to lack the appropriate vocabulary needed in order to name, differentiate, and express their emotional needs. Therefore, intervention must focus on helping them expand their repertoire of feeling words and meanings, in order to increase their ability to verbalize experienced emotional states. In addition, Attwood (1998) noted that skill instruction should focus on the recognition of observable and contextual cues that identify the emotional states of others, as well as appropriate responses to such cues. This is important because, the author notes, individuals with AS have difficulty picking up on nonverbal behaviors and cues. Klin and Volkmar (1995) stated that specific areas of focus in nonverbal skills training include the use of gaze in social interactions and monitoring and patterning inflection of voice.

Klin and Volkmar (1995) noted that problem solving strategies can be taught to the child with AS, in order to facilitate his or her ability to handle frequently encountered troublesome situations. The authors further stated that training is likely to be necessary, in order for patients with AS to first recognize given situations as troublesome and to then increase their ability to select the best available learned strategy to use in the particular situation.

Gutstein and Whitney (2002) asserted that instrumental social learning is an important aspect of social competence. The authors defined instrumental social learning as actions taken to achieve a specific objective in a social situation. They added that the learning of behavioral and communication actions in response to specific actions by peers
or in response to one’s own goals leads to the development of social competence.

Therefore, for the child with AS to obtain competence, he or she must learn to associate specific communicative actions with specific results. According to Gutstein and Whitney (2002), such individuals must also learn repertoires of behavior for various setting that will result in increased probability of favorable and desired outcomes.

Safran et al. (2003) contended that, although excessive attention to a specialized interest can hinder learning for the child with AS, if managed appropriately, the interest can also help strengthen the learning process. The researchers commented that the interest may serve as a reward or reinforcement, can be integrated into a lesson to spark interest and attention, and can stimulate conversational practice.

Although it is important to focus on the needs of children and adolescents with AS, it is equally important to recognize the need for adults with this disorder to have the appropriate supports. Perlman (2000), for instance, stated that some adults with AS will respond positively to structured skill training. This type of intervention can helpful in increasing the chances for such individuals to secure and retain employment. The author further contended that many adults with autistic spectrum disorders have been able to improve their social skills, with proper intervention and training, in order to make adequate social and vocational adjustments. Telzow and Koch (2003) have supported this assertion by stating that, with the appropriate supports, such individuals can have successful career outcomes.

Telzow and Koch (2003) further outlined several strategies and approaches for facilitating positive employment experiences. Some of these include rehabilitation counseling, work adjustment training, and supported employment. In addition, for
individuals with AS seeking post-secondary training, supported education may be helpful in achieving educational goals. The authors add that, at the college level, some supported education services may include faculty mentorships, peer support, career counseling, and adjustment counseling, as well as academically based support services typically offered to learning disabled students.

As the current literature review clearly illustrates, it is difficult to formulate the appropriate supports and interventions for adults with AS, if the true nature of their disorder is unrecognized and, therefore, undiagnosed. Ghaziuddin (2002) asserted that because many psychiatric disorders present with similar characteristics as those observed in AS, obtaining a detailed developmental history is important in helping to differentiate AS from other disorders. Such information is also helpful in identifying patients with AS who may have been previously misdiagnosed as suffering from schizophrenia, obsessive-compulsive disorder, and borderline personality disorder.

Multicultural Considerations

Wilder, Dyches, Obiakor, and Algozzine (2004) note that because chances of misdiagnoses are greater among culturally diverse students, it is essential to attend to multicultural issues when assessing students with pervasive developmental disorders. As the authors note, studies of minority students diagnosed with autism have found disproportionate overrepresentations from some groups, including African Americans and Asians/Pacific Islanders. Therefore, as Dyches et al. (2004) stated, it is important that professionals working with culturally diverse students must ensure they are properly diagnosed.
Wilder et al. (2004) noted that behaviors such as aggression, lack of eye contact, poor social interactions, lack of appropriate emotional expression, and poor communication skills may have a cultural context. As the authors added interpreting these and other behaviors symptomatically rather than culturally may lead to misdiagnosis. Furthermore, misdiagnosis may lead to improper and inadequate treatment.

Cultural factors will also affect the willingness for some families to seek treatment for their child. Wilder et al. (2004) noted that African Americans and Latinos are likely to access services for their children with disabilities less frequently than European Americans. In these and other cultures, failure to seek services may be motivated by the desire to avoid the stigma associated with a diagnosis. For instance, according to Raghavan, Weisner, and Patel (1999), some South Asian families may fail to refer their children for services, particularly if they are female. As the authors add, families from this culture may fear the stigma of a diagnosis will result in the inability to arrange a marriage for their daughter.

According to Zionts and Zionts (2003), the inclusion of environmental and instructional variables in the assessment process will help reduce cultural biases. Additionally, it is essential that a bilingual assessment be utilized, in cases where the child’s native language is not English. This is crucial because, as Wilder et al. (2004) stated, if ability assessment is confounded by cultural behaviors or use of a second language, this could result in misdiagnosis. Although there is limited research on effective instructional strategies for multicultural students, the authors further noted that teaching strategies should be matched with areas of strength and difficulty revealed through comprehensive and nonbiased assessment.
Research Questions

1. Despite greater awareness about AS, do school psychologists surveyed have sufficient knowledge about the disorder and related educational needs?

2. Will school psychologists surveyed rate other educational personnel as less knowledgeable than themselves about AS and related educational needs?

3. Will the survey results indicate that students with AS have needs and/or deficits that are not being addressed through their current educational programs?

4. Will the level of discipline problems for students with AS, as rated by the respondents, be high?

5. Will ratings of emotional functioning reflect a tendency for concerns in the areas of anxiety and depression to increase with age?

6. Do demographic factors such as geographic region, setting, and socio-economic level impact the types of services and supports that students with AS receive?
Chapter 3

Methods

Surveys were utilized in the present study, in order to determine the level of knowledge and understanding that school psychologists’ have about Asperger’s syndrome. The surveys were also designed to elicit information about the needs of students with this disorder, along with what services are being offered in order to address these needs. School psychologists completing the survey were further asked to identify the perceived level of knowledge that teachers and other personnel working with students with AS have about the disorder. Further information was sought, through the surveys, about emotional and behavioral difficulties, as well as whether the types of services and supports provided to the student were influenced by demographic factors.

Overview of Research Design

According to Creswell (2003), a survey is a tool designed to measure attitudes, trends, and opinions of a population by studying a sample of the population. Some general characteristics of surveys, as highlighted by Shaughnessy and Zechmeister (1990), are that they involve sampling, the use of predetermined questions for all respondents, and obtaining data through oral or written responses.

As Shaughnessy and Zechmeister (1990) noted, there are also limitations pertaining to the use of surveys. Specifically, surveys are not likely to provide an in-depth examination or insight into the thoughts and feelings of individual respondents. Additionally, as the authors asserted, causal relationships are not likely to be determined through survey research.
Shaughnessy and Zechmeister (1990) have stated that properly conducted surveys can provide valuable information about people’s opinions and attitudes. Newcomer and Triplett (2004) further noted that mail surveys are advantageous because they are relatively inexpensive.

According to Shaughnessy and Zechmeister (1990), although mail surveys represent the most common form of distributing self-administered questionnaires and have the advantage of being completed in a rather brief period of time, there are also drawbacks to utilizing them. The authors indicated that the main disadvantage is a low response rate, which often leads to response bias. For this reason, Cresswell (2003) contended that it is important to identify steps for administering and following up, in order to increase chances of achieving a high response rate. As Newcomer and Triplett (2004) further noted, mail surveys tend to result in response bias because individuals with greater levels of education are more likely to complete and submit the forms than individuals with limited educational training.

The development of a survey instrument first begins with establishing evaluation questions. The next steps include deciding if the survey is necessary, within time and budget constraints, and if it will address the evaluation objectives. Specifically, if the evaluation questions can be obtained through information that already exists or has been collected, the survey is unnecessary. (Newcomer & Triplett, 2004).

One important component of planning a survey is to research and review surveys that address similar issues. Although the information obtained through existing surveys may not provide the exact information for a new study being developed, similar surveys
are useful resources that can provide much assistance in designing a new survey. (Newcomer & Triplett, 2004).

A survey was developed specifically for the present study. The survey was developed to specifically address the research questions of this study, after research of existing surveys failed to identify any that would answer the research questions of the proposed study. Additionally, the search did not yield surveys similar in aim to the present study.

The survey questions included in this survey consisted of those aimed at measuring respondents’ levels of knowledge regarding Asperger’s syndrome, perceptions regarding other staff members’ knowledge about the disorder, the frequency of behavioral and emotional difficulties experienced by students with AS, and the nature and scope of services provided to students with the disorder. Although the majority of the survey items required the respondent to select one response from a group of offered responses, other items asked the respondent to check all responses or categories that are applicable. Some items required the respondent to fill in a response, such as items asking for biographical data.

Survey Administration Procedure

Prior to seeking approval to utilize the survey for the present study, the responsible investigator presented the survey to a panel of colleagues for expert review and feedback. This panel included a group of school psychologists who were not included in the sample. The panel was asked to review the survey for readability, clarity of wording, comprehensiveness of topics addressed, and ambiguity of items. For a final
review, the survey was then presented to the principal investigator’s dissertation committee members. The feedback provided by the expert review panel and committee members was then used to make necessary changes in order to improve the survey. The survey materials were then submitted to the Institutional Review Board (IRB) at the Philadelphia College of Osteopathic Medicine, in order to obtain approval to begin using the survey for the present study.

Participants

After approval was granted from the IRB at Philadelphia College of Osteopathic Medicine, the surveys were mailed to 500 school psychologists working in various areas throughout the United States. The participants were randomly selected from a directory of members belonging to the National Association of School Psychologists (NASP). This enabled the inclusion of participants from various regions of the country, so as not to restrict the sample to one state or region. The sample of interest, school psychologists, was selected because of their profession. Specifically, the role of school psychologist typically involves closely working with children who have educationally related disorders and disabilities. Furthermore, these professionals generally have direct involvement in the assessment and intervention processes. Therefore, it is important to examine the extent of their knowledge about various disorders and related educational needs.

Fagan and Wise (1994) have described a school psychologist as a professional psychological practitioner whose primary function is to bring a psychological perspective to the problems of educators and the clients they serve. As the authors add, this perspective is the result of training in psychological and educational foundations and
specialized preparation, which lead to the provision of comprehensive psychological services.

According to Fagan and Wise (1994), psychoeducational assessment, academic and behavioral interventions, consultation, and research are the services most commonly provided by school psychologists. Watkins, Crosby, and Pearson (2001) have further stated that school psychologists often spend the majority of their time in assessment activities, with the other roles and functions occurring more infrequently.

One role typically encountered by school psychologists in New Jersey is that of case manager. As noted in the New Jersey Administrative Code 6A:14 (2003), which highlights regulations for special education services for that state, the school psychologist works along with a social worker, a learning disabilities teacher consultant and, in some cases, a speech-language specialist, as part of a multidisciplinary team. The code also states that, for each child with a disability, a child study team member must be designated to serve as case manager. Some of the identified case management responsibilities include coordinating the development, monitoring, and evaluation of the individualized education plan (IEP), facilitate communication between school and home, and coordinating the annual review and reevaluation processes. As also highlighted in NJAC 6A:14 (2003), the case manager must also be knowledgeable about the student’s educational program and his or her individual needs, and have an apportioned amount of time dedicated to case management responsibilities.

Although the role of case manager is unique to New Jersey, school psychologists in other states are likely to have some type of direct involvement with students, either through the assessment process or the designing of behavioral interventions. Therefore,
this is a critical population to examine, with respect to their knowledge and perceptions about specific disorders such as Asperger’s Syndrome.

Ethical Considerations

Because the design of the study involved survey research, the study is considered minimal risk research. Nonetheless, it was important to include an informed consent agreement that contains certain components, as well as a statement indicating that, by completing and returning the form, the subject is consenting to participate in the study. According to Jacob and Hartshorne (2003), informed consent should include a description of the nature and purpose of the study, a description of any foreseeable risks, the potential benefits of participation, a description of the extent to which information will be kept confidential, and the name and contact information of the person who can be contacted to answer any questions, and a statement that participation is voluntary and the subject may choose not to participate at any time. The authors add that it is also imperative that participants be told who will have access to the information gathered during the study and what types of information will be shared with others. Since this study involved survey research, it was not necessary to include a description of available alternative treatments. As Shaughnessy and Zechmeister (1990) added, however, it is also important to ensure participants that surveys and individual responses will be anonymous. Upon receiving completed surveys, it was necessary to ensure that the information was not shared with others, except those individuals noted in the survey cover letter that was sent to participants. Jacob and Hartshorne (2003) noted that, when there is a possibility that others may have access to the information, the possibility, along with plans for
protecting confidentiality must be explained to the participants in the informed consent process.

**Measures**

The survey forms were mailed to the randomly selected group of school psychologists, along with a cover letter that provided a brief and general description of why the information was being sought (see appendix B). The nature of the study was described in general terms and not in specific detail, so as not to influence the responses of the participants. The survey also included contact information related to their ability to obtain the results of the study and related information, upon the study’s completion. The contact information was included in order to allow participants to call with any questions or concerns about the forms and study. For the present study, contact persons included the responsible investigator, Kelly Herman, and the principal investigator, Diane Smallwood. Response postcards were included with the survey packets. These cards listed the name and address of the respondent in the return address section. Participants were asked to mail back these response cards separately, so that their name could be removed from the reminder mailing list.

The eight page survey packet included items listed in three separate sections. The first section contained items regarding background and demographic information. This section asked the respondent questions pertaining to years of experience, highest degree obtained, year of degree, work setting, socio-economic status of area where employed, state of residence, and state of employment. In this section, respondents were also asked to indicate the frequency with which they encountered students with AS, how
knowledgeable they felt about the disorder, and where they acquired their knowledge or training about the disorder. With the exception of the questions about year of degree, state of residence, state of employment, and number of children with AS encountered, all items in this section were a forced choice response. When rating themselves on their level of knowledge about AS and related educational needs, the survey respondents were required to select a response using a likert-scale format. Additionally, the survey item regarding where they obtained training and knowledge allowed for the selection of multiple responses.

The second section of the survey contained items that related to student information. In this section, the survey respondents were asked to think of one student with AS with whom they currently or have previously worked, and answer survey items with that student in mind. Survey items in the second section pertained to age of child, age of diagnosis, how the diagnosis was made, comorbid conditions, characteristics of other disorders, weaknesses, referral to special education, educational programming, supports, related services, skills addressed, and discipline. With the exception of items about the student’s age, age of diagnosis, and age at which the child was referred for special education, all of the survey items in this section either required the respondent to select from a list of responses (allowing for more than one response) or from a forced-choice format.

The third section of the survey contained items regarding the perceived knowledge of other professional staff have about AS and related educational needs. Survey respondents were asked to rate various educational professionals, using a likert-scale format, as to how knowledgeable they viewed each professional.
Data Collection

Surveys were sent out to a randomly selected group of 500 members, with the initial goal of receiving up to 200 completed surveys. If not enough surveys were received through the initial mailing, the surveys were to be resent to those participants who had not yet returned them. After that time, if the number of surveys was still low, an additional 300 NASP members were to be randomly selected and surveys will be mailed to them. The cover letter accompanying the survey form included a statement regarding consent procedures. The letter stated that by completing and returning the surveys, the participant was consenting for the information to be utilized in the study. There was also a statement informing participants that completion of survey form was strictly voluntary, as well as a statement ensuring them that responses would be confidential and that the surveys were anonymous, due to the fact that no personally identifiable information was contained on the forms. Furthermore, since the forms were not coded, there was no way of tracing survey forms back to individual respondents. Participants were also notified that access to completed surveys would be limited to the responsible investigator and principal investigator.

In order to ensure a maximum response rate, survey packets were be sent to those who have not yet returned the forms, approximately three weeks after the initial mailing. Several weeks after that, if not enough surveys were returned, an additional 300 surveys were to be mailed. However, due to an overwhelming response rate in the three weeks that followed the initial mailing, no reminder mailing or mailing to additional NASP members was needed.
Data Analysis

The present study involves quantitative analyses of the obtained results, in order to address the previously outlined research questions. Specifically, quantitative analyses included basic descriptive statistics in relation to school psychologists’ responses to the survey items. The study yielded much descriptive data regarding the services and supports afforded to students with AS and their level of functioning in school. In addition, the surveys elicited information about the level of knowledge that school psychologists and other educational personnel have about the disorder, as well as about educational supports and effective interventions. In order to address the research questions, such, frequency tables were generated. Frequency tables were also used to compare areas of concern or degree of need with services provided to students with AS.

The information obtained from the survey was coded on an Excel spreadsheet. The file was then exported to a Statistical Package for Social Sciences (SPSS) data file, using SPSS version 13.0.
Chapter 4

Results

In this chapter, analyses of survey data reflecting school psychologists’ perceptions and knowledge about Asperger’s syndrome are presented. Frequency analyses, cross tabulations, and chi-square tests were utilized for statistical analysis of the data. The data was initially coded on an Excel Spreadsheet and then exported to an SPSS version 13.0 data file.

Five hundred surveys were mailed out to a randomly generated list of school psychologists from the NASP member directory. A second mailing was scheduled to take place approximately 3 weeks after the initial mailing, to selected members who did not yet return the surveys. However, within the 3-week period, 187 surveys were returned. Because of the overwhelming response rate, approval was sought and granted to change the desired number of surveys from as many as 200 to as many as 300. This was done in order to allow for a larger sample for analysis and so as not to exclude any usable surveys. Within the weeks that followed, additional surveys were returned, for a total of 214 completed surveys. Twelve surveys were returned with notes saying the prospective participants could not complete them for various reasons. Therefore, these surveys could not be utilized in the analysis of data. The number of surveys completed, thus, meeting the criteria for data analysis, was 202. Two additional surveys were received after data analysis had been completed. Therefore, these surveys were also not included in the results. As this was considered to be an adequate sample at a 40.4% return rate, a follow-up mailing was not necessary. Furthermore, a separate mailing to an additional 300 members, as had been planned if not enough surveys had been returned after the follow-
Question 1: School Psychologists’ Level of Knowledge of Social, Executive Function, and Academic Deficits With AS

Question 1 sought to determine, within the sample, the perceptions of school psychologists regarding the adequacy of their knowledge about social, executive function, and academic deficits often present with AS. Having sufficient knowledge would indicate subsequent knowledge about educational needs, whereas insufficient knowledge would reflect a lack of knowledge about such needs. Survey respondents were asked to rate themselves, according to a continuum of little or no knowledge, somewhat knowledgeable, very knowledgeable, and expert level. This response format was used for research questions one and two.

The results indicated that, with regard to the social deficits often present in AS, over half of school psychologists surveyed responded that they were very knowledgeable. Whereas approximately one-third indicated that they were somewhat knowledgeable, very few of those surveyed viewed themselves as being expert level or having little or no knowledge. The results for this research question are presented in the first row of Table 1.
### Table 1.

*School Psychologists’ Perceptions About Level of Knowledge of Professional Staff Regarding Social Deficits Related to Asperger’s Syndrome (Percent)*

<table>
<thead>
<tr>
<th>Role</th>
<th>Little or No</th>
<th>Somewhat</th>
<th>Very</th>
<th>Expert</th>
<th>Don’t Know</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>1.5</td>
<td>34.1</td>
<td>59.4</td>
<td>5.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Special education</td>
<td>5.5</td>
<td>55.4</td>
<td>35.1</td>
<td>2.0</td>
<td>0.0</td>
<td>2.0</td>
</tr>
<tr>
<td>General education</td>
<td>51.0</td>
<td>44.5</td>
<td>3.0</td>
<td>0.0</td>
<td>0.0</td>
<td>1.5</td>
</tr>
<tr>
<td>Counselors</td>
<td>12.4</td>
<td>45.4</td>
<td>31.7</td>
<td>2.0</td>
<td>4.0</td>
<td>4.5</td>
</tr>
<tr>
<td>Occupational therapist</td>
<td>5.0</td>
<td>28.7</td>
<td>42.5</td>
<td>3.5</td>
<td>11.9</td>
<td>8.4</td>
</tr>
<tr>
<td>Physical therapist</td>
<td>6.9</td>
<td>31.2</td>
<td>22.8</td>
<td>1.0</td>
<td>16.8</td>
<td>21.3</td>
</tr>
<tr>
<td>Adaptive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical education</td>
<td>12.4</td>
<td>28.2</td>
<td>16.3</td>
<td>0.5</td>
<td>18.8</td>
<td>23.8</td>
</tr>
<tr>
<td>Speech-language</td>
<td>2.5</td>
<td>23.8</td>
<td>49.0</td>
<td>8.8</td>
<td>4.5</td>
<td>11.3</td>
</tr>
<tr>
<td>Enrichment</td>
<td>57.9</td>
<td>22.3</td>
<td>3.0</td>
<td>0.0</td>
<td>10.9</td>
<td>5.9</td>
</tr>
<tr>
<td>Disciplinarian</td>
<td>33.7</td>
<td>49.5</td>
<td>8.3</td>
<td>0.5</td>
<td>4.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>
With regard to the executive function deficits, nearly half of school psychologists surveyed indicated feeling somewhat knowledgeable whereas, over one-third responded that they were very knowledgeable. Less than 10% reported having little or no knowledge and less than 6% reported having expert level knowledge. The results of this research question are presented in the first row of Table 2.
Table 2.

*School Psychologists’ Perceptions About Level of Knowledge of Professional Staff Regarding Executive Function Deficits Related to Asperger’s Syndrome* (Percent)

<table>
<thead>
<tr>
<th></th>
<th>Little or No</th>
<th>Somewhat</th>
<th>Very</th>
<th>Expert</th>
<th>Don’t Know</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>9.4</td>
<td>48.1</td>
<td>37.1</td>
<td>5.4</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Special education</td>
<td>16.3</td>
<td>55.4</td>
<td>21.8</td>
<td>1.5</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>General education</td>
<td>63.3</td>
<td>28.2</td>
<td>2.5</td>
<td>0.0</td>
<td>3.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Counselors</td>
<td>33.6</td>
<td>35.8</td>
<td>15.8</td>
<td>1.5</td>
<td>7.4</td>
<td>5.9</td>
</tr>
<tr>
<td>Occupational therapists</td>
<td>19.3</td>
<td>31.2</td>
<td>22.3</td>
<td>1.5</td>
<td>14.3</td>
<td>11.4</td>
</tr>
<tr>
<td>Physical therapists</td>
<td>21.8</td>
<td>28.7</td>
<td>10.4</td>
<td>1.0</td>
<td>18.3</td>
<td>19.8</td>
</tr>
<tr>
<td>Adaptive physical education</td>
<td>28.2</td>
<td>23.8</td>
<td>5.0</td>
<td>0.5</td>
<td>19.8</td>
<td>22.7</td>
</tr>
<tr>
<td>Speech-language</td>
<td>15.8</td>
<td>30.7</td>
<td>33.2</td>
<td>4.5</td>
<td>6.9</td>
<td>8.9</td>
</tr>
<tr>
<td>Enrichment</td>
<td>64.3</td>
<td>13.9</td>
<td>2.5</td>
<td>0.0</td>
<td>9.9</td>
<td>9.4</td>
</tr>
<tr>
<td>Disciplinarian</td>
<td>51.4</td>
<td>33.2</td>
<td>4.0</td>
<td>0.5</td>
<td>6.9</td>
<td>4.0</td>
</tr>
</tbody>
</table>
In terms of academic deficits, nearly half of individuals surveyed responded that they were somewhat knowledgeable. Similarly, 45% indicated that they felt very knowledgeable, whereas, the least amount of respondents rated themselves as expert level or as having limited knowledge. The results of this research question are presented in the first row of Table 3.
Table 3.

*School Psychologists’ Perceptions About Level of Knowledge of Professional Staff Regarding Academic Deficits Pertaining to Asperger’s Syndrome* (Percent)

<table>
<thead>
<tr>
<th></th>
<th>Little or No</th>
<th>Somewhat</th>
<th>Very</th>
<th>Expert</th>
<th>Don’t Know</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>3.5</td>
<td>46.5</td>
<td>45.0</td>
<td>4.5</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Special education</td>
<td>4.4</td>
<td>42.6</td>
<td>45.5</td>
<td>3.5</td>
<td>1.5</td>
<td>2.5</td>
</tr>
<tr>
<td>General education</td>
<td>38.6</td>
<td>45.5</td>
<td>1.4</td>
<td>0.0</td>
<td>2.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Counselors</td>
<td>22.8</td>
<td>40.6</td>
<td>22.8</td>
<td>2.0</td>
<td>6.9</td>
<td>4.9</td>
</tr>
<tr>
<td>Occupational therapists</td>
<td>14.8</td>
<td>34.2</td>
<td>23.8</td>
<td>2.5</td>
<td>15.3</td>
<td>9.4</td>
</tr>
<tr>
<td>Physical therapists</td>
<td>17.8</td>
<td>28.2</td>
<td>12.9</td>
<td>1.5</td>
<td>18.8</td>
<td>20.8</td>
</tr>
<tr>
<td>Adaptive physical education</td>
<td>24.8</td>
<td>24.2</td>
<td>7.4</td>
<td>1.0</td>
<td>19.3</td>
<td>23.3</td>
</tr>
<tr>
<td>Speech-language</td>
<td>7.9</td>
<td>31.3</td>
<td>41.1</td>
<td>5.4</td>
<td>5.9</td>
<td>8.4</td>
</tr>
<tr>
<td>Enrichment</td>
<td>53.5</td>
<td>23.2</td>
<td>3.0</td>
<td>0.0</td>
<td>11.9</td>
<td>8.4</td>
</tr>
<tr>
<td>Disciplinarian</td>
<td>38.6</td>
<td>42.6</td>
<td>6.9</td>
<td>1.5</td>
<td>6.4</td>
<td>4.0</td>
</tr>
</tbody>
</table>
This researcher wanted to further examine where survey respondents most frequently learned about AS. Survey responses indicated that the majority of school psychologists, or over 75%, obtained knowledge about the disorder through workshops. The second most common source of learned knowledge was independent study, followed by college courses and parents of children with AS. In over half of the respondents, information was obtained through multiple sources. These results are presented in Table 4.

Table 4.

*Where School Psychologists learned about Asperger’s Syndrome (Percent)*

<table>
<thead>
<tr>
<th>University/College</th>
<th>Workshops/Seminars</th>
<th>Independent Study</th>
<th>Parents</th>
<th>Other</th>
<th>Multiple</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15.8</td>
<td>75.2</td>
<td>46.5</td>
<td>27.7</td>
<td>15.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>52.5</td>
</tr>
</tbody>
</table>

Question 2: Level of Knowledge of Educational Staff Regarding Deficits and Effective Interventions for Students With AS

Question 2 sought to determine how school psychologists’ surveyed would rate other educational professionals with regard to their level of knowledge and understanding regarding social, executive function, and academic deficits often present with AS. The participants were asked to rate educational staff, including general education teachers, special education teachers, counselors, speech-language specialists, occupational
therapists, physical therapists, adaptive physical education teachers, enrichment teachers, and school disciplinarians. The reader is referred to Table 1 for these results.

With regard to knowledge of social deficits with AS, the survey results indicated that speech-language specialists and special education teachers were viewed as the most knowledgeable, as compared with other educational staff. Of school psychologists surveyed, nearly half rated speech-language specialists as very knowledgeable. Furthermore, over one-third of the respondents rated special education teachers as very knowledgeable and over half rated this group as somewhat knowledgeable. Counselors were also rated as being among the most knowledgeable, with regard to social deficits and AS, followed by occupational and physical therapists.

The majority of school psychologists surveyed rated general education teachers as having limited knowledge about the social deficits often present with AS (51%). Of those surveyed, nearly 45% indicated that general education teachers were somewhat knowledgeable and only 3% indicated that this group was very knowledgeable about social deficits present with AS. No respondents rated general education teachers as being expert level in this area.

Enrichment teachers were also primarily viewed as having little or no knowledge about the social deficits often present with AS. Of those surveyed, more than half of respondents rated these individuals in this category, whereas, less than one-quarter of respondents rated them as somewhat knowledgeable. Furthermore, only 3% rated enrichment teachers as very knowledgeable about social deficits with AS.

In terms of adaptive physical education teachers, approximately 28% of those surveyed rated these individuals as somewhat knowledgeable about the social deficits
often present with AS. Whereas, about 16% rated adaptive physical education teachers as very knowledgeable, about 12% rated this group as having limited knowledge. Less than 1% of this group was rated as having expert level knowledge in this area.

With regard to school disciplinarians, nearly half of school psychologists surveyed believed that these individuals were somewhat knowledgeable about the social deficits typically present with AS. However, approximately one-third of survey respondents rated school disciplinarians as having limited knowledge.

The school psychologists surveyed were also asked to rate the educational staff regarding their understanding of executive function deficits often present with AS. The reader is referred to Table 2 for these results.

Globally, special education teachers were rated as most frequently being either somewhat knowledgeable about executive function deficits and AS. Of those surveyed, over half rated this group as somewhat knowledgeable, whereas nearly 22% indicated special education teachers were very knowledgeable. Of those surveyed, about 16% indicated that this group had limited knowledge and less than 2% rated them as having expert level knowledge about the executive function deficits often present with AS. Speech-language specialists, however, were rated as higher in the very knowledgeable category, with over one-third of those surveyed rating them as such. Over 30% of the survey respondents rated this group as being somewhat knowledgeable, whereas, nearly 16% rated this group as having limited knowledge. Less than 5% of the respondents rated this group as having expert level knowledge.

In terms of school counselors, over 35% of survey respondents rated them as somewhat knowledgeable. However, over one-third of those surveyed rated this group as
having limited knowledge. Whereas nearly 16% of respondents rated counselors as very knowledgeable with regard to executive function deficits often present with AS, less than 2% rated this group as having expert level knowledge.

With regard to occupational therapists, about 31% of survey respondents rated them as somewhat knowledgeable about the executive function deficits often present with AS. Whereas over 20% of respondents rated occupational therapists as very knowledgeable, slightly less than 20% rated them as having little or no knowledge. Few respondents rated occupational therapists as having expert level knowledge in this area.

Results of ratings on physical therapists indicated that nearly 29% of school psychologists surveyed viewed them as somewhat knowledgeable about the executive function deficits often present with AS. Furthermore, nearly 22% indicated that physical therapists have little or no knowledge, about 10% viewed them as very knowledgeable, and only 1% of respondents rated them as expert level in this area.

Of those surveyed, approximately one-third rated school disciplinarians as being somewhat knowledgeable about the executive function deficits often present with AS. Whereas over half of the respondents rated this group as having little or no knowledge, few respondents rated them as being very knowledgeable or expert level.

In terms of general education teachers, about 28% of school psychologists surveyed rated this group as somewhat knowledgeable about executive function deficits with AS. Of those surveyed, over 60% rated them as having little or no knowledge, whereas few respondents rated them as being very knowledgeable in this area. Furthermore, none of the respondents rated general education teachers as expert level.
Ratings of adaptive physical education teachers indicated that about 28% of respondents viewed them as having little or no knowledge regarding executive function deficits with AS. Of those surveyed, nearly 24% of respondents rated this group as being somewhat knowledgeable, 5% as very knowledgeable, and less than 1% as expert level.

The majority of school psychologists surveyed (over 64%) rated enrichment teachers as having little or no knowledge regarding executive function deficits with AS. Whereas nearly 14% of respondents rated this group as being somewhat knowledgeable, less than 3% rated them as very knowledgeable. None of those surveyed rated enrichment teachers as being expert level in this area.

Survey respondents were also asked to rate educational staff on their understanding of the academic deficits often present with AS. The reader is referred to Table 3 for these results.

Globally, special education teachers were rated the most knowledgeable about academic deficits and AS, with nearly 46% of respondents rating them as very knowledgeable, and nearly 43% rating them as somewhat knowledgeable. Whereas less than 5% of respondents rated special education teachers as having little or no knowledge about academic deficits often present with AS, less than 4% rated them as having expert level knowledge in this area.

Speech-language specialists were also rated highly knowledgeable, with about 41% of respondents viewing them as very knowledgeable regarding academic deficits with AS. Of those surveyed, about 31% rated them as somewhat knowledgeable, nearly 8.0% as having little or no knowledge, and less than 6% as expert level.
With regard to school counselors, nearly 41% of those surveyed rated them as somewhat knowledgeable about academic deficits with AS. Whereas almost 23% rated counselors as very knowledgeable, about 15% rated them as having little or no knowledge. Very few respondents rated this group as having expert level knowledge regarding academic deficits often present with AS.

Of those surveyed, slightly less than half of the respondents rated general education teachers as being somewhat knowledgeable about the academic deficits often present with AS. Furthermore, nearly 39% rated them as having little or no knowledge. However, about 11% of survey respondents rated this group as very knowledgeable. No respondents rated this group as having expert level knowledge.

In terms of physical therapists, about 28% of respondents rated them as somewhat knowledgeable about the academic deficits often present with AS. Whereas nearly 18% rated them as having little or no knowledge, about 13% rated them as very knowledgeable. Few respondents rated this group as having expert level knowledge.

Ratings of school disciplinarians indicated that roughly 43% of respondents viewed them as being somewhat knowledgeable about academic deficits with AS. Of those surveyed, about 39% rated this group as having little or no knowledge. Whereas nearly 7% of those surveyed rated this group as very knowledgeable, none of the respondents rated school disciplinarians as having expert level knowledge.

In terms of adaptive physical education teachers, about one-quarter of respondents rated them this group as having little or no knowledge about academic deficits and AS. A comparable amount of respondents rated this group as somewhat knowledgeable. Of those surveyed, about 7% rated adaptive physical education teachers as very
knowledgeable with regard to academic deficits often present with AS. Few respondents viewed this group as having expert level knowledge. With regard to enrichment teachers, over half of survey respondents rated this group as having little or no knowledge regarding academic deficits with AS. Furthermore, almost one-quarter rated them as somewhat knowledgeable and only 3% as very knowledgeable. None of the respondents rated enrichment teachers as having expert level knowledge in this area.

Research question 2 also sought to determine how school psychologists surveyed would rate other educational staff on their level of knowledge about effective social/behavioral and academic interventions for students with AS. The results pertaining to knowledge of effective social/behavioral interventions are presented in table 5.
### School Psychologists’ Perceptions About Level of Knowledge of Professional Staff Regarding Effective Social/Behavioral Interventions For Students With AS (Percent)

<table>
<thead>
<tr>
<th></th>
<th>Little or No</th>
<th>Somewhat</th>
<th>Very</th>
<th>Expert</th>
<th>Don’t Know</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special education</td>
<td>7.9</td>
<td>49.0</td>
<td>34.1</td>
<td>5.0</td>
<td>1.0</td>
<td>3.0</td>
</tr>
<tr>
<td>General education</td>
<td>52.0</td>
<td>39.6</td>
<td>4.9</td>
<td>0.0</td>
<td>1.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Counselors</td>
<td>17.3</td>
<td>40.1</td>
<td>30.7</td>
<td>2.0</td>
<td>5.4</td>
<td>4.5</td>
</tr>
<tr>
<td>Occupational therapists</td>
<td>14.8</td>
<td>36.1</td>
<td>23.3</td>
<td>2.5</td>
<td>13.4</td>
<td>9.9</td>
</tr>
<tr>
<td>Physical therapists</td>
<td>19.8</td>
<td>32.2</td>
<td>7.9</td>
<td>1.0</td>
<td>17.3</td>
<td>21.8</td>
</tr>
<tr>
<td>Adaptive physical education</td>
<td>24.3</td>
<td>26.7</td>
<td>5.9</td>
<td>1.0</td>
<td>19.8</td>
<td>22.3</td>
</tr>
<tr>
<td>Speech-language</td>
<td>8.9</td>
<td>33.7</td>
<td>36.6</td>
<td>6.9</td>
<td>5.0</td>
<td>8.9</td>
</tr>
<tr>
<td>Enrichment</td>
<td>52.4</td>
<td>20.8</td>
<td>3.0</td>
<td>0.0</td>
<td>12.9</td>
<td>10.9</td>
</tr>
<tr>
<td>Disciplinarian</td>
<td>43.1</td>
<td>37.1</td>
<td>6.9</td>
<td>1.0</td>
<td>6.9</td>
<td>5.0</td>
</tr>
</tbody>
</table>
In terms of knowledge of effective social/behavioral interventions for students with AS, the special education teachers were rated as the most knowledgeable. Of school psychologists surveyed, almost half rated this group as being somewhat knowledgeable about effective social/behavioral interventions for students with AS. Furthermore, over one-third of respondents rated special education teachers as very knowledgeable, nearly 8% as having little or no knowledge, and 5% as expert level in this area.

School counselors were also viewed as fairly knowledgeable with regard to effective social/behavior interventions. Of those surveyed, about 40% rated this group as somewhat knowledgeable, nearly 31% as very knowledgeable, about 17% as having little or no knowledge, and 2% as expert level in this area.

With regard to speech-language specialists, almost 37% of respondents rated them as very knowledgeable about effective social/behavioral interventions with AS. Of those surveyed, over one-third rated this group as being somewhat knowledgeable, almost 9% as having little or no knowledge, and nearly 7% as expert level in this area.

In terms of occupational therapists, about 36% of respondents viewed them as somewhat knowledgeable about effective social/behavioral interventions with AS. Of those surveyed, about 23% rated them as very knowledgeable, and nearly 15% as having little or no knowledge. Few respondents rated occupational therapists as having expert level knowledge in this area.

Of those surveyed, approximately 43% viewed school disciplinarians as having little or no knowledge about effective social/behavioral interventions with AS. Whereas nearly 38% rated them as somewhat knowledgeable, almost 7% rated them as very knowledgeable, and only 1% rated them as expert level in this area.
With regard to physical therapists, nearly one-third of those surveyed rated this group as being somewhat knowledgeable about effective social/behavioral interventions for students with AS. Furthermore, nearly 20% of respondents rated them as having limited knowledge. Whereas, nearly 8% of respondents rated this group as very knowledgeable, only 1% of those surveyed were rated as having expert level knowledge.

In terms of general education teachers, over half of those surveyed viewed this group as having little or no knowledge about effective social/behavioral interventions for students with AS. Furthermore, nearly 40% of respondents rated them as being somewhat knowledgeable and only 5% rated them as very knowledgeable. None of the respondents rated general education teachers as having expert level knowledge in this area.

Of those surveyed, nearly 27% rated adaptive physical education teachers as being somewhat knowledgeable about effective social/behavioral interventions for students with AS. Furthermore, close to one-quarter of respondents rated adaptive physical education teachers as having little or no knowledge. Whereas nearly 8% rated this group as very knowledgeable, 1% rated this group as having expert level knowledge.

With regard to enrichment teachers, over half of the respondents rated them as having little or no knowledge about effective social/behavioral interventions. Over 20% of those surveyed rated this group as somewhat knowledgeable, whereas only 3% rated them as very knowledgeable. None of the respondents rated enrichment teachers as having expert level knowledge regarding effective social/behavioral interventions.

Survey respondents were also asked to rate other educational staff on their level of knowledge about effective academic interventions for students with AS. The results are presented in Table 6.
Table 6.

School Psychologists’ Perceptions About Level of Knowledge of Professional Staff Regarding Effective Academic Interventions Pertaining to Asperger’s Syndrome

(Percent)

<table>
<thead>
<tr>
<th></th>
<th>Little or No</th>
<th>Somewhat Know</th>
<th>Very Expert</th>
<th>Don’t Know</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special education</td>
<td>5.9</td>
<td>44.6</td>
<td>40.6</td>
<td>5.4</td>
<td>2.0</td>
</tr>
<tr>
<td>General education</td>
<td>37.9</td>
<td>49.5</td>
<td>6.4</td>
<td>0.5</td>
<td>4.5</td>
</tr>
<tr>
<td>Counselors</td>
<td>30.2</td>
<td>43.1</td>
<td>14.8</td>
<td>0.5</td>
<td>6.9</td>
</tr>
<tr>
<td>Occupational therapists</td>
<td>19.8</td>
<td>38.6</td>
<td>15.8</td>
<td>1.0</td>
<td>13.9</td>
</tr>
<tr>
<td>Physical therapists</td>
<td>23.8</td>
<td>28.2</td>
<td>8.9</td>
<td>0.5</td>
<td>16.8</td>
</tr>
<tr>
<td>Adaptive physical education</td>
<td>30.2</td>
<td>21.8</td>
<td>5.9</td>
<td>0.0</td>
<td>20.8</td>
</tr>
<tr>
<td>Speech-language</td>
<td>9.4</td>
<td>37.1</td>
<td>33.7</td>
<td>5.0</td>
<td>7.4</td>
</tr>
<tr>
<td>Enrichment</td>
<td>54.9</td>
<td>18.8</td>
<td>3.5</td>
<td>0.0</td>
<td>12.9</td>
</tr>
<tr>
<td>Disciplinarian</td>
<td>46.0</td>
<td>37.1</td>
<td>5.0</td>
<td>1.0</td>
<td>6.9</td>
</tr>
</tbody>
</table>
With regard to knowledge about effective academic interventions for students with AS, the survey results indicated that special education teachers were viewed as the most knowledgeable. Of those surveyed, nearly 45% rated special education teachers as being somewhat knowledgeable and almost 41% as very knowledgeable. Nearly 6% of respondents rated this group as having limited knowledge, whereas about 5% rated special education teachers as having expert level knowledge in this area.

Speech-language specialists were also viewed as fairly knowledgeable about effective academic interventions. Of those surveyed, approximately 37% rated this group as somewhat knowledgeable. Whereas one-third of respondents rated this group as very knowledgeable, only 5% rated them as expert level in this area. Furthermore, less than 10% of those surveyed rated speech-language specialists as having limited knowledge regarding effective academic interventions for students with AS.

With regard to counselors, about 43% of respondents rated them as somewhat knowledgeable about effective academic interventions for students with AS. Whereas approximately 30% rated them as having little or no knowledge, less than 15% rated them as very knowledgeable in this area. Few respondents rated counselors as having expert level knowledge about effective interventions for students with AS.

In terms of general education teachers, nearly half of the respondents rated this group as somewhat knowledgeable regarding effective academic interventions. However, nearly 38% rated them as having little or no knowledge. Less than 7% of those surveyed rated general education teachers as very knowledgeable and less than 1% as having expert level knowledge about academic interventions with AS.
With regard to occupational therapists, nearly 39% of school psychologists surveyed rated this group as somewhat knowledgeable about effective academic interventions. Whereas about 20% of respondents rated this group as having little or no knowledge, nearly 16% rated them as very knowledgeable. Few respondents rated occupational therapists as having expert level knowledge.

Of those surveyed, 46% rated school disciplinarians as having little or no knowledge about effective academic interventions for students with AS. Furthermore, approximately 37% of respondents rated them as being somewhat knowledgeable, 5% as very knowledgeable, and 1% as expert level in this area.

With regard to physical therapists, approximately 28% of respondents rated this group as somewhat knowledgeable about effective academic interventions. Whereas nearly 24% of respondents rated them as having little or no knowledge, less than 9% rated them as being very knowledgeable. Less than 1% of those surveyed rated physical therapists as having expert level knowledge in this area.

Of those surveyed, approximately 30% rated adaptive physical education teachers as having little or no knowledge about effective academic interventions for students with AS. Whereas nearly 22% of respondents rated them as being somewhat knowledgeable, about 6% rated them as very knowledgeable. None of the respondents rated adaptive physical education teachers as having expert level knowledge in this area.

In terms of enrichment teachers, over half of respondents rated this group as having little or no knowledge about effective academic interventions. Of those surveyed, nearly 19% rated them as being somewhat knowledgeable and less than 4% rated them as
very knowledgeable. None of the respondents rated enrichment teachers as having expert
level knowledge about effective academic interventions for students with AS.

*Question 3: Addressing the Deficits and Needs of Students with AS Adequately Through
Social Supports*

The purpose of research question 3 was to determine, based on school
psychologists’ responses, if the needs and deficits of students with AS were adequately
being addressed through their educational programs. This was partly determined by
comparing survey items identifying weaknesses or areas of need with survey items
reflecting various social supports provided to the student. The respondent was asked to
select, from a predetermined list, all of the supports that were given. The list of supports
was social skills training, coaching from a teacher or aide, peer coaching, nonverbal cues,
verbal cues, or other. This list of supports was compared with the severity of need, as
determined by the number of weaknesses. These weaknesses were decision making,
perspective taking, anger management, emotional regulation, self control,
attention/concentration, labeling/identifying emotions in self and others, decoding
nonverbal behavior in others, appropriate use of nonverbal behavior, eye contact, conflict
resolution, peer cooperation, social communication, turn taking, interpersonal skills, and
peer interaction.

In order to determine the severity of need, the number of weaknesses was broken
down into four categories. When the number of weaknesses identified was one to four,
the student was labeled as having a low level of severity. The student was classified as
moderate when they were identified as having five to eight weaknesses. The student was
COMPLEX NATURE OF ASPERGER’S SYNDROME

classified as high when weaknesses were 9 to 12 and as very high when the number of weakness was 13 to 16. The results are presented in Table 7.

Table 7.

*Likelihood of Receiving Social Supports by Severity of Need (Percent)*

<table>
<thead>
<tr>
<th>Support</th>
<th>Number of Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (1 to 4)</td>
</tr>
<tr>
<td>Social Skills</td>
<td>38.5</td>
</tr>
<tr>
<td>Coaching</td>
<td>38.5</td>
</tr>
<tr>
<td>(teacher, aide)</td>
<td></td>
</tr>
<tr>
<td>Peer Coaching</td>
<td>15.4</td>
</tr>
<tr>
<td>Nonverbal Cues</td>
<td>23.1</td>
</tr>
<tr>
<td>Verbal Cues</td>
<td>46.2</td>
</tr>
<tr>
<td>Other</td>
<td>0.0</td>
</tr>
</tbody>
</table>

The results indicated that none of the students with AS who were identified by survey respondents as having none of the aforementioned weaknesses were receiving social skills training as part of their educational program. Whereas, nearly 39% of students with AS with a low number of the aforementioned weaknesses received social skills training, the majority of students did not receive focus on these skills. Furthermore, for students with a moderate number of the previously mentioned weaknesses, 58% of survey respondents reported the student’s program included social skills training. For students with a high number of the weaknesses, 78% of the respondents indicated that the
students received social skills training as part of their program. Furthermore, for students with a very high number of the weaknesses, approximately 81% received social skills instruction. However, nearly 19% of students with a very high number of weaknesses did not receive social skills training.

In terms of coaching from a teacher or aide, none of the respondents indicated that this was provided for students who did not evidence any of the aforementioned weaknesses. For students demonstrating a low number of the weaknesses, approximately 39% of the respondents indicated that coaching from a teacher or aide was being provided as part of the student’s educational program, whereas nearly 62% reported that it was not. For students with a moderate amount of the weaknesses, almost 54% of the survey respondents indicated that coaching from a teacher or aide was provided, whereas about 46% reported that this was not the case. For students evidencing a high number of weaknesses, 65.5% of the respondents indicated that coaching from a teacher or aide was provided, whereas over one-third reported that this support was not provided. For students with a very high number of weaknesses, nearly 72% of the respondents indicated that this support was part of the student’s program. However, approximately 28% indicated that this support was not provided.

In terms of peer coaching, none of the respondents who indicated that the student with AS who did not evidence any of the aforementioned weaknesses reported that this was provided in the educational program. For those students with a low number of weaknesses, approximately 15% of respondents reported that peer coaching was part of the educational program. For students exhibiting a moderate number of weaknesses, less than 9% of survey respondents indicated that this support was being provided, whereas
for those students with a high number of weaknesses, less than 4% of survey respondents indicated that peer coaching was provided. For students with a very high number of weaknesses, less than 13% of the respondents indicated that this support was utilized.

In terms of nonverbal cues, none of the students with AS who were reported not to have any of the previously mentioned weaknesses were identified as receiving this as a support within their educational programs. For those students evidencing a low number of weaknesses, approximately 23% of respondents reported that the student’s educational program included the use of nonverbal cues. For students with a moderate number of weaknesses, over one-third of the respondents reported that nonverbal cues were utilized. For those students with a high number of weaknesses, less than half of those surveyed indicated that the student was given nonverbal cues. For students with a high number of weaknesses, nearly two-thirds of those surveyed indicated that nonverbal cues were being utilized.

None of the students who were reported as not displaying evidence of any of the previously identified weaknesses were reported to have verbal cues as a support in their program. For students evidencing a low number of weaknesses, less than half of the respondents reported that the educational program included the use of verbal cues. For students with a moderate number of weaknesses, nearly 38% of survey respondents indicated that verbal cues were used as a support. For students evidencing a high number of weaknesses, approximately 56% of respondents reported that verbal cues were utilized. Furthermore, for students with a high number of weaknesses, approximately 81% of survey respondents indicated that verbal cues were used within the student’s educational program.
None of the students reported as not evidencing any of the previously mentioned weaknesses were receiving other types of social supports as part of their educational program. Additionally, none of the students with a low number of weaknesses were reported to be receiving other types of supports. For students with a moderate number of weaknesses, less than 12% of the survey respondents indicated that the educational program includes other social supports, whereas less than 5% indicated that other supports were provided for students with a high number of weaknesses. For students exhibiting a very high number of weaknesses, less than 10% of respondents reported that the student was receiving other supports.

The number of previously mentioned weaknesses was also compared with what types of specific social skills were addressed in the student’s program. These social skills included conflict resolution, experience sharing, reciprocal communication and interaction, social referencing, appropriate use of nonverbal behavior, interpreting nonverbal behavior in others, turn taking, perspective taking, and other. The results are presented in Table 8.
Table 8.

*Skills Addressed in Social Skills Training by Severity of Need (Percent)*

<table>
<thead>
<tr>
<th>Skill</th>
<th>Number of Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (1 to 4)</td>
</tr>
<tr>
<td>Conflict Resolution</td>
<td>30.8</td>
</tr>
<tr>
<td>Experience Sharing</td>
<td>15.4</td>
</tr>
<tr>
<td>Social Referencing</td>
<td>30.8</td>
</tr>
<tr>
<td>Reciprocal</td>
<td>30.8</td>
</tr>
<tr>
<td>Appropriate use of</td>
<td>7.7</td>
</tr>
<tr>
<td>nonverbal behavior</td>
<td></td>
</tr>
<tr>
<td>Interpreting</td>
<td>23.1</td>
</tr>
<tr>
<td>nonverbal behavior</td>
<td></td>
</tr>
<tr>
<td>Turn taking</td>
<td>23.1</td>
</tr>
<tr>
<td>Perspective taking</td>
<td>15.4</td>
</tr>
<tr>
<td>Other</td>
<td>0.0</td>
</tr>
</tbody>
</table>
None of the respondents reporting that the student did not demonstrate any of the previously mentioned weaknesses identified the student as receiving instruction in conflict resolution skills. Survey results further indicated that, of students with a low number of the previously mentioned weaknesses, approximately 31% of the respondents indicated that the students were working on conflict resolution skills. For students with a moderate number of weaknesses, approximately 20% of respondents reported that conflict resolution was an area of focus. For students with a high number of weaknesses, less than half of those surveyed indicated that conflict resolution skills were being addressed. For students with a high number of the weaknesses, 50% of the respondents reported that conflict resolution skills were being addressed.

None of the respondents who reported an absence of weaknesses indicated that the student with AS was receiving focus on experience sharing as part of the educational program. For those students with a low number of identified weaknesses, about 15% indicated that experience sharing was an area of focus. For students with a moderate number of weaknesses, less than 9% reported that experience sharing was addressed. For students with a high number of weaknesses, less than a quarter of the survey respondents reported that experience-sharing was an area of focus, whereas approximately 31% reported that this was an area of focus for students with a very high number of weaknesses.

Of those surveyed, none of the respondents reporting that the student with AS did not have any of the aforementioned weaknesses indicated that reciprocal communication and interaction was an area of focus. For students with a low number of weaknesses, approximately 31% of respondents indicated that this area was being addressed. For
students with a moderate number of weaknesses, less than half of those surveyed reported that reciprocal communication and interaction was an area of focus. For students with a high number of weaknesses, nearly two-thirds of respondents indicated that this area was being addressed, whereas a comparable amount of respondents indicated that this was an area of focus for students with a very high number of weaknesses.

Of those survey respondents not reporting any of the aforementioned weaknesses for the student with AS, none indicated that social referencing was an area of focus within the student’s program. For students with a low number of reported weaknesses, nearly 31% of survey respondents indicated that social referencing was an area of focus. For students with a moderate number of weaknesses, nearly half of the respondents reported that this skill was addressed in the student’s educational program. For students with a high number of weaknesses, approximately 64% of those surveyed reported that social referencing was an area of focus. For students with a very high number of weaknesses, nearly two-thirds of those surveyed reported that social referencing was addressed.

None of the respondents who reported that the student with AS exhibited none of the aforementioned weaknesses indicated that appropriate use of nonverbal behavior in others was being addressed in the educational program. For students with a low number of weaknesses, less than 8% of those surveyed reported that this was an area of focus. For students with a moderate number of weaknesses, 13% of survey respondents indicated that appropriate use of nonverbal behavior was addressed. For students with a high number of weaknesses, nearly one-third of those surveyed indicated that this area was
addressed. For students with a very high number of weaknesses, approximately 56% of respondents reported that appropriate use of nonverbal behavior was an area of focus.

None of the respondents who reported that the student with AS did not exhibit any of the aforementioned weaknesses indicated that interpreting nonverbal behavior was being addressed in the educational program. For students with a low number of weaknesses, approximately 23% of those surveyed reported that this was an area of focus. For students with a moderate number of weaknesses, approximately 22% of survey respondents indicated that interpreting nonverbal behavior was addressed. For students with a high number of weaknesses, 54% of those surveyed indicated that this area was addressed, furthermore, almost 63% of those surveyed reported that interpreting nonverbal behavior was an area of focus for students with a very high number of weaknesses.

Of those surveyed, none of the respondents failing to report any of the aforementioned weaknesses indicated that the student with AS was receiving focus on turn-taking. For students with a low number of weaknesses, about 23% of respondents indicated that this skill was being addressed. For students with a moderate number of weaknesses, a comparable amount of those surveyed reported that turn-taking was an area of focus. For students with a high number of weaknesses, approximately 39% of respondents indicated that this skill was being addressed. For students with a very high number of weaknesses, over two-thirds of those surveyed indicated that the student’s program addressed turn-taking skills.

None of the respondents who reported that the student with AS did not exhibit any of the aforementioned weaknesses indicated that perspective taking was being addressed
in the educational program. Of students with a low number of weaknesses, approximately 15% of those surveyed reported that this was an area of focus. For students with a moderate number of weaknesses, approximately 39% of survey respondents indicated that perspective taking was addressed. For students with a high number of weaknesses, nearly 59% of those surveyed indicated that this area was addressed. Furthermore, for students with a very high number of weaknesses, approximately 53% of respondents reported that perspective taking was an area of focus.

Of those surveyed, none of the respondents failing to report any of the aforementioned weaknesses or a low number of weaknesses indicated that the student with AS was receiving focus on other social skills areas. For students with a moderate number of weaknesses, nearly 3% of those surveyed reported that there were other areas of focus. For students with a high or very high number of weaknesses, none of the survey respondents reported that the student with AS was receiving focus on other social skills.

The number of weaknesses was also compared with areas of focus in counseling. Respondents were asked to indicate whether the following were areas of focus in counseling: appropriate use of nonverbal behavior, decoding nonverbal behavior of others, decision making, labeling/identifying emotions in self and others, perspective taking, cognitive restructuring, attribution retraining, exploring and examining alternatives (to address dichotomous thinking), anger management, emotional regulation, increasing self control/behavioral regulation, correcting cognitive distortions and dysfunctional beliefs, and other. These responses were compared with the number of previously mentioned weaknesses identified for the child with AS. The results are presented in Table 9.
### Table 9.

*Skills Addressed in Counseling by Severity of Need (Percent)*

<table>
<thead>
<tr>
<th>Skill</th>
<th>Number of Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (1 to 4)</td>
</tr>
<tr>
<td>Appropriate use of nonverbal behavior</td>
<td>7.7</td>
</tr>
<tr>
<td>Decoding nonverbal behavior</td>
<td>7.7</td>
</tr>
<tr>
<td>Decision-making</td>
<td>23.1</td>
</tr>
<tr>
<td>Labeling/identifying emotions</td>
<td>7.7</td>
</tr>
<tr>
<td>Perspective-taking</td>
<td>7.7</td>
</tr>
<tr>
<td>Cognitive restructuring</td>
<td>0.0</td>
</tr>
<tr>
<td>Attribution retraining</td>
<td>0.0</td>
</tr>
<tr>
<td>Exploring/examining alternatives</td>
<td>0.0</td>
</tr>
<tr>
<td>Anger management</td>
<td>7.7</td>
</tr>
<tr>
<td>Emotional regulation</td>
<td>7.7</td>
</tr>
<tr>
<td>Increasing self-control/behavior regulation</td>
<td>15.4</td>
</tr>
<tr>
<td>Correcting cognitive distortions</td>
<td>0.0</td>
</tr>
<tr>
<td>Other</td>
<td>7.7</td>
</tr>
</tbody>
</table>
None of the respondents indicating that the student with AS did not exhibit any of the aforementioned weaknesses reported that the student was receiving focus on appropriate use of nonverbal behavior in counseling. Of students with a low number of weaknesses, approximately 8% of survey respondents reported that this area was being addressed. For students with a moderate number of weaknesses, respondents indicated that 13% were receiving focus on this area. For students with a high number of identified weaknesses, nearly 21% reported that appropriate use of nonverbal behavior was an area of focus in counseling. For students with a very high number of weaknesses, nearly 44% of survey respondents reported that this skill was being addressed.

None of the respondents who indicated that the student did not exhibit any of the aforementioned weaknesses reported that decoding nonverbal behavior in others was an area of focus in counseling. Of students with a low number of weaknesses, 8% reported that this skill was being addressed. Of students with a moderate number of weaknesses, about 17% of respondents indicated that decoding nonverbal behavior in others was being addressed. For students with a high number of weaknesses, 31% of respondents indicated that this was an area of focus in counseling. For students with a very high number of weaknesses, over half of the respondents reported that decoding nonverbal behavior in others was being addressed in counseling.

None of the respondents indicating that the student with AS did not exhibit any of the previously mentioned weaknesses reported that decision making was an area of focus in counseling. For students with a low number of identified weaknesses, approximately 23% of survey respondents indicated that this was an area of focus. For students with a moderate number of weaknesses, nearly 15% of respondents reported that decision
making was being addressed in counseling. For students with a high number of weaknesses, 31% of survey respondents reported that this was an area of focus, whereas nearly 41% reported that decision making was being addressed in counseling, for students with a very high number of weaknesses.

None of the respondents who reported that the student with AS did not have any of the previously mentioned weaknesses indicated that labeling and identifying emotions in self and others was being addressed in counseling. For students with a low number of identified weaknesses, approximately 8% of respondents indicated that this was an area of focus. For students with a moderate number of weaknesses, approximately 17% reported that this area was being addressed in counseling. For students with a high number of weaknesses, over one-quarter of survey respondents reported that labeling and identifying emotions in self and others was being addressed through counseling. For students with a very high number of weaknesses, over half of the respondents indicated that this area was being addressed.

None of the respondents who reported that the student did not exhibit any of the aforementioned weaknesses reported that perspective-taking was an area of focus for the student in counseling. For students with a low number of weaknesses, nearly 8% of survey respondents indicated that this was an area of focus. For students with a moderate number of weaknesses, approximately 17% reported that perspective taking was being addressed in counseling. For students with a high number of weaknesses, approximately one-third of respondents reported that this was an area of focus, whereas. For students with a very high number of weaknesses, half of survey respondents reported that perspective taking was being addressed in counseling.
None of the respondents who indicated that the student did not exhibit any of the aforementioned weaknesses reported that cognitive restructuring was an area of focus for the student in counseling. Additionally, for students with a low number of identified weaknesses, none of the respondents indicated that this area was being addressed. For students with a moderate number of weaknesses, about 4% of survey respondents reported that cognitive restructuring was being addressed through counseling, whereas over 95% indicated that it was not. For students with a high number of weaknesses, nearly 13% of respondents reported that this was an area of focus and about 87% indicated it was not. For students with a very high number of weaknesses, one-quarter indicated that cognitive restructuring was being addressed in counseling and three-quarters reported that this was not an area of focus in counseling.

None of the respondents who indicated that the student did not exhibit any of the aforementioned weaknesses reported that attribution retraining was an area of focus for the student in counseling. Furthermore, for students with a low number of identified weaknesses, none of those surveyed indicated that this was an area of focus. For students with a moderate number of weaknesses, less than 2% indicated that attribution retraining was being addressed through counseling and nearly 99% reported that it was not. For students with a high number of weaknesses, none of the respondents indicated that this was an area of focus. For students with a very high number of weaknesses, approximately 6% reported that attribution retraining was being addressed in counseling and nearly 94% indicated it was not being addressed.

None of the respondents who indicated that the student did not exhibit any of the aforementioned weaknesses reported that exploring and examining alternatives, in order
to address dichotomous thinking, was an area of focus for the student in counseling. In addition, for those students with a low number of identified weaknesses, none of the survey respondents indicated that this skill was being addressed. For students with a moderate number of weaknesses, 13% of survey respondents indicated that this was an area of focus in counseling and 87% reported it was not. For students with a high number of weaknesses, about 18% of respondents reported that exploring and examining alternatives was being addressed through counseling and nearly 82% indicated that this area was not being addressed. For students with a very high number of weaknesses, approximately 31% of those surveyed indicated that this was an area of focus, whereas nearly 69% reported that it was not.

None of the respondents who indicated that the student did not exhibit any of the aforementioned weaknesses reported that anger management was an area of focus for the student in counseling. For students with a low number of weaknesses, about 8% of survey respondents indicated that this was an area of focus and approximately 92% indicated that it was not. For students with a moderate number of weaknesses, 13% of those surveyed reported that anger management was being addressed through counseling and 87% indicated that it was not. For students with a high number of weaknesses, nearly 12% of respondents reported that this area was being addressed, whereas almost 89% indicated that it was not. For students with a very high number of weaknesses, half of respondents reported that anger management was being addressed through counseling and half indicated that this was not an area of focus.

None of the respondents who indicated that the student did not exhibit any of the aforementioned weaknesses reported that emotional regulation was an area of focus for
the student in counseling. For students with a low number of identified weaknesses, nearly 8% of those surveyed indicated that this was an area of focus and approximately 92% indicated that it was not. For students with a moderate number of weaknesses, approximately 26% of respondents reported that this area was being addressed and nearly 74% reported that it was not. For students with a high number of weaknesses, approximately 17% of survey respondents indicated that emotional regulation was an area of focus in counseling and nearly 83% reported that it was not. For students with a very high number of weaknesses, about 56% indicated that this was an area of focus, whereas nearly 44% reported that it was not.

None of the respondents who indicated that the student did not exhibit any of the previously mentioned weaknesses reported that increasing self-control or behavior regulation was an area of focus for the student in counseling. For students with a low number of weaknesses, about 15% of respondents indicate that this skill was being addressed and nearly 85% indicated it was not. For students with a moderate number of weaknesses, almost 12% of survey respondents reported that increasing self-control or behavior regulation was an area of focus in counseling and about 88% reported that it was not. For students with a high number of weaknesses, approximately 24% of respondents indicated that this area was being addressed, whereas nearly 76% reported it was not. For students with a very high number of weaknesses, about 23% reported that this was an area of focus in counseling and nearly 77% reported that it was not being addressed.

None of the respondents who indicated that the student did not exhibit any of the aforementioned weaknesses reported that correcting cognitive distortions and
dysfunctional beliefs was an area of focus for the student in counseling. Furthermore, for students with a low number of identified weaknesses, none of the respondents indicated that this area was being addressed. For students with a moderate number of weaknesses, nearly 9% of survey respondents indicated that correcting cognitive distortions and dysfunctional beliefs was an area of focus in counseling and approximately 91% reported that it was not being addressed. For students with a high number of weaknesses, about 17% of respondents indicated that this was an area of focus and approximately 82% indicated it was not. For students with a very high number of weaknesses, about 14% of those surveyed reported that correcting cognitive distortions and dysfunctional beliefs was being addressed in counseling, whereas nearly 86% indicated that this was not an area of focus.

None of the respondents who indicated that the student did not exhibit any of the previously mentioned weaknesses reported that there were other skill areas being addressed through counseling. For students with a low number of identified weaknesses, about 8% of respondents reported other areas of focus in counseling and approximately 92% indicated that there were no other areas being addressed. For students with a moderate number of weaknesses, 13% of those surveyed reported other areas being addressed through counseling, whereas 87% indicated that this was not the case. For students with a high number of weaknesses, approximately 9% of survey respondents reported other areas being addressed and nearly 91% indicated there were no other areas of focus. For students with a very high number of weaknesses, approximately 9% of respondents indicated that other skill areas were being addressed in counseling and nearly 91% indicated there were no other areas of focus.
Question 4: Level of Discipline Problems for Students With AS

Research question 4 sought to determine the level of discipline problems exhibited by students with AS, based on school psychologists’ responses to a survey item asking them to rate a student with AS, with whom they have worked, on the frequency of discipline problems. Respondents were asked to rate the student on a continuum from never to very often. The response format included never, rarely, occasionally, somewhat often and very often. The results are presented in Table 10.

Table 10.

<table>
<thead>
<tr>
<th>Frequency of Discipline Problems (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>17.3</td>
</tr>
</tbody>
</table>

Of those surveyed, nearly 36% indicated there were rarely discipline problems for the student with AS. Furthermore, about 29% indicated that discipline problems occurred occasionally, about 17% indicated that they never occurred, and nearly 14% responded that discipline problems occurred somewhat often. Nearly 3% of survey respondents indicated that the student with AS experienced discipline problems very often.

Although not part of research question 4, respondents were further asked whether the student with AS received modified discipline as part of their educational program. The results are displayed in Table 11.
Table 11.

*Modified Discipline (Percent)*

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>50.0</td>
<td>50.0</td>
<td></td>
</tr>
</tbody>
</table>

Of school psychologists surveyed, half indicated that the student’s discipline was modified. The remaining half responded that discipline was not modified.

*Question 5: Diagnoses of Depression and Anxiety Related to Age.*

For the first part of research question 5, the purpose of research question was to determine if diagnoses of depression and anxiety would show an increase with age. Respondents were asked to respond as to whether the student had received diagnoses of whether depression and anxiety, in two separate questions. For both items, responses were coded with a 1 if depression and/or anxiety were checked, and 0 if the disorders were not selected. For analysis of this question, the responses to these items were compared with a question asking them to the state the child’s current age or age at which they worked with the particular child. This item was a fill-in response that asked them to list the child’s chronological age. The results are presented in Table 12.
Table 12.

*Frequency of Diagnosis of Depression and Anxiety at Each Age Level (Percent)*

<table>
<thead>
<tr>
<th>Age</th>
<th>Depression</th>
<th>Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>4</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>5</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>6</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>7</td>
<td>0.0</td>
<td>20.0</td>
</tr>
<tr>
<td>8</td>
<td>4.0</td>
<td>36.0</td>
</tr>
<tr>
<td>9</td>
<td>0.0</td>
<td>7.7</td>
</tr>
<tr>
<td>10</td>
<td>0.0</td>
<td>16.1</td>
</tr>
<tr>
<td>11</td>
<td>7.1</td>
<td>28.6</td>
</tr>
<tr>
<td>12</td>
<td>20.0</td>
<td>35.0</td>
</tr>
<tr>
<td>13</td>
<td>20.0</td>
<td>20.0</td>
</tr>
<tr>
<td>14</td>
<td>5.9</td>
<td>17.6</td>
</tr>
<tr>
<td>15</td>
<td>10.0</td>
<td>30.0</td>
</tr>
<tr>
<td>16</td>
<td>14.3</td>
<td>28.6</td>
</tr>
<tr>
<td>17</td>
<td>16.7</td>
<td>16.7</td>
</tr>
<tr>
<td>18</td>
<td>0.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Based on school psychologists’ ratings of student age compared with comorbid depression, the results indicate that depression diagnoses do not tend to be seen until the age of 11. Of those surveyed, about 7% reported students of this age diagnosed with the
A similar trend was found with anxiety diagnoses, with the disorder being first diagnosed at age 7. However, survey responses indicated that diagnoses tended to peak at an earlier age, with the highest number of respondents indicating a diagnosis by age 8. Of those surveyed, 20% indicated a diagnosis of anxiety at age 7, 36% at age 8, nearly 8% at age 9, 16% at age 10, almost 27% at age 11, 35% at age 12, 20% at age 13, nearly 18% at age 14, 30% at age 15, almost 29% at age 16, and nearly 17% at age 17. Although the 18 year-old group received a rating of 100% for anxiety, it is important to note that this percentage reflects only one student at this age. None of the respondents rated students between the ages of 3 and 6 as having comorbid anxiety.

Because not all emotional concerns are necessarily diagnosed, the second part of research question 5 compared respondents’ ratings of characteristics of depression and anxiety, with student ages. For this research question, age was compared with characteristics of depression and anxiety displayed by students with AS, regardless of formal diagnoses. Respondents were asked to rate the student on whether characteristics of either depression or anxiety were present, in two separate questions. For both items, responses were coded with a 1 if depression and/or anxiety were checked, and 0 if the disorders were not selected. For analysis of this question, the responses to these items were compared with a question asking them to the state the child’s current age or age at
which they worked with the particular child. This item was a fill-in response that asked
them to list the child’s chronological age. The results are presented in Table 13.

Table 13.

*Frequency of Characteristics of Depression and Anxiety at Each Age Level (Percent)*

<table>
<thead>
<tr>
<th>Age</th>
<th>Depression</th>
<th>Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0.0</td>
<td>50.0</td>
</tr>
<tr>
<td>4</td>
<td>0.0</td>
<td>16.7</td>
</tr>
<tr>
<td>5</td>
<td>0.0</td>
<td>30.0</td>
</tr>
<tr>
<td>6</td>
<td>0.0</td>
<td>12.5</td>
</tr>
<tr>
<td>7</td>
<td>6.7</td>
<td>53.3</td>
</tr>
<tr>
<td>8</td>
<td>16.0</td>
<td>68.0</td>
</tr>
<tr>
<td>9</td>
<td>0.0</td>
<td>53.8</td>
</tr>
<tr>
<td>10</td>
<td>22.6</td>
<td>67.7</td>
</tr>
<tr>
<td>11</td>
<td>7.1</td>
<td>57.1</td>
</tr>
<tr>
<td>12</td>
<td>20.0</td>
<td>60.0</td>
</tr>
<tr>
<td>13</td>
<td>40.0</td>
<td>66.7</td>
</tr>
<tr>
<td>14</td>
<td>17.6</td>
<td>64.7</td>
</tr>
<tr>
<td>15</td>
<td>0.0</td>
<td>70.0</td>
</tr>
<tr>
<td>16</td>
<td>28.6</td>
<td>28.6</td>
</tr>
<tr>
<td>17</td>
<td>33.3</td>
<td>66.7</td>
</tr>
<tr>
<td>18</td>
<td>0.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

In comparing anxiety with student age, survey responses indicated that
c characteristics of anxiety, compared with diagnoses, appeared very early, begin to
increase substantially around age 7, and remain high throughout adolescence. Of those surveyed, 50% reported characteristics of anxiety at age 3. It is important to note, however, that this is based on only two students in this age group. Of those surveyed, nearly 17% reported characteristics of anxiety at age 4, 30% at age 5, nearly 13% at age 6, about 53% at age 7, 68% at age 8, almost 54% at age 9, nearly 68% at age 10, about 57% at age 11, 60% at age 12, nearly 67% at age 13, almost 65% at age 14, 70% at age 15, almost 29% at age 16, and nearly 67% at age 17. One respondent indicated that a student, age 18, also exhibited characteristics of depression. Therefore, the 100% in this age group is reflective of one student. Unlike with diagnoses of anxiety, no age group reflected an absence of anxiety characteristics.

When comparing depression with student age, survey data indicated that depressive characteristics first appeared around age 7 and peaked at age 13. Of those surveyed, 6.7% reported such characteristics at age seven, 16.0% at age eight, 22.6% at age 10, 7.1% at age 11, 20.0% at age 12, 40.0% at age 13, 17.6% at age 14, 29.0% at age 16, and 33.0% at age 17. As stated earlier, since only one student at the age of 18 was included in the survey information, the rating of 100.0% does not adequately represent the frequency of difficulties seen in this age group. None of the respondents rated students ages 3 through 6, 9, or 15 years of age as having characteristics of depression.

Question 6: The Impact of Demographic Factors on Provision of Social Supports

Research question 6 sought to determine if demographic factors such as geographic location, setting, and socioeconomic status impacted the types of social supports. For geographic location, the respondent was asked to fill in the state in which
they worked. The response was then used to formulate a category of geographic region. The states were used to categorize each as Northeast, South, Midwest, or West. For setting, respondents were asked to select the term that best describes their setting. They were asked to select rural, urban, or suburban. For socioeconomic status, respondents were asked to select among upper, upper middle, middle, and lower socioeconomic classes. The demographic information was then compared with survey items reporting social supports, type of educational programming, and related services provided by the student.

In terms of social supports received in the various work settings, the majority of respondents in each of the three settings indicated that social skills training was a social support provided to the student with AS. Of those surveyed, 64.3% in rural, 57.1% in urban, and 77.1% in suburban settings indicated that this support was provided. The majority of respondents also indicated that the student with AS received coaching from a teacher or instructional aide. Of those surveyed, near 68% in rural, about 55% in urban, and approximately 58% in suburban settings indicated that the student with AS received this support. In terms of verbal cues, about 55% of those in rural, nearly 47% in urban, and approximately 54% in suburban settings reported that this support was provided. With regard to nonverbal cues, nearly 43% in rural, about 33% in urban, and nearly 46% in suburban settings reported that this support was provided to the student with AS. Peer coaching was the least reported support, with approximately 7% in rural, 6% in urban, and 8% in suburban areas indicating that this support was provided to the student with AS. Of those surveyed, nearly 9% of respondents in the rural setting, about 6% in the urban setting, and approximately 7% in the suburban setting indicated that the student
with AS received other supports, though the specific supports were not listed. In terms of multiple supports, nearly 31% of respondents in the Northeast, approximately 24% in the West, about 23% in the Midwest, and approximately 22% in the south reported that the student with AS received more than one of the previously mentioned supports. These results are presented in Table 14.

Table 14.

*Likelihood of Receiving Social Supports by Region (Percent)*

<table>
<thead>
<tr>
<th>Support</th>
<th>Midwest</th>
<th>Northeast</th>
<th>South</th>
<th>West</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social skills</td>
<td>67.4</td>
<td>71.0</td>
<td>66.7</td>
<td>69.4</td>
</tr>
<tr>
<td>Coaching (teacher, aide)</td>
<td>67.4</td>
<td>50.0</td>
<td>63.3</td>
<td>73.5</td>
</tr>
<tr>
<td>Peer coaching</td>
<td>6.5</td>
<td>11.3</td>
<td>4.4</td>
<td>6.1</td>
</tr>
<tr>
<td>Nonverbal cues</td>
<td>41.3</td>
<td>37.1</td>
<td>48.9</td>
<td>40.8</td>
</tr>
<tr>
<td>Verbal cues</td>
<td>63.0</td>
<td>50.0</td>
<td>42.2</td>
<td>57.1</td>
</tr>
<tr>
<td>Other</td>
<td>8.7</td>
<td>9.7</td>
<td>6.7</td>
<td>4.1</td>
</tr>
<tr>
<td>Multiple</td>
<td>22.8</td>
<td>30.7</td>
<td>22.2</td>
<td>24.3</td>
</tr>
</tbody>
</table>

In comparing settings with supports, approximately 64% of respondents in rural settings indicated that the student with AS received social skills training as a support. Whereas about 57% of those in urban settings indicated the student received social skills training, approximately 77% of those in suburban settings indicated that the student with AS received social skills training.
In terms of coaching from a teacher or aide, nearly 70% of respondents in rural settings indicated that the student with AS received this support. For those in urban settings, about 55% responded that the student received this support. For respondents in suburban settings, nearly 59% indicated that the student received coaching as a support.

Peer coaching as a support was reported to be an infrequent occurrence for the student with AS. Of those surveyed, about 7% in rural, 6% in urban, and 8% in suburban settings reported that the student with AS received this as a support.

The use of nonverbal cues as a support for the student with AS was reported by nearly 43% of respondents in rural, 33% in urban, and 46% of those in suburban settings. Verbal cues as a support for the student with AS was reported by about 55% of those in rural settings, nearly 47% of those in urban, and approximately 54% of those in suburban settings.

Of those surveyed, nearly 9% of respondents in rural settings indicated other supports were provided. In urban settings, about 6% indicated other supports were provided to the student with AS, whereas approximately 7% of those in suburban settings reported that other supports were provided.

In terms of multiple supports received by the student with AS in various work settings, about 48% of respondents in suburban settings indicated that the student had received more than one of the previously mentioned supports. Whereas nearly 28% of respondents indicated that multiple supports were provided in the rural setting, about 24% of those in urban settings indicated this to be the case. These results are presented in Table 15.
Table 15.

*Likelihood of Receiving Social Supports by Work Setting (Percent)*

<table>
<thead>
<tr>
<th>Support</th>
<th>Rural</th>
<th>Urban</th>
<th>Suburban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social skills</td>
<td>64.3</td>
<td>57.1</td>
<td>77.1</td>
</tr>
<tr>
<td>Coaching</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(teacher, aide)</td>
<td>67.9</td>
<td>55.1</td>
<td>58.3</td>
</tr>
<tr>
<td>Peer coaching</td>
<td>7.1</td>
<td>6.1</td>
<td>8.3</td>
</tr>
<tr>
<td>Nonverbal cues</td>
<td>42.9</td>
<td>32.7</td>
<td>45.8</td>
</tr>
<tr>
<td>Verbal cues</td>
<td>55.4</td>
<td>46.9</td>
<td>54.2</td>
</tr>
<tr>
<td>Other</td>
<td>8.9</td>
<td>6.1</td>
<td>7.3</td>
</tr>
<tr>
<td>Multiple</td>
<td>27.7</td>
<td>24.3</td>
<td>47.5</td>
</tr>
</tbody>
</table>

In comparing socioeconomic level with social supports, the results indicated that almost 80% of respondents working in upper-middle socioeconomic areas reported that the student with AS received social skills training as a support. For those in the upper socioeconomic group, about 72% reported this support. For respondents working in lower socioeconomic areas, nearly 65% reported this support, whereas about 67% of those working in the middle socioeconomic group reported that social skills training was provided to the student.

In terms of coaching from a teacher or aide, approximately 66% of those in lower socioeconomic areas reported that the student with AS received this as a support. In the middle socioeconomic group, nearly 60% indicated that this support was provided. Whereas 59% of those working in upper-middle socioeconomic areas reported the use of
coaching from a teacher or aide as a support, about 44% in upper socioeconomic areas reported this support.

Peer coaching was reported infrequently across all socioeconomic classes. Of those surveyed, nearly 13% of those working in upper-middle, 8% of those in middle, 6% of those in upper, and 5% of those in lower socioeconomic areas reported that peer coaching was utilized as a support for the student with AS.

The use of nonverbal cues as a support was reported by about 51% of those in upper-middle, 44% of those in upper, 40% of those in lower, and 39% of those in middle socioeconomic areas. The use of verbal cues was reported by nearly 62% of those in upper-middle, 60% of those in lower, 50% of those in upper, and nearly 46% of those in middle socioeconomic areas.

Of those surveyed, almost 13% in upper-middle, 11% in upper, and about 10% in middle socioeconomic areas reported that other social supports were provided to the student with AS. None of respondents working in lower socioeconomic areas indicated the use of other supports.

In terms of multiple supports compared with socioeconomic level, about 39% of respondents in middle, 31% in low, 19% in upper-middle, and 9% in upper socioeconomic areas reported that the student with AS had received more than one of the previously mentioned supports. These results are summarized in Table 16.
Table 16.

*Likelihood of Receiving Social Supports by Socioeconomic Status (Percent)*

<table>
<thead>
<tr>
<th>Support</th>
<th>SES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Upper Upper</td>
</tr>
<tr>
<td>Social skills</td>
<td>72.2</td>
</tr>
<tr>
<td>Coaching</td>
<td>44.4</td>
</tr>
<tr>
<td>(teacher, aide)</td>
<td></td>
</tr>
<tr>
<td>Peer coaching</td>
<td>5.6</td>
</tr>
<tr>
<td>Nonverbal cues</td>
<td>44.4</td>
</tr>
<tr>
<td>Verbal cues</td>
<td>50.0</td>
</tr>
<tr>
<td>Other</td>
<td>11.1</td>
</tr>
<tr>
<td>Multiple</td>
<td>8.9</td>
</tr>
</tbody>
</table>

In comparing type of educational program with region, the majority of respondents across regions indicated that the student with AS received in-class support. Of those surveyed, nearly 48% of respondents in the Midwest, about 45% in the Northeast, nearly 36% in the South, and about 27% in the West reported this type of educational program for the student with AS.

The use of supplemental instruction was also reported frequently across regions. Of those surveyed, nearly 47% in the South, almost 46% in the Midwest, about 37% in the Northeast, and almost 33% in the West indicated that supplemental instruction such as pull-out support services were utilized.
Instruction in the general education setting was also reported fairly frequently. Of those surveyed, 41.9% of those in the Northeast, 33.3% in the South, 32.6% in the Midwest, and 30.6% in the West reported that the student was instructed in this setting.

Pull-out replacement instruction was reported infrequently in all regions except the West. Of those surveyed, 26.5% in the West, 8.7% in the Midwest, 8.1% in the Northeast, and 6.7% in the South reported this type of instructional program.

Instruction in the self-contained setting was also reported to be used relatively infrequently in most areas. Whereas nearly 25% of those in the West and about 15% in the Midwest reported this type of program, only about 9% in the South and approximately 7% in the Northeast reported the use of this type of instruction for the student with AS.

Out-of-district placements were reported infrequently across all regions. Of those surveyed, approximately 4% in the Midwest, 3% in the Northeast, and 2% in the South reported that the student with AS was instructed in this type of program. None of the respondents in the West reported the use of out-of-district placements.

In terms of other types of educational programs, about 16% of respondents in the Northeast, 7% in the South, and 4% in the Midwest reported that the student with AS was instructed in another type of setting. None of the respondents in the West reported instruction in another type of setting.

An educational program consisting of multiple programs was reported fairly frequently. Of those surveyed, about 40% of those in the Northeast, 38% of those in the South, 37% of those in the Midwest, and 33% of those in the West reported that the
student with AS received instruction in more than one of the aforementioned programs. These results are presented in Table 17.

Table 17.

*Educational Program by Region (Percent)*

<table>
<thead>
<tr>
<th>Program</th>
<th>Midwest</th>
<th>Northeast</th>
<th>South</th>
<th>West</th>
</tr>
</thead>
<tbody>
<tr>
<td>General education</td>
<td>32.6</td>
<td>41.9</td>
<td>33.3</td>
<td>30.6</td>
</tr>
<tr>
<td>Supplemental</td>
<td>45.7</td>
<td>37.1</td>
<td>46.7</td>
<td>32.7</td>
</tr>
<tr>
<td>In-class support</td>
<td>47.8</td>
<td>45.2</td>
<td>35.6</td>
<td>26.5</td>
</tr>
<tr>
<td>Pull-out replacement</td>
<td>8.7</td>
<td>8.1</td>
<td>6.7</td>
<td>26.5</td>
</tr>
<tr>
<td>Self-contained</td>
<td>15.2</td>
<td>6.5</td>
<td>8.9</td>
<td>24.5</td>
</tr>
<tr>
<td>Out of district</td>
<td>4.3</td>
<td>3.2</td>
<td>2.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Other</td>
<td>4.3</td>
<td>16.1</td>
<td>6.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Multiple</td>
<td>37.0</td>
<td>40.3</td>
<td>37.8</td>
<td>32.7</td>
</tr>
</tbody>
</table>

In comparing work setting with type of educational program, the results indicated that the majority of respondents indicated that the student with AS received supplemental instruction or in-class support services. In terms of supplemental instruction, 50% of those in rural and nearly 37% in both urban and suburban settings reported that the student with AS received this type of educational program. In terms of in-class support, nearly 45% of those in rural, 41% in suburban, and 31% in urban reported this type of program.
Instruction in the general education setting was also reported fairly frequently. About 41% of respondents in the rural, nearly 37% in urban, and about 31% in suburban settings reported that the student with AS was instructed in the general education setting.

Overall, pull-out replacement instruction and instruction in the self-contained setting were reported infrequently. Of those surveyed, about 18% of those in rural, 10% of those in suburban, and 8% of those in urban settings reported that pull-out replacement was utilized for the student with AS. Furthermore, of those surveyed, approximately 18% of those in urban, 15% of those in suburban, and 7% of those in rural settings reported that the student with AS received instruction in the self-contained setting.

Out-of-district placements were reported very infrequently across all settings. Of those surveyed, only about 4% in suburban and 2% in rural settings reported this type of program. None of the respondents in urban settings indicated that the student with AS had received instruction in the self-contained setting.

A relatively small percentage of respondents in the various settings indicated that the student with AS received multiple types of educational programming. Of those surveyed, about 9% in rural, 8% in urban, and 6% in suburban settings reported that the student received instruction in more than one of the aforementioned types of educational programs. These results are presented in Table 18.
Table 18.

*Educational Program by Work Setting (Percent)*

<table>
<thead>
<tr>
<th>Program</th>
<th>Rural</th>
<th>Urban</th>
<th>Suburban</th>
</tr>
</thead>
<tbody>
<tr>
<td>General education</td>
<td>41.1</td>
<td>36.7</td>
<td>31.3</td>
</tr>
<tr>
<td>Supplemental</td>
<td>50.0</td>
<td>36.7</td>
<td>36.5</td>
</tr>
<tr>
<td>In-class support</td>
<td>44.6</td>
<td>30.6</td>
<td>40.6</td>
</tr>
<tr>
<td>Pull-out replacement</td>
<td>17.9</td>
<td>8.2</td>
<td>10.4</td>
</tr>
<tr>
<td>Self-contained</td>
<td>7.1</td>
<td>18.4</td>
<td>14.6</td>
</tr>
<tr>
<td>Out of district</td>
<td>1.8</td>
<td>0.0</td>
<td>4.2</td>
</tr>
<tr>
<td>Other</td>
<td>8.9</td>
<td>8.2</td>
<td>6.3</td>
</tr>
<tr>
<td>Multiple</td>
<td>50.0</td>
<td>32.7</td>
<td>32.3</td>
</tr>
</tbody>
</table>

In comparing type of educational program with socioeconomic class, the majority of respondents across socioeconomic levels reported that the student with AS receives in-class support or supplemental instruction. In terms of in-class support, nearly 49% of those in upper-middle, about 39% of those in both middle and upper, and approximately 32% in lower socioeconomic areas reported this type of educational program for the student with AS. In terms of supplemental instruction, nearly 44% of those working in upper-middle, about 40% in lower, and approximately 39% in both middle, and upper socioeconomic areas reported this type of educational program for the student with AS.

Instruction in the general education setting was also reported frequently among most settings. Of those surveyed, approximately 51% working in upper-middle, 34% in
middle, 32% in lower, and 17% in upper socioeconomic areas reported that the student with AS received this type of educational program.

Pull-out replacement and self-contained instruction were reported less frequently. In terms of pull-out replacement instruction, approximately 22% in upper, 21% in upper-middle, 10% in middle, and 7% working in lower socioeconomic areas indicated that the student with AS received this type of program. In terms of instruction in the self-contained setting, approximately 19% of those working in lower, 15% in upper-middle, and 11% in middle socioeconomic areas reported this type of program. None of the respondents working in upper socioeconomic areas reported that the student with AS received this type of program.

Globally, out-of-district placements were reported with the lowest frequency. Of those surveyed, about 11% of those in upper, 3% in lower, and 1% of those working in middle socioeconomic areas reported this type of educational program for the student with AS. None of the respondents working in upper-middle socioeconomic areas reported this type of program.

In terms of other types of educational programming, about 11% of those in upper, 10% of those in middle, 5% of those in upper-middle, and 3% of those working in lower socioeconomic areas indicated that the student with AS received other types of educational programs.

The use of multiple types of educational programs was reported frequently. Of those surveyed, approximately 56% in upper-middle, 44% in upper, 32% in lower, and 30% working in middle socioeconomic areas reported that the student with AS received
more than one of the aforementioned types of educational programming. These results are presented in Table 19.

Table 19.

*Educational Program by Socioeconomic Status (Percent)*

<table>
<thead>
<tr>
<th>Program</th>
<th>Upper SES</th>
<th>Upper</th>
<th>Middle</th>
<th>Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>General education</td>
<td>16.7</td>
<td>51.3</td>
<td>34.2</td>
<td>32.3</td>
</tr>
<tr>
<td>Supplemental</td>
<td>38.9</td>
<td>43.6</td>
<td>39.2</td>
<td>40.3</td>
</tr>
<tr>
<td>In-class support</td>
<td>38.9</td>
<td>48.7</td>
<td>39.2</td>
<td>32.3</td>
</tr>
<tr>
<td>Pull-out replacement</td>
<td>22.2</td>
<td>20.5</td>
<td>10.1</td>
<td>6.5</td>
</tr>
<tr>
<td>Self-contained</td>
<td>0.0</td>
<td>15.4</td>
<td>11.4</td>
<td>19.4</td>
</tr>
<tr>
<td>Out of district</td>
<td>11.1</td>
<td>0.0</td>
<td>1.3</td>
<td>3.2</td>
</tr>
<tr>
<td>Other</td>
<td>11.1</td>
<td>5.1</td>
<td>10.1</td>
<td>3.2</td>
</tr>
<tr>
<td>Multiple</td>
<td>44.4</td>
<td>56.4</td>
<td>30.4</td>
<td>32.3</td>
</tr>
</tbody>
</table>

In examining region with related services provided to the student with AS, speech-language therapy was reported the most frequently overall. Of those surveyed, nearly 74% of those in the West, 61% in the Midwest, 58% in the South, and 50% in the Northeast reported that the student with AS received speech-language therapy as a related service.

Counseling was also reported frequently across the regions. Of those surveyed, about 77% of those in the Northeast, 44% in the Midwest, 39% in the West, and 38% in the south reported that the student with AS received counseling as a related service.
Occupational therapy was reported to be provided fairly frequently. Of those surveyed, about 41% of those in the Midwest, 39% in the Northeast, 31% in the West, and 22% in the South reported that the student with AS received occupational therapy as a related service.

Adaptive physical education was reported relatively infrequently. Of those surveyed, approximately 14% in the West, 13% in the Northeast, 11% in the Midwest, and 9% in the South reported that the student with AS received this as a related service.

Physical therapy was reported as the least frequently provided related service. Of those surveyed, about 7% in the Midwest, 5% in the Northeast, 4% in the South, and 2% in the West reported that the student with AS received this service.

Overall, the majority of respondents reported that the student with AS received multiple related services as part of their school program. Of those surveyed, nearly 63% of those in the Northeast, about 53% in the West, approximately 52% in the Midwest, and 40% in the South reported that the student with AS received more than one of the aforementioned related services. These results are presented in Table 20.
In comparing work setting with related services, the results indicate that the majority of respondents across settings reported that the student with AS receives speech-language therapy. Of those surveyed, approximately 64% in suburban, 59% in urban, and 54% in rural settings reported that the student with AS received this as a related service.

Counseling was also reported with high frequency. Of those surveyed, about 58% in suburban, 55% in rural, and 35% in urban settings reported that the student with AS received counseling.

Occupational therapy was reported frequently in the rural and suburban settings. Of those surveyed, about 45% in rural and 37% in suburban reported that the student with AS received this service. In the urban setting, only about 14% of respondents indicated that this service was provided to the student with AS.
Adaptive physical education was reported to be provided infrequently to the student with AS. Of those surveyed, about 14% in urban, 13% in suburban, and 9% in rural settings reported that the student with AS received this as a related service.

Physical therapy was reported as being the least frequently provided related service to the student with AS. Of those surveyed, approximately 7% of respondents in rural, 4% in suburban, and 2% in urban settings reported this was provided to the student with AS.

Globally, a substantial portion of respondents indicated that the student with AS was receiving multiple related services. Of those surveyed, about 64% of those in suburban, 52% in rural, and 33% in urban settings reported that the student with AS was receiving more than one of the aforementioned related services. These results are summarized in Table 21.

Table 21.

*Related Services by Work Setting (Percent)*

<table>
<thead>
<tr>
<th>Related Service</th>
<th>Rural</th>
<th>Urban</th>
<th>Suburban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptive physical education</td>
<td>8.9</td>
<td>14.3</td>
<td>12.5</td>
</tr>
<tr>
<td>Counseling</td>
<td>55.4</td>
<td>34.7</td>
<td>58.3</td>
</tr>
<tr>
<td>Occupational therapy</td>
<td>44.6</td>
<td>14.3</td>
<td>36.5</td>
</tr>
<tr>
<td>Physical therapy</td>
<td>7.1</td>
<td>2.0</td>
<td>4.2</td>
</tr>
<tr>
<td>Speech-language</td>
<td>53.6</td>
<td>59.2</td>
<td>63.5</td>
</tr>
<tr>
<td>Multiple</td>
<td>51.8</td>
<td>32.7</td>
<td>63.5</td>
</tr>
</tbody>
</table>
In comparing socioeconomic level with related services provided, the results indicate that, globally, speech-language therapy is the most frequently provided related service provided across multiple socioeconomic groups. Of those surveyed, about 69% in upper-middle, 65% in lower, 61% in upper, and 51% of those working in middle socioeconomic areas indicated that the student with AS receives speech-language therapy as a related service.

Counseling was also reported to be provided frequently. Of those surveyed, 69.2% in the upper-middle, 61.1% in the upper, 49.4% in the middle, and 40.3% in the lower socioeconomic group indicated that the student with AS received this service.

Occupational therapy was reported to be provided to students with moderate frequency. Of those surveyed, approximately 56% in the upper, 32% in the lower, 32% in the middle, and 31% in the upper-middle socioeconomic group indicated that this service was provided to the student with AS.

Adaptive physical education was reported with lower frequency across socioeconomic groups. Of those surveyed, about 18% in the upper-middle, 11% in the lower, 11% in the upper, and 10% working in the middle socioeconomic area reported that this service was provided to the student with AS.

Physical therapy was reported the least frequently provided related service across socioeconomic groups. Of those surveyed, approximately 11% in the upper, 5% in the upper-middle, 4% in the middle, and 3% working in the lower socioeconomic areas reported that this service was provided to the student with AS.
Across all socioeconomic groups, a substantial portion of respondents indicated that the student with AS was receiving multiple related services. Of those surveyed, about 72% working in the upper, approximately 67% in the upper-middle, 50% in the lower, and about 44% in the middle socioeconomic areas reported that the student with AS was receiving more than one of the aforementioned related services. These results are presented in Table 22.

Table 22.

*Related Services by Socioeconomic Status (Percent)*

<table>
<thead>
<tr>
<th>Related Service</th>
<th>Upper</th>
<th>Upper Middle</th>
<th>Middle</th>
<th>Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptive physical education</td>
<td>11.1</td>
<td>17.9</td>
<td>10.1</td>
<td>11.3</td>
</tr>
<tr>
<td>Counseling</td>
<td>61.1</td>
<td>69.2</td>
<td>49.4</td>
<td>40.3</td>
</tr>
<tr>
<td>Occupational therapy</td>
<td>55.6</td>
<td>30.8</td>
<td>31.6</td>
<td>32.3</td>
</tr>
<tr>
<td>Physical therapy</td>
<td>11.1</td>
<td>5.1</td>
<td>3.8</td>
<td>3.2</td>
</tr>
<tr>
<td>Speech-language</td>
<td>61.1</td>
<td>69.2</td>
<td>50.6</td>
<td>64.5</td>
</tr>
<tr>
<td>Multiple</td>
<td>72.2</td>
<td>66.7</td>
<td>44.3</td>
<td>50.0</td>
</tr>
</tbody>
</table>

Additional cross tabulations, as well as chi-square tests were utilized to determine whether any significant trends existed with regard to the type of educational program provided to students with AS across the various regions (see Appendix C for cross tabulations and chi-square test results).
A greater number of students than expected were reported to have been receiving instruction in the general education setting in the Northeast region. In comparison, less than expected were receiving this type of instruction in the Midwest, South, and West regions.

A larger number of students than expected were reported to have been receiving supplemental instruction in the Midwest and South regions. Conversely, less than expected were reported to receive this type of program in the Northeast and West regions.

A greater number of students than expected were receiving in-class support instruction in the Midwest and Northeast regions. In comparison, less than expected were receiving this type of program in the South and West regions.

A higher number of students than expected were receiving pull-out replacement instruction in the West. However, less than expected were receiving this type of program in the Midwest, Northeast, and South regions.

A larger number of students than expected were receiving a self-contained program in the Midwest and West regions. Conversely, less than expected were receiving this type of program in the Northeast and South regions.

A higher number of students than expected were receiving instruction in an out-of-district setting in the South and West regions. In comparison, less than expected were receiving this type of program in the Midwest and Northeast regions.

A greater number of students than expected in the Northeast were receiving another, unspecified, type of educational program. Less than expected, however, were receiving another type of program in the Midwest, South, and West regions.
Chapter 5

Discussion

This chapter includes a summary of the analyses, discussion of the findings, conclusions, strengths, limitations, and recommendations for future research. Implications for individuals working with students with AS are also provided.

The purpose of the present study was to examine school psychologists’ perceptions about their own knowledge and the knowledge of other professionals regarding AS. The study also sought to examine what services are provided to students with the disorder, and if those services are influenced by factors such as socio-economic status, geographic region, setting, or number or weaknesses.

In this section, the findings reported in the results section related to the stated research questions, is summarized. The first question examined the level of knowledge that school psychologists have about the social, executive function, and academic deficits related to AS.

The survey provided an opportunity for school psychologists throughout the United States to respond to questions pertaining to knowledge about AS, student needs, and services provided to students with the disorder. The 40.4% response rate suggested that participants of the current study were eager to share information about their experiences with AS. One reason that respondents may have been willing to participate in the survey was that they did not need to identify themselves and they could comfortably respond to survey questions without fear of being identified. One respondent commented on the survey form that the survey took little time to fill out and was completed with ease.
A few other respondents indicated that they were interested in the topic of AS and felt that more awareness of this disorder was needed within the context of school setting.

**School psychologists’ Level of Knowledge about AS**

Overall, the majority of school psychologists, surveyed rated themselves as very knowledgeable about the social deficits often present with AS. With executive function and academic deficits, however, school psychologists most frequently rated themselves as somewhat Knowledgeable. In terms of academic deficits often present with AS, the majority of school psychologists surveyed rated themselves as very knowledgeable. However, this was only slightly more than the number of respondents that rated themselves as somewhat knowledgeable in this area.

**Level of knowledge of other educational professionals about AS**

When compared with other educational professionals, speech-language specialists were rated as being the most knowledgeable with regard to social deficits present with AS. Although globally, school psychologists rated themselves as more knowledgeable, a greater number of respondents rated speech-language specialists as having expert level knowledge about social deficits present with AS. Occupational therapists were rated as the second most knowledgeable in this area, followed by special education teachers and counselors. In comparison, the majority of survey respondents rated general education and enrichment teachers were rated as having little or no knowledge. It is critical to examine knowledge of social deficits because, as Griffin, Griffin, Fitch, Albera, and Gingras (2006) asserted, difficulties with social interaction are a major characteristic of
AS. Similarly, Myles and Southwick (1999) noted that social relationships are a source of conflict for children with AS, who have much difficulty building and maintaining friendships.

In terms of executive function deficits, survey respondents rated speech-language specialist as the most knowledgeable in this area. Occupational therapists were rated as the second most knowledgeable, followed by special education teachers. Conversely, general education and enrichment teachers were primarily viewed as having little or no knowledge about executive function deficits related to AS. Given that, as previously noted, Verte et al. (2006) found that children with AS had weaknesses in several executive function areas, it is vital for individuals working with these children to have knowledge about executive functions.

With regard to academic deficits often present with AS, survey respondents rated special education teachers as the most knowledgeable overall. It is vital to examine knowledge about academic deficits with AS because, as Griswold et al. (2002) asserted, a low frustration tolerance and difficulties with sensory integration, organization, abstract thinking, comprehension of figurative language, problem-solving, and distinguishing essential from nonessential details are often observed with AS. Without knowledge of these potential problem areas, appropriate classroom interventions cannot be employed.

Speech-language specialists were rated as the second most knowledgeable the area of academic deficits with AS, although a slightly greater percentage of survey respondents viewed them as having more expert level knowledge than special education teachers. Whereas occupational therapists and counselors were viewed as reasonably
knowledgeable in this area, general education and enrichment teachers were rated as the least knowledgeable about academic deficits with AS.

Survey respondents also rated other educational staff on their knowledge of effective social/behavioral and academic interventions for students with AS. With regard to knowledge of effective social/behavioral interventions, special education teachers were rated as the most knowledgeable overall. However, slightly more speech-language specialists were viewed as having expert level knowledge in this area. Speech-language specialists were viewed as the second most knowledgeable overall, followed by counselors and occupational therapists. General education and enrichment teachers were viewed as among the least knowledgeable. Knowledge of social and behavioral interventions is important to examine because, as Safran et al. (2003) contended, socially inappropriate actions that result from a lack of social understanding can lead to highly disruptive behaviors. As the authors added, failure to provide proper support and coping strategies to students with AS is likely to result in levels of frustration that can reach crisis proportions.

In terms of knowledge about effective academic interventions for students with AS, special education teachers were viewed as the most knowledgeable, followed by speech-language specialists. Conversely, adaptive physical education and enrichment teachers, along with school disciplinarians, were rated as the least knowledgeable in this area.

Interestingly, with the exception of enrichment teachers, general education teachers were rated as the least knowledgeable regarding social, executive function, and academic deficits, as well as about effective social/behavioral interventions. Furthermore,
with regard to knowledge of effective academic interventions, the majority of respondents rated general education teachers as only being somewhat knowledgeable. These are important findings, particularly when considering, as noted by Little (2002) and Myles and Simpson (2002), that most students with AS receive the majority of their education in general education classrooms. Additionally, the fact that general education teachers were not among the most knowledgeable with regard to effective academic interventions has significant implications for meeting the academic needs of students with AS. As Griffin et al. (2006) noted, academic problems tend to arise because of inflexibility, literal thinking styles, poor organizational skills, poor problem-solving skills, and difficulty identifying essential from nonessential details. Thus, it is vital for the general education teacher to be aware of these challenges and to provide necessary accommodations for the student with AS. As the authors added, despite advanced vocabularies, critical thinking and comprehension deficits are often present. However, such deficits may not be readily seen by teachers, due to the extensive vocabularies often displayed by students with AS.

Although not addressed in the data analysis section, one interesting finding is that, despite speech-language specialists and counselors being viewed as among the most knowledgeable staff regarding various aspects of AS, a large portion of respondents indicated that the student with AS was not receiving support from these individuals. As Safran et al. (2003) noted, for instance, speech-language specialists can play a central role in helping to shape more appropriate student behavior and in offering suggestions to teachers in order to help facilitate generalization of skills learned in therapy to the classroom setting.
Occupational therapists were also viewed as being quite knowledgeable about some aspects of AS. However, the survey results indicated that a substantial portion of students with the disorder were not receiving occupational therapy services.

In comparing the level of knowledge of school psychologists with other educational staff, the results of the study indicated that, overall, school psychologists view themselves as more knowledgeable than other staff about the social, executive function, and academic deficits frequently present with AS. Although school psychologists rated themselves as more knowledgeable than speech-language specialists about social and academic deficits and AS globally, they rated a slightly higher number of speech-language specialists as having expert level knowledge in these areas.

Meeting the Needs of Students with AS

In looking at degree of student need (based on number of weaknesses) with supports and skills training provided to the student, the survey resulted indicated that, in general, the likelihood of receiving a support or focus on a particular skill increases as does the degree of need for the student. There were a few instances, however, where this was not the case. For example, the greatest number of students with AS who were receiving peer coaching as a social support were those with a low number of weaknesses (1 to 4 weaknesses). Students with moderate number (9 to 12 weaknesses) were the least likely to receive this support. Similarly, more students with a low number of weaknesses were being provided with verbal cues as a support than those with a moderate number of weaknesses. The likelihood of receiving the remaining social supports (social skills,
coaching from teacher or aide, nonverbal cues) increased as the number of weaknesses increased.

In terms of skills addressed in social skills training, more students with a low number of weaknesses were receiving focus on conflict resolution, experience-sharing and interpreting nonverbal behavior in others than those with a moderate number of weaknesses. Furthermore, more students with a low number of weaknesses were receiving focus on reciprocal communication and interaction than those with either a moderate or high number of weaknesses. The likelihood of receiving focus on the remaining social skills (social referencing, appropriate use of nonverbal behavior, turn-taking, and perspective-taking) increased along with the number of weaknesses.

With regard to skills addressed in counseling, more students a low number of weaknesses were receiving focus on decision-making, and increasing self-control/behavioral regulation than those with a moderate number of weaknesses. Additionally, students with a high number of weaknesses were less likely than those with a moderate number to receive focus on attribution retraining, anger management, and emotional regulation. The likelihood of receiving focus in the remaining areas (labeling and identifying emotions, perspective-taking, cognitive restructuring, exploring and examining alternatives, and correcting cognitive distortions) increased as the number of weaknesses increased.

It is important to examine supports and skills training provided to the student with AS because, as Gutstein and Whitney (2002) asserted, children with AS need specific instruction in reciprocal relationships and, in particular, with fixing interpersonal problems, experiencing togetherness, and enjoying input from peers. Myles and
Southwick (1999) also noted that strategies such as peer mentors or structured social groups can provide students with AS with positive role models and much needed social support.

As previously noted, despite speech-language specialists and counselors being viewed as the most knowledgeable about many aspects of AS, a large portion of survey respondents indicated that the student with AS was not receiving support from these individuals. In terms of skills likely to be addressed in speech therapy, survey respondents frequently reported weaknesses in eye contact (53%) and social communication (81%). Despite these weaknesses, however, 40% of students with AS were not receiving speech-language services. Additionally, although about 57% of respondents reported that the student with AS demonstrated weakness emotional regulation, 57% in labeling and identifying emotions in self and others, 54% in peer cooperation, 83% in interpersonal skills, and 85% in peer interaction, which are all skills likely to be addressed in counseling, almost half of the students with AS were not receiving counseling. Given that many of the reported needs were within the counseling and speech-language domains and that counselors and speech-language specialists are viewed as among the most knowledgeable regarding many aspects of AS, these professionals can provide a crucial role in the education of students with this disorder.

Occupational therapists were also rated as being quite knowledgeable about some aspects of AS. However, the survey results indicated that only about one-third of students with the disorder were receiving occupational therapy services. Although this may be the case because occupational therapists dedicate their time to working with students having
more severe visual-motor deficits, they too could be an excellent resource in programming for and accommodating students with AS.

Prevalence of Discipline Problems

Survey results indicated that discipline problems were an infrequent occurrence for students with AS. The majority of respondents reported that discipline problems rarely occurred. The remainder reported only occasional discipline problems. In further looking at whether students with AS received modified discipline, half of survey respondents reported that discipline was modified and half reported that it was not.

Although discipline problems were not viewed as a significant problem within the sample, it is an important area of focus. Griffin et al. (2006) noted, for instance, that difficulties with social interaction that are experienced by those with AS can be manifested in several ways. According to the authors, some children with AS may experience problems with aggression and conduct. Furthermore, as stated by Myles and Simpson (2002), students with AS often experience behavioral problems connected to their social deficits.

Depression and Anxiety with AS

Based on the survey results, diagnoses of depression do not appear to increase along with age. A diagnosis of depression was reported most frequently at ages 12 and 13. Although diagnoses appeared to first be present at age 8, as indicated in the survey
results, it is interesting to note that none of the students ages 9 or 10 had received a diagnosis.

Characteristics of depression were evident at age 7, slightly earlier than formal diagnoses. Similar to diagnoses of depression, characteristics were most frequently reported at age 13. As was the case with diagnoses, characteristics of depression failed to show a definitive increase with age.

In looking at diagnoses of anxiety disorders, the survey results did not reveal a tendency for diagnoses to increase with age. Diagnoses were first reported at age 7, but were most prevalent at ages 8, 12, and 15. As noted previously, the age 18 category contained only one student. Therefore, no observations or conclusions can be drawn from this age group.

Characteristics of anxiety also failed to show a definitive increase with student age. However, characteristics of anxiety first appeared at age 3, which was the youngest age reported on in the survey. Characteristics of anxiety were most frequently reported at age 15.

Because many students with AS will experience depression and/or anxiety at some point, as noted by Attwood (1998) emotional functioning is an important area to examine. Myles and Simpson (2002) added that, despite difficulty with social awareness, individuals with AS are aware enough to recognize that they are different from their peers. Because of this, problems with self-esteem and self-concept often arise. Furthermore, Griffin et al. (2006) stated that problems with social interaction can lead students with AS to develop learned helplessness, self-blame for socially inappropriate behavior, and depression.
The Influence of Geographic Region on Provision of Services

In looking at the impact of geographic region on the types of social supports provided to students with AS, the survey results indicated that, for the most part, the likelihood of receiving a support did not vary greatly among the regions. However, the greatest differences were evident with peer coaching from a teacher or aide. Specifically, a considerably greater number of students with AS residing in the West were reported to be receiving this support, as compared with students in the Northeast.

When examining the impact of geographic region on type of educational program provided to the student with AS, the survey results revealed that the type of program provided to the student did vary at times among regions. For instance, students in the Midwest and Northeast were substantially more likely to receive in-class support services than were those in the West. Furthermore, students with AS who were residing in the West were substantially more likely to receive pull-out replacement services than were those in any other region. Students with AS who were residing in the West were most likely to be receiving educational instruction within a self-contained setting, and nearly four times as likely to receive this type of instruction versus those in the Northeast. Interestingly, whereas a small percentage of students residing in the Midwest, Northeast, or South were receiving instruction in out-of-district programs, none of the survey respondents reported that students in the West received instruction in this setting.

In examining type of educational programming provided to students in the varying regions, the largest difference between expected and actual counts of students with AS receiving general education instruction was found in the Northeast. Specifically,
whereas the expected count of students in the sample receiving general education instruction was 22, 26 of students in this region were receiving this type of program.

With regard to supplemental instruction, the most substantial difference between expected and actual counts of students with AS receiving this type of instruction was found in the West. Although the expected count of students in the sample receiving this type of instruction was about 20, only 16 of the students in the West were receiving supplemental instruction.

In terms of in-class support, the greatest difference between expected and actual counts of students with AS receiving this type of instruction was found in the West. Specifically, although the expected count for this region was 19, only 13 of students in the sample residing in the West were receiving this type of educational programming.

With regard to pull-out replacement, the largest difference between expected and actual counts of students with AS receiving this type of programming was found in the West. Although the expected count for this region was only 6, more than twice as expected (13 students) in the West were receiving pull-out replacement services.

In examining expected versus actual counts of students in the sample receiving self-contained instruction, the most substantial difference was found in the West. Specifically, whereas the expected count of students with AS receiving a self-contained program was only about 7 for this region, 12 of students in the sample were being instructed in this setting.

Of all the specific types of educational programs, the smallest differences between expected and actual counts were found of out-of-district placements. The largest difference, for instance, was 1 student. This difference was found in the West.
Specifically, whereas the expected count for students in the region receiving instruction in an out-of-district placement was 0, 1 student in the sample were receiving this type of educational program.

In terms of other, unspecified types of programs, the greatest difference was found in the Northeast. Although the expected count for students in this region receiving another type of educational program was about 5, 10 of students with AS in the sample were receiving other types of programs.

In looking at related services by region, the likelihood of receiving adaptive physical education or physical therapy was generally similar, regardless of region. However, students with AS residing in the Northeast were substantially more likely to receive counseling than were those residing in other regions. Students in the Midwest were most likely to be receiving occupational therapy, and nearly twice as likely to receive this service as students in other regions. Furthermore, whereas half of the students residing in the Northeast were reported to have been receiving speech-language therapy, nearly three fourths of those residing in the West were receiving this related service.
The Influence of Setting on the Provision of Services

When examining the impact of setting on the types of social supports provided to students with AS, the survey results did not reflect significant variability in the types of supports provided in rural, urban, or suburban settings. However, students residing in suburban settings were 20% more likely to be receiving social skills instruction than were those residing in urban areas.

In terms of setting compared with educational program, the survey results did not indicate substantial variability in the type of educational program provided to the student, among rural, urban, and suburban settings. Interestingly, though, whereas a small percentage of students with AS residing in rural and suburban settings were being instructed in out-of-district placements, none of the students in urban settings were receiving this type of educational program.

When looking at setting compared to related services provided to the student with AS, the survey results indicated that the likelihood of receiving adaptive physical education, physical therapy, and speech-language therapy did not substantially differ across rural, urban, and suburban settings. However, a much higher percentage of students in suburban and rural settings were receiving counseling and occupational therapy, as compared with students in urban settings.

The Influence of Socioeconomic Status on the Provision of Services

In examining social supports compared with socio-economic status, the survey results revealed that the types of social supports provided to students with AS did not
substantially differ across socioeconomic groups. However, nearly 20% more students residing in lower socioeconomic areas were receiving coaching from a teacher or aide than were those residing in upper socio-economic areas.

When comparing socioeconomic status with type of educational program provided to the student with AS, the survey results indicated that students residing in upper-middle socio-economic areas were more than three times as likely to be instructed in the general education setting than were those in upper socioeconomic areas. Additionally, students with AS residing in upper socioeconomic areas were more than three times as those in lower socio-economic areas to receive pull-out replacement services. Students in upper socioeconomic areas were more likely to be receiving instruction in an out-of-district program than were those in other socio-economic groups. Interestingly though, none of the students residing in upper-middle socioeconomic areas were reported to receive instruction in this setting.

In examining socioeconomic status and types of related services provided to the student with AS, the survey results revealed that the likelihood of receiving adaptive physical education and physical therapy did not substantially differ across socioeconomic groups. However, students in upper-middle socioeconomic areas were most likely, and nearly 30% more likely than those in lower socioeconomic areas, to receive counseling. Whereas over 50% of students in upper socioeconomic areas were receiving occupational therapy, roughly 30% of students in other socioeconomic groups were reported to receive this related service. In addition, whereas about 50% of students in middle socioeconomic areas were receiving speech-language therapy, nearly 70% of those in upper-middle socioeconomic areas were receiving this related service.
Limitations

The study utilized survey data to explore the level of knowledge of school psychologists about AS. Survey data was also used to assess the level of knowledge of other educational staff, based on school psychologists’ perceptions. Although the study revealed interesting findings, it is important to note several factors that could limit the generalizability of the results of this study.

Although the demographic information suggests an adequate representation of school psychologists throughout the United States, as well as various settings and socioeconomic levels, the results cannot be generalized beyond the sample population. The current study included only school psychologists, and, although respondents were asked to rate the level of knowledge of other staff members, these staff members were not included in the study.

The current study employed a survey methodology in which school psychologists expressed their perceptions and beliefs while responding to a questionnaire. The extent to which these expressed perceptions and beliefs reflect their actual attitudes about AS cannot be ascertained. Furthermore, the respondents were asked to answer questions about a particular student with AS, with whom they currently or have previously worked. Although records may have been available in some cases, in other cases, they were likely forced to rely on their own recollection. It is possible that some participants did not recall all of the details of the case accurately.

Although the vast majority of survey respondents appeared to have no problem completing the survey, one respondent returned the form only partially completed, with a note on section C, that they had no way of knowing how knowledgeable other staff
members were with regard to AS. Therefore, asking respondents to provide a rating of the knowledge level of other staff members may have impacted some perspective participants’ willingness to complete the survey. This would have reduced overall participation and resulted in a smaller sample.

Conclusions

The following conclusions can be drawn from the current study:

The school psychologists included in this study generally believe that they have sufficient knowledge about the social deficits often present with AS. However, the majority of those surveyed do not perceive that they have sufficient knowledge about executive function deficits often present with this population. Furthermore, a substantial portion of school psychologists included in the study believe that they lack knowledge with regard to academic deficits often present with AS. The results indicate that more training in the areas of executive function and academic deficits with this population is needed.

School psychologists generally view themselves as more knowledgeable than other staff members regarding the academic, executive function, and social deficits often present with AS. However, school psychologists view a slightly higher number of speech-language specialist as having expertise in the area of social deficits than they do themselves. Therefore, speech-language specialists can generally serve as a valuable resource in this area.

Speech-language specialists and special education teachers were perceived as the most knowledgeable about the various aspects of AS, followed by occupational therapists
and counselors. The survey results reflect that remaining staff members are in need of additional knowledge regarding various aspects of AS.

In general, the likelihood of receiving a particular educational support or focus on a skill increased, as did the number of weaknesses for students with AS. The survey results also indicate that students with AS experienced discipline problems infrequently. The results, thus, indicate that those students with more severe weaknesses are receiving greater support.

Diagnoses of depression do not appear to increase with age for students with AS. Diagnoses are most prevalent at ages 12 and 13. In addition, characteristics of depression were most frequently observed at age 13. These finding supports the research indicating that emotional difficulties such as depression are likely to be most evident during adolescence. Therefore, depression does not appear to increase as the child with AS ages.

Diagnoses of anxiety do not appear to increase with age for students with AS. Diagnoses of anxiety disorders were most prevalent at age 8. Characteristics of anxiety were most frequently reported at age 15, followed by age 8 and 13. In general, these findings support the results of the research study cited in the literature review, where adolescents frequently reported high levels of anxiety.

Overall, the likelihood of the student with AS receiving a particular social support does not significantly vary across geographic regions. Whereas the likelihood of receiving a particular social support did not tend to vary based on setting, students in suburban settings were much more likely than those in urban settings to receive social skills training. The survey results further indicated that the likelihood of receiving a particular social support did not vary substantially among the socioeconomic groups.
However, students with AS in upper socio-economic areas were least likely to be receiving multiple social supports.

Overall, there were some differences in type of educational program provided to the student with AS, based on geographic region. For instance, students in the Midwest and Northeast were substantially more likely to receive in-class support services than those in the West. Students in the West were, however, more likely than those in any other region to receive pull-out support services and self-contained instruction. In terms of out-of-district placements, none of the students in the West were receiving this type of program. Whereas type of program did not differ significantly across settings, none of the students in urban areas were reported to have been receiving instruction in out-of-district programs. Students with AS residing in lower socioeconomic areas were most likely, and significantly more likely that those in upper socioeconomic areas to be receiving self-contained instruction. In fact, none of the students with AS in upper socio-economic areas were reported to receive this type of instruction. Thus, the findings indicate that more restrictive program is associated with a lower socioeconomic status, with the exception of out-of-district placements.

Overall, there were some differences in the frequency with which some related services were provided to the student with AS, among the various regions. The results of the study indicated that students with AS who reside in the Northeast were substantially more likely than those in other regions to be receiving counseling. Those in the Midwest were much more likely than those in the South to receive occupational therapy. Additionally, students with AS residing in the West were significantly more likely than
those in the Northeast to receive speech-language therapy. Such differences may be the result of differing educational models or philosophies.

With the exception of counseling and occupational therapy, the likelihood of receiving a related service did not significantly differ across settings. Students with AS residing in urban areas were substantially less likely than those in other settings, to receive these two related services. Therefore, setting does not seem to impact the services provided.

Recommendations for Future Research

The present study utilized survey research that provided opportunities for school psychologists to respond to questions regarding knowledge about AS, as well as programs, services, and supports provided to students with the disorder. Whereas some of the survey items used discrete categories in which participants were asked to select one response, other items required them to select all categories that applied. In addition, a small number of survey items required participants to write in a response.

One interesting finding of the study, as it relates to educational program, is that none of the students with AS residing in the West, in urban areas, or in the upper-middle socioeconomic group were receiving instruction in out-of district placements. Furthermore, none of the students with AS in the upper socioeconomic group were reported to receive self-contained instruction. Additional research on what factors contribute to the likelihood of certain types of programs being provided to the student with AS based on the aforementioned demographic characteristics would be useful.
As Barnhill and Myles (2001) asserted, despite the fact that research indicates that individuals with developmental disabilities, including AS, are prone to depression and anxiety, there has been little research regarding suicidal ideation and gestures within this population. Indeed, a recent literature search of suicide with the AS population yielded virtually no research on this topic. Furthermore, although there is some research regarding depression and anxiety with AS, it appears to be somewhat limited. As noted by Barnhill (2001b), awareness of social differences often results in depression and anxiety during adolescence and young adulthood. Therefore, more research on these disorders within the AS population, along with effective interventions for students with AS exhibiting emotional difficulties, is vital.

Both the results of the present study and the review of pertinent research revealed that students with AS tend to display deficits in interpersonal skills and social communication. Some students with AS also exhibit weaknesses in motor functioning. However, as indicated in the study results, many students with AS were not receiving counseling, speech-language therapy, or occupational therapy services. In addition, only 4% were receiving physical therapy. These findings highlight the need for additional research, in order to examine what factors determine whether these types of services are included in the educational program of a student with AS. Whether lack of such services is due to limited knowledge about the disorder for individuals structuring the student’s educational plan, a limited number of providers, or heavy caseloads, failure to provide needed services can not be remedied unless the underlying causes are identified.

According to Christie (2006), New Jersey, New York, the District of Columbia, Vermont, and Connecticut had the highest per pupil spending among the United States.
In contrast, Arizona, Idaho, and Utah spent the least per pupil. Therefore, it is possible that type and amount of services given to students with disabilities (including AS) are more comprehensive in areas where more money is spent on education.

Differences in educational practices and philosophies among different settings and regions may further help explain differences in services provided to students with AS. In a study conducted by Curtis, Hunley, and Chesno Grier (2002), the findings indicated that school psychologists in rural settings served fewer students through consultation than those in urban and suburban settings.

It is also possible that there is a shortage of related service providers in some areas or regions. Lack of providers is likely to translate to limited service for students. As NASP (NDG) noted, the ratio of students to each of the three disciplines likely to provide mental health services in the school setting (school psychologists, social workers, and counselors) is two to three times greater than the maximum ratio recommended by each profession. As Curtis, Hunley, and Chesno Grier (2002) noted, school psychologists working with higher caseloads tended to engage in less consultation, individual and group counseling, and inservice training programs, in comparison to school psychologists working with lower numbers of students.

When there are not adequate numbers of providers within the school, the ability to provide adequate and effective service to students is compromised. The result of a shortage of providers, as stated by NASP, no date given (NDG), is the inability for schools to provide comprehensive mental health services that sufficiently address the continuum of prevention to intervention. Thus, research that examines the extent to which such factors such as geographic region, setting, provider-to-student ratio, and socio-
economic status have an effect on the type of supports, services, and educational programming provided to students with disorders such as AS would be beneficial.

Perhaps most importantly, however, there is a need for research that examines ways educational staff can be more sufficiently trained about and made aware of AS and ways to effectively provide support to students with the disorder. As noted, the study results revealed perceived limited knowledge about AS for many educational professionals, including general education teachers. Given that most students with AS are instructed in the general education classroom, as stated by Little (2002), it is vital to examine how general education teachers, in particular, can be more effectively prepared to meet the needs of students with AS.

Implications for Practitioners

The present study was designed to assess the level of knowledge that school psychologists and other educational staff have about AS. Adequate knowledge about various aspects of AS will make it possible to meet the academic, social, and emotional needs of students with this disorder. Information was also obtained with regard to what types of supports and services are most often provided to students with AS, frequency of discipline problems, and frequency of emotional difficulties such as depression and anxiety.

The results of this study clearly indicated that, whereas school psychologists and speech-language specialists are perceived to be quite knowledgeable about various aspects of AS, many other professional staff members are not. Although special education teachers, counselors, and occupational therapists appear to have sufficient
knowledge about the disorder, general education teachers, enrichment teachers, physical therapists, adaptive physical education teachers, and school disciplinarians have relatively little knowledge about various aspects of AS, as indicated by the survey results. Given these findings, it is essential for educational staff to be given more training in AS. This will enable educational professionals to more effectively accommodate for and meet the needs of students with this disorder. Furthermore, given that school psychologists and speech-language specialists appear to be highly knowledgeable about AS, these individuals may be among the most qualified individuals to provide training and support to staff. Training will be especially important to general education teachers since, as noted by Myles and Simpson (2002), most students with AS receive the majority of their instruction in the general education classroom. Additionally, since occupational therapists and counselors appear to have sufficient knowledge about many aspects of AS, they can also provide support and consultation to teachers and other staff working with this population.

One surprising finding, for instance, is that despite the knowledge level that speech-language specialists, counselors, and occupational therapists, have about AS, a large portion of students were reported to not be receiving services from these individuals. As stated by Myles and Simpson (2002), AS is primarily a social disorder. Webb et al. (2004) further noted that social skills deficits of individuals with autism spectrum disorders will negatively impact interpersonal relationships. Therefore, participation in a social skills group, along with instruction in various interpersonal skills, can be effective goals in a counseling setting. Likewise, because weaknesses in social communication and pragmatic language are generally evident in students with AS, as
noted by Church et al. (2000), speech-language specialists are most qualified to provide
direct intervention and support in these areas.

As Attwood (1998) asserted, children with AS often display weaknesses in
manual dexterity and handwriting. Therefore, occupational therapy should also be a part
of the student’s educational program. In addition, although physical therapists are clearly
perceived to be in need of more training about AS, they can also provide vital service to
students displaying weaknesses in skills such as locomotion, balance, and ball skills,
other areas of weakness often observed, as noted by Attwood (1998).

Because many children and adolescents with AS are likely to experience
depression and anxiety, as noted in the results of this study and in the literature review, it
is important to screen students with AS for these types of emotional problems.
Furthermore, for students with AS who experience emotional depression and/or anxiety,
counseling services should be provided in order to address these types of concerns. Even
if the student with AS does not show overt signs of depression and anxiety, practitioners
should still consider screening for these disorders. As Myles and Simpson (2002) stated,
children with AS may deny the existence of such emotional difficulties or fail to perceive
themselves as having problems. Nonetheless, concerns may be evident.

Although the results of the study found that, in general, the likelihood of receiving
supports or focus on skills generally increased as did the degree of need for students with
AS, there were some instances where this was not the case. Students with more severe
needs were not always more likely to receive a support or instruction in a particular skill
area. Therefore, practitioners can help structure a more appropriate program by first
assessing the student with AS in various social, emotional, behavioral, and academic
skills. Although Safran et al. (2003) recommended utilizing comprehensive assessment measures to assess the areas of communication skills, pragmatic language, comprehension, motor skills, social and emotional functioning, cognitive functioning, and sensory processing in order to evaluate and diagnose young children with AS, such assessment procedures can also help evaluate the progress and needs of older students with AS.
REFERENCES


Jackson, D. A., Jackson, N. F., & Bennett, M. L. (1998). Teaching social competence to youth and adults with developmental disabilities, Austin, TX: PRO-ED.


New Jersey State Board of Education. (2003). New Jersey Administrative Code, Title 6A, Chapter 14, Special Education.


Appendix A

Dear colleague,

I am a school psychologist who is currently working towards a doctorate degree at the Philadelphia College of Osteopathic Medicine. As part of my dissertation, I have developed a survey designed to assess school psychologists’ knowledge and perceptions about Asperger’s syndrome. A secondary purpose of the survey is to gain information regarding educational programming and services provided to students with this disorder.

Your participation in this study would be greatly appreciated. Should you choose to participate, please complete the enclosed survey and return it to me in the envelope provided. By returning the form, you are consenting for the information to be utilized in the study. Should you have any questions about the survey or study, you may contact me at (856) 346-2926. You may also contact Dr. Diane Smallwood at (215) 871-6564.

No personal identifying information will be included on the survey and the surveys will not be coded. Therefore, your responses will be completely anonymous. The surveys will also be confidential and access to the forms will be limited to Dr. Smallwood and me.

I am also enclosing a response postcard. In a few weeks, I will be mailing out reminder letters, in an effort to get back as many surveys as possible. Therefore, if you choose to complete the survey, please mail the postcard back separately. Doing so will enable me to take your name off of the list for the reminder mailing.

If you are interested in receiving information about the results of the study once it is completed, you may request this information by calling me at the phone number listed above.

Thank you for your time. Your assistance is greatly appreciated.

Sincerely,

Kelly L. Herman, Ed. S., NCSP
School Psychologist
Appendix B

A. Background/Demographic Information

1. What is your level of education?
   - Master’s Degree
   - Education Specialist
   - Doctorate
   - Other

2. In what year did you obtain your highest degree?

3. How many years have you been employed as a school psychologist?
   - 1 to 5
   - 6 to 10
   - 11 to 15
   - 16 to 20
   - 21 or more

4. How many years have you been employed in your current position?
   - 1 to 5
   - 6 to 10
   - 11 to 15
   - 16 to 20
   - 21 or more

5. What is the size of the district in which you are currently employed?
   - < 100 students
   - 101 to 300
   - 301 to 500
   - 501 to 700
   - 701 to 900
   - > 900 students

6. With which grade levels do you work? (check all that apply)
   - preschool
   - elementary
   - junior high
   - high school
   - post secondary (ie: vocational/abilities training for 18 to 21)

7. Which of the following best describes the setting in which you are employed?
   - Rural
   - Urban
   - Suburban

8. What is the average household income level of the families residing in your district?
   - Upper socio-economic class
   - Upper middle socio-economic class
   - Middle socio-economic class
   - Lower socio-economic class
9. In what state are you employed? ___________________

10. In what state do you reside? ___________________

11. How would you rate your level of knowledge about the social deficits often present with Asperger’s Syndrome?  

<table>
<thead>
<tr>
<th>Little or no knowledge</th>
<th>Somewhat knowledgeable</th>
<th>Very knowledgeable</th>
<th>Expert level</th>
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12. How would you rate your level of knowledge about the executive function deficits often present with Asperger’s Syndrome?

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<th>Expert level</th>
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</thead>
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</table>

13. How would you rate your level of knowledge about the academic deficits often present with Asperger’s Syndrome?

<table>
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<th>Very knowledgeable</th>
<th>Expert level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

14. If you feel at least somewhat knowledgeable about Asperger’s, from what source did you primarily learn about the disorder?  

- University or College training program  
- Workshops or seminars  
- Independent study  
- Parents of children with the disorder  
- Other  

15. How many children diagnosed with Asperger’s have you worked with in your capacity as a school psychologist? (either through evaluation, case management, consultation, etc.)  

<table>
<thead>
<tr>
<th>1 to 5</th>
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<th>16 or more</th>
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<td></td>
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</tbody>
</table>

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**B. Student Information**

Please think of one particular child, diagnosed with Asperger’s with whom you currently or have previously worked.

1. What is the age of the child (or the age during which you worked with the child)? ___________________

2. At approximately what age was the child first diagnosed? (if known) ___________________
3. How was the diagnosis made? (if known)  
   ____ by a neurologist or psychiatrist based on child study team evaluations and examination of the child  
   ____ by a neurologist or psychiatrist based on input provided by the parent and examination of the child  
   ____ other (please explain)  

4. Was the child referred for special education services?  
   ____ yes  ____ no  
   If so, at what age? (if known)  

5. What, if any, comorbid conditions has the child been diagnosed with? (if known)  
   ____ ADHD  
   ____ Depression  
   ____ Bipolar Disorder  
   ____ Anxiety  
   ____ Obsessive-Compulsive Disorder  
   ____ other  

6. Regardless of formal diagnoses, which of the following characteristics does the child demonstrate?  
   ____ attentional difficulties  
   ____ hyperactivity and/or impulsivity  
   ____ depression  
   ____ anxiety  
   ____ obsessional patterns of thought or obsessive-compulsive behaviors  

7. Please use the following list to select weaknesses or areas of need with this particular child  
   ____ decision-making  
   ____ perspective-taking  
   ____ anger management  
   ____ emotional regulation  
   ____ self-control  
   ____ attention/concentration  
   ____ labeling/identifying emotions in self and others  
   ____ decoding nonverbal behavior in others  
   ____ appropriate use of nonverbal behavior  
   ____ eye contact  
   ____ conflict resolution  
   ____ peer cooperation  
   ____ social communication  
   ____ turn-taking  
   ____ interpersonal skills  
   ____ peer interaction
8. What type of educational program is the child receiving?
   - general education
   - supplemental instruction such as pull-out support service
   - in-class support
   - pull-out replacement resource instruction
   - self-contained within district
   - out-of-district placement
   - other

9. What, if any, related services does the child receive? (check all that apply)
   - Adaptive Physical Education
   - Counseling
   - Occupational Therapy
   - Physical Therapy
   - Speech/Language Therapy

10. If the child is receiving speech/language services, what is the focus of those services? (check all that apply)
    - pragmatic language
    - prosody
    - intonation
    - nonliteral interpretation (metaphors, similes, etc.)
    - other (please list)________________________

11. If the child receives counseling services, what is the focus of these services? (check all that apply)
    - appropriate use of nonverbal behavior
    - decoding nonverbal behavior of others
    - decision-making
    - labeling/identifying emotions in self and others
    - perspective-taking
    - cognitive restructuring
    - attribution retraining
    - exploring and examining alternatives (to address dichotomous thinking)
    - anger management
    - emotional regulation
    - increasing self-control/behavioral regulation
    - correcting cognitive distortions and dysfunctional beliefs
    - other (please list)________________________

12. If the child is receiving occupational therapy services, what is the focus of these services? (check all that apply)
    - visual-motor coordination
    - fine motor skills
    - written language (letter formation/handwriting)
    - sensory integration
    - other
13. If the child is receiving physical therapy services, what is the focus of these services? (check all that apply)  
___ gross motor skills  
___ hand-eye coordination (catching, throwing, kicking a ball, etc.)  
___ other  

14. If the child is receiving adaptive physical education services, what is the focus of these services? (check all that apply)  
___ pre-teaching skills for physical education class  
___ practice/reinforcement of skills for P.E. class or physical activities/games  
___ gross motor skills  
___ eye-hand coordination  
___ other  

15. Does the child receive aide services and, if so, what type?  
___ individual aide  
___ classroom aide  
___ none  
___ other (please fill in) ________________________  

16. When are aide services provided? (check all that apply)  
___ academics  
___ enrichments (art, p.e., music, etc.)  
___ lunch  
___ recess  
___ homeroom  
___ hallway (moving from class to class)  
___ to/from bus  

17. Please rate the child on the frequency of discipline problems (those resulting in being sent to the principal, detention, or suspension)  
___ very often  
___ somewhat often  
___ occasionally  
___ rarely  
___ never  

18. Does the child have modified discipline expectations?  
___ yes  
___ no  

19. How would you rate the student’s level of social functioning, as compared with other students of the same grade or age?  
___ excellent  
___ good  
___ fair  
___ poor  

20. How would you rate the child’s level of academic functioning, as compared with other students of the same grade or age?  
___ excellent  
___ good  
___ fair  
___ poor
21. What types of social supports, if any, does the child receive? (check all that apply)

- social skills training
- coaching from teacher or aide
- peer coaching
- nonverbal cues
- verbal cues
- other

22. If the child receives social skills training or instruction, what skills are addressed? (check all that apply)

- conflict resolution
- experience-sharing
- reciprocal communication/interaction
- social referencing
- appropriate use of nonverbal behavior
- interpreting nonverbal behavior in others
- turn-taking
- perspective-taking
- other

23. Which, if any, of the following instructional strategies are utilized in the child’s educational program? (check all that apply)

- Carol Gray’s Social Stories
- Comic Strip Conversations
- social autopsies
- social scripts
- other
Appendix C

Students receiving General Education Program by Region

Crosstabulation 1

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Chi-Square Tests 1

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a 0 cells (.0%) have expected count less than 5. The minimum expected count is 15.82.
### Students Receiving Supplemental Instruction by Region

#### Crosstabulation 2

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<th>Expected Count</th>
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#### Chi-Square Tests 2

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a 0 cells (.0%) have expected count less than 5. The minimum expected count is 18.04.
Students Receiving In-Class Support by Region

Crosstabulation 3

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Chi-Square Tests 3

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a 0 cells (.0%) have expected count less than 5. The minimum expected count is 17.60.
### Students Receiving Pull-Out Replacement by Region

#### Crosstabulation 4

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#### Chi-Square Tests 4

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<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>12.043(a)</td>
<td>3</td>
<td>.007</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>10.556</td>
<td>3</td>
<td>.014</td>
</tr>
</tbody>
</table>

*a* 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.57.
Students Receiving Self-Contained Program by Region

### Crosstabulation 5

<table>
<thead>
<tr>
<th>Region</th>
<th>Self-Contained Count</th>
<th>Self-Contained Expected Count</th>
<th>Total Count</th>
<th>Total Expected Count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midwest</td>
<td>39.0</td>
<td>7.0</td>
<td>46.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>39.9</td>
<td>6.1</td>
<td>46.0</td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>58.0</td>
<td>4.0</td>
<td>62.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>53.7</td>
<td>8.3</td>
<td>62.0</td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>41.0</td>
<td>4.0</td>
<td>45.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>39.0</td>
<td>6.0</td>
<td>45.0</td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>37.0</td>
<td>12.0</td>
<td>49.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>42.5</td>
<td>6.5</td>
<td>49.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>175.0</td>
<td>27.0</td>
<td>202.0</td>
<td></td>
</tr>
</tbody>
</table>

### Chi-Square Tests 5

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>8.711(a)</td>
<td>3</td>
<td>.033</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>8.443</td>
<td>3</td>
<td>.038</td>
</tr>
</tbody>
</table>

Note: 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.01.
Students Receiving Out-of-District Program by Region

Crosstabulation 6

<table>
<thead>
<tr>
<th>Region</th>
<th>Count</th>
<th>Expected Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midwest</td>
<td>44.0</td>
<td>44.9</td>
</tr>
<tr>
<td>Northeast</td>
<td>60.0</td>
<td>60.5</td>
</tr>
<tr>
<td>South</td>
<td>44.0</td>
<td>43.9</td>
</tr>
<tr>
<td>West</td>
<td>49.0</td>
<td>47.8</td>
</tr>
<tr>
<td>Total</td>
<td>197.0</td>
<td>197.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Out-of-District</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>46.0</td>
<td>1.0</td>
</tr>
<tr>
<td>62.0</td>
<td>1.5</td>
</tr>
<tr>
<td>45.0</td>
<td>1.1</td>
</tr>
<tr>
<td>49.0</td>
<td>1.2</td>
</tr>
<tr>
<td>202.0</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Chi-Square Tests 6

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>2.068(a)</td>
<td>3</td>
<td>.558</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>3.148</td>
<td>3</td>
<td>.369</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>202</td>
<td>3</td>
<td>.558</td>
</tr>
</tbody>
</table>

a 4 cells (50.0%) have expected count less than 5. The minimum expected count is 1.11.
### Students Receiving Other Educational Program by Region

#### Crosstabulation 7

<table>
<thead>
<tr>
<th>Region</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Midwest</td>
<td>44.0</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>42.6</td>
<td>3.4</td>
</tr>
<tr>
<td>Northeast</td>
<td>52.0</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>57.4</td>
<td>4.6</td>
</tr>
<tr>
<td>South</td>
<td>42.0</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>41.7</td>
<td>3.3</td>
</tr>
<tr>
<td>West</td>
<td>49.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>45.4</td>
<td>3.6</td>
</tr>
<tr>
<td>Total</td>
<td>187.0</td>
<td>15.0</td>
</tr>
</tbody>
</table>

#### Chi-Square Tests 7

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>11.434(a)</td>
<td>3</td>
<td>.010</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>13.583</td>
<td>3</td>
<td>.004</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>202</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a 4 cells (50.0%) have expected count less than 5. The minimum expected count is 3.34.