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## The Early Identification of Autism Spectrum Disorder in Preschool Settings

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# The Early Identification of Autism Spectrum Disorder in Preschool Settings

by

Samantha J. Drusch, B.A.

MSW Clinical Research Paper

Presented to the Faculty of the  
School of Social Work  
St. Catherine University and the University of St. Thomas  
St. Paul, Minnesota  
in Partial fulfillment of the Requirements for the Degree of

Master of Social Work

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The Clinical Research Project is a graduation requirement for MSW students at St. Catherine University/University of St. Thomas School of Social Work in St. Paul, Minnesota and is conducted within a nine-month time frame to demonstrate facility with basic social research design that is approved by a research committee and the university Institutional Review Board, implement the project, and publicly present the findings of the study. This project is neither a Master's thesis nor a dissertation.

### **Abstract**

Caregivers often recognize the signs of Autism Spectrum Disorder (ASD) in their child before age two, yet, they often do not receive a diagnosis until after the child is four years old. Preschool teachers have high levels of exposure to the developing child and so are in an ideal position to identify children who may have ASD and refer them for assessments which may lead to access to early intervention services. This research sought to better understand whether or not preschool teachers are familiar with signs of ASD in young children, comfortable discussing concerns with parents, and knowledgeable about services to which young children with ASD may benefit. This research is important to the social work field because it is imperative to ensure public agencies are working to help families gain access to services which will aid their children in reaching their full potential.

The sample in this study consisted of 84 preschool teachers, many of whom were Caucasian (78%), female (90.6%), and held a college degree (80%). The results of this study found preschool teachers to have a moderate level of knowledge regarding ASD symptoms regardless of experience. In general teachers held positive perceptions about mainstreaming and those who have had training specific to inclusion had more positive perceptions about mainstreaming than those who did not ( $p = .026$ ). Teachers responded with high levels of comfort voicing their concerns about child development to parents, and teachers with greater experience reported feeling more comfortable addressing their concerns with parents. Teachers in this study reported having knowledge of services available to families with children with ASD and there was no association between teachers experience or education level and their familiarity with these services.

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### The Early Identification of Autism Spectrum Disorder in Preschool Settings

The American Psychiatric Association (APA, 2013) defines Autism Spectrum Disorder (ASD) as characterized by deficits in social communication and interactions as well as restricted and repetitive patterns of behavior, interests and activities. Many individuals with ASD also have intellectual or language impairments, deficits in motor abilities, self-injurious behaviors, and a comorbidity of anxiety and depression (APA, 2013). The Centers for Disease Control and Prevention (CDC, 2014) have reported that one out of every 68 children has been identified with ASD. This disorder is four to five times more common in males than in females, leading to the belief that genetics may play a significant role (APA, 2013; CDC, 2014). ASD is found among all racial, ethnic, and socioeconomic groups (CDC, 2014).

Since its recognition as a diagnosis in the mental health field's *Diagnostic and Statistical Manual of Mental Disorders, Third Edition* (DSM-III) in 1980, what we now consider as ASD has previously held a variety of diagnostic labels. Because ASD is a relatively new label for what were previously considered separate disorders it is important to briefly discuss the changes from the DSM-III to today's DSM-V in order to understand the literature being discussed in this paper. The DSM-III coined the term "Pervasive Developmental Disorders" (PDD) to encompass three disorders which now all fall under the diagnosis of ASD. The DSM-III claimed PDDs are characterized by "*distortions* in the development of multiple basic psychological functions that are involved in the development of social skills and language, such as attention, perception, reality testing, and motor movement" (APA, 1980, p. 86). Under this category were three

disorders: (1) Infantile Autism, (2) Childhood Onset Pervasive Developmental Disorder, and (3) Atypical Pervasive Developmental Disorder.

In 2000, this disorder was revised when the APA published the DSM-IV-TR. The term Pervasive Developmental Disorders was kept as a category which was expanded to include five disorders characterized by “severe and pervasive impairment in several areas of development: reciprocal social interaction skills, communication skills, or the presence of stereotyped behavior, interests, and activities” (APA, 2000). The disorders under the category of PDD were: (1) Autistic Disorder, (2) Rett’s Disorder, (3) Childhood Disintegrative Disorder, (4) Asperger’s Disorder, and (5) Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS) (APA, 2000).

The most recent version of the DSM, the fifth edition, eliminated the term PDD and with it the distinction of the five disorders that fell under its category. The DSM-V now classifies these disorders as Autism Spectrum Disorder (ASD) whereby symptoms fall along a continuum (APA, 2013). For the purposes of this paper, and to be consistent with the current version of the DSM, disorders which may have previously been labeled as a PDD will be referred to as ASD.

The DSM-V recognizes three distinct levels of ASD severity (APA, 2013). Level one includes individuals who require the least amount of support (APA, 2013). These individuals may have received a diagnosis of Aspergers Disorder in the DSM-IV. Those with ASD level one find initiating social interactions difficult, lack interest in their social worlds, have difficulty switching between activities, and exhibit inflexible behaviors (APA, 2013). ASD level two severity includes those who have deficits in verbal and nonverbal communication, limit their initiation of social interaction, find it hard to cope



with change, and have restricted and repetitive behaviors (APA, 2013). The most severe cases of ASD are found in individuals with level three severity. These people have severe deficits in verbal and nonverbal communication skills, provide minimal responses to others, have extreme trouble coping with change, display restricted and repetitive behaviors, and show signs of great distress when changing tasks (APA, 2013).

In order for individuals to meet diagnostic criteria for ASD, symptoms must be present in the first two years of life (APA, 2013). The first symptoms, noticed before a child is one year of age, include delayed language, lack of interest in social interaction, and unusual styles of communication (APA, 2013). During the second year of life, odd and repetitive behaviors become more obvious and typical behaviors during play are often absent (APA, 2013). Screening and diagnosis has been found to be reliable for children as young as 18 months (Dawson, Rogers, Munson, Smith, Winter, Greenon, Donaldson, & Varley, 2010; Kantzer, Fernell, Gillberg, & Miniscalco, 2013). Despite this, many children are not diagnosed until later in life (Daniels & Mandell, 2014; Howlin & Asgharian, 1999; Goin-Kochel, Mackintosh, & Myers, 2006; Mandell, Morales, Xie, Lawer, Stahmer, & Marcus, 2010).

While there is no known cause of ASD, one theory involves research on a part of the brain called the amygdala. The amygdala controls emotions such as anxiety and fear. Researchers have found individuals with ASD to have fewer neurons in the amygdala than those who have not been diagnosed with ASD (Schumann & Amaral, 2006). Other research has found that young children with ASD have larger amygdalae than children without ASD (Lombardo, Chakrabarti, & Baron-Cohen, 2009). This suggests children with ASD have excessive anxiety and fear, potentially contributing to social withdrawal.

Over time, the constant release of cortisol, a steroid hormone that is released in response to stress, may damage the amygdala causing the absence of neurons in adulthood (Lombardo et al., 2009). This research supports the importance of early intervention in reducing stress and helping young children cope with ASD as well as the likelihood of early intervention treatments long-lasting effects into adulthood.

Currently there is not a cure for ASD, but research has shown that early intervention treatment can improve a child's development (CDC, 2014) and in many cases decrease the severity of symptoms (Dawson et al., 2010; D'Elia, Valeir, Sonnino, Fontana, Mammone, & Vicari, 2014; Eldevik, Hastings, Jahr, & Hughes, 2012; Lawton & Kasari, 2012; Lovaas, 1987; McEachin, Smith, & Lovaas, 1993; Nahmias, Kase, & Mandell, 2014; Rogers & Vismara, 2008). As the main deficit for children with autism is social in nature, the argument could be made that preschool is an ideal setting in which children with ASD can learn social skills.

According to the Forum on Child and Family Statistics (2011), 24.1% of children ages zero to four with working mothers receive center-based care, such as early childhood or preschool settings, in the United States. The National Association for the Education of Young Children (NAEYC) is an accrediting organization whose mission it is "to serve and act on behalf of the needs, rights, and well-being of all young children with primary focus on the provision of educational and developmental services and resources" (NAEYC, 2014). There are currently over 6,500 center-based early childhood education programs currently accredited by NAEYC (NAEYC, 2014), and many more early childhood centers which are not accredited by NAEYC.

Agencies which are accredited by NAEYC must use developmentally appropriate practice from teachers who have specialized education about young children and early childhood development (NAEYC, 2009). Teachers in these organizations are taught to modify their teaching strategies to respond to the needs of the individual children in their classrooms (NAEYC, 2014). NAEYC programs also ask that teachers assess the children in their care on an ongoing and regular basis (NAEYC, 2014). These assessments help teachers identify children with disabilities as well as monitor the effects of their curriculum (NAEYC, 2014). The knowledge teachers possess regarding child development coupled with the fact that they are assessing children's development puts these teachers in an ideal position to identify children with developmental delays and disorders, such as ASD, as well as to refer these children for services which can benefit their development.

Young children with ASD can benefit from the Individuals with Disabilities Education Act (IDEA). This act came into existence in the 1970's with the belief that all students with disabilities are to be given a free, appropriate public education (Rosenberg, Westling, & McLeskey, 2008). Services which are included in IDEA are evaluation and eligibility determination, an individualized education plan (IEP), and education in the least restrictive environment (Santrock, 2009). Today IDEA governs how state agencies provide early intervention, special education, and other services to over 6.5 million infants, toddlers, children, and youth with disabilities (United States Department of Education, 2014). Under IDEA Part C, infants, toddlers, and their families receive early intervention services. Children ages three to 21 receive special education services under

IDEA Part B (United States Department of Education, 2014; Center for Parent Information and Resources, 2014).

Statistics from NAEYC (2004) boast of serving 282,733 children birth to two years under IDEA Part C and 701,949 children ages three to five under IDEA Part B (NAEYC, 2014). Part C of IDEA is given \$436 million dollars for programs that serve infants and toddlers through age 2 who have developmental delays and other physical and mental conditions (United States Department of Education, 2014). In Minnesota, children eligible for services under IDEA can receive free services in their home, child care setting or school (Minnesota Department of Education, 2014). Recent data from the Minnesota Department of Education (2014) suggests that many children who receive these services have greater developmental progress than expected. The purpose of this paper is to explore the ways in which NAEYC early childhood educators in Minnesota are identifying and serving young children with ASD.

### **Literature Review**

Many parents recognize signs of ASD several years before receiving a formal diagnosis (CDC, 2014; Daniels & Mandell, 2013; Howlin & Asgharian, 1999; Kozlowski, Matson, Horovitz, Worley, & Neal, 2011; Mandell et al., 2010). Research suggests parents are largely dissatisfied with the process of obtaining an ASD diagnosis for their child (Goin-Kochel et al., 2006). This paper will begin with a discussion about this process. Following the discussion about the process of diagnosis will be a provision of evidence supporting the positive effects of early intervention for children with ASD.

This paper will then present research related to the ability of preschool teachers to identify symptoms of ASD and accuracy when referring for ASD screenings. Following

this will be a discussion of teacher and parent beliefs relating to inclusion in mainstream schools and the benefits of inclusion for ASD children in preschool settings. The literature review will end by providing a rationale for the relevance of this project to social work research and then presenting the conceptual framework, describing Vygotsky's theory of child development.

### **Diagnosing Autism Spectrum Disorder**

In one research study, parents reported visiting an average of four to five clinicians before receiving a diagnosis of ASD (Goin-Kochel et al., 2006). Some research has found that parents are frustrated and dissatisfied with the process of obtaining a diagnosis for their child (Goin-Kochel et al., 2006; Minnesota Department of Health, 2014). Research has also suggested the younger a child is at the time of diagnosis, the more satisfied the parents are with the process (Goin-Kochel et al., 2006; Howlin & Asgharian, 1999).

In order for ASD to be diagnosed, it must have shown signs during the early stages of development (APA, 2013). Parents and caregivers have reported detecting signs of ASD before their child is 18 months old (CDC, 2014; Howlin & Asgharian, 1999; Kozlowski, et al., 2011). Parents have even reported recognizing differences in social, communication, and fine motor skills among their children beginning as young as six months of age (Kozlowski et al., 2011). Research suggests a diagnosis of ASD at age two can be reliable because children who are diagnosed at this age most often maintain their diagnosis at age nine (Lord, Risi, DiLavore, Shulman, Thurm, & Pickles, 2006). Despite the reliability of early diagnosis, many children are diagnosed after age four (CDC, 2014; Daniels & Mandell, 2013; Mandell et al., 2010). One reason providers may be hesitant to

diagnose a child as young as two with ASD could be due to the risk of misdiagnosis (Branson et al., 2008).

Research has, however, found several factors which are associated with age at time of diagnosis. One of the factors associated with age is severity of symptoms. Children who have more severe forms of ASD are diagnosed at a younger age than those with less severe ASD diagnoses (Daniels & Mandell, 2013; Goin-Kochel et al., 2006; Howlin & Asgharian, 1999). A second finding is an association between children from families of greater socioeconomic status (SES) and higher levels of education and younger ages. Those families who are more educated and have a higher SES have children diagnosed with ASD at a younger age (Daniels & Mandell, 2013; Goin-Kochel et al., 2006; Mandell et al., 2010). Third, children who have parents who exhibit more concern about their child's symptoms have a greater likelihood of receiving an earlier diagnosis (Daniels & Mandell, 2013).

Fourth, children whose families have more interactions with the health and education systems prior to diagnosis are more likely to obtain a diagnosis at a younger age (Daniels & Mandell, 2013). Fifth and finally, there are cultural barriers related to receiving an autism diagnosis at a young age. In some cultures, such as the Hmong and Somali cultures, the term "autism" does not exist and there are beliefs that the causes are spiritual (Minnesota Department of Health, 2014). In a study of Somali, Latino, and Hmong families, individuals reported challenges to accessing early intervention services for their children such as language barriers, lack of support, discrimination, the complexity of the system, and transportation issues (Minnesota Department of Health, 2014). Research about factors which influence age at time of diagnosis suggests children

who come from more privileged homes with educated and concerned parents have a greater chance at early diagnosis and intervention. The implications of this research point to the importance of parent awareness and education regarding early intervention and ASD.

### **Evidence Supporting Early Intervention**

For children who have ASD, early intervention could be a crucial piece to preparation for a mainstream kindergarten classroom as well as the future education and learning of those children. Early intervention has shown to be quite successful (Dawson et al., 2010; D'Elia et al., 2014; Eldevik et al., 2012; Lawton & Kasari, 2012; Lovaas, 1987; McEachin et al., 1993; Nahmias et al., 2014; Rogers & Vismara, 2008).

Researchers have found that the effects of early intervention for children who have ASD include achievement of normal intellectual and educational functioning, improvement in language, communication, and reduction in severity of autism symptoms (Dawson et al., 2010; D'Elia et al., 2014; Eldevik et al., 2012; Lawton & Kasari, 2012; Lovaas, 1987; McEachin et al., 1993; Nahmias et al., 2014; Rogers & Vismara, 2008).

Behavioral psychologist, O. Ivar Lovaas (1987) was the first person to study the effects of a highly intensive early intervention for children with ASD. In his study, 47% of the treatment group achieved normal intellectual and educational functioning, had normal IQ scores, and success in the first grade, while only 10% were assigned to classes for profound mental retardation. In Lovaas' control group, only 2% of children achieved normal educational and intellectual functioning and 53% had severe mental retardation. In 1993, Lovaas and his colleagues, McEachin and Smith, returned to the children from Lovaas' 1987 experimental group. At this time, the children were 11.5 years old, and the

researchers discovered the experimental group maintained its gains over the control group. Eight of the 19 children in the original experimental group were indistinguishable from average children on intelligence and adaptive behaviors (McEachin et al., 1993). These results suggest behavioral treatment may produce significant and long-lasting effects for young children with ASD.

It is not within the bounds of this paper to detail the subsequent forms of early intervention treatments which have stemmed from Lovaas' (1987) experiment. It should be known; however, that since this time, researchers have replicated Lovaas' experiment and found similar results (Rogers & Vismara, 2008). Other studies have used Lovaas' concepts, but with treatment of lower intensity, and were able to find similar treatment effects (D'Elia et al., 2014; Eldevik et al., 2012; Nahmias et al., 2014). More current studies also emphasize the importance of involving parents in the treatment process, believing it is crucial for the progress of the child as well as an important aspect of decreasing parental stress (Dawson et al., 2010; D'Elia et al., 2014; Estes, Mercado, Fitzpatrick, Elder, Greenon, Lord, Munson, Winter, Young, Dawson, & Rogers, 2014). In order for children to receive early intervention services, they need to meet criteria for a diagnosis of ASD.

### **Early Identification in Preschool Settings**

The research on the effects of early interventions for ASD suggests the importance of early identification and diagnosis. Preschools are ideal settings for identifying children with developmental delays, such as ASD, and working with parents to access services because preschool teachers work with many children every day and have been trained in child development (Bloch, n.d.; Branson et al., 2008; NAEYC,



2009). Because of this training and experience, preschool teachers should be able to identify children who are not meeting the developmental milestones at a young age.

One study found that preschool teachers are more knowledgeable about ASD than they believe they are, but lack knowledge and experience working with children who have a diagnosis of ASD (Johnson, Porter, & McPherson, 2012). Teachers are found to be most familiar with symptoms of ASD which involve repetitive behaviors, responding poorly to change, and lack of eye contact, while they are least familiar with the symptoms of intellectual impairment and playing with toys in ways other than the intended use of the toy (Johnson et al., 2012). Teachers have also been found to mistakenly identify symptoms of attention-deficit/hyperactivity disorder (ADHD) such as hyperactivity and excessive talking as symptoms of ASD (Johnson et al., 2012). Despite the lack of knowledge among preschool teachers regarding the specifics of ASD, teachers are just as likely to distinguish features of ASD as parents are (Dereu, Raymaekers, Warreyn, Schietecane, Meirsschaut, & Roeyers, 2011).

Studies have shown that preschool teachers can be an effective and reliable source of information when it comes to assessing for signs of ASD (Dereu, Warreyn, Raymaekers, Meirsschaut, Pattyn, Schietecatte, & Roeyers, 2010; Dereu et al., 2011; Kantzer et al., 2013). When children are referred through community sources, such as preschools, for an ASD screening at a young age over 75% of those children meet the diagnostic criteria for ASD and the remaining children are found to have other developmental disorders (Kantzer et al., 2013). When comparing assessments of ASD completed by teachers to assessments of ASD completed by parents, both groups obtain similar results suggesting teachers are just as likely to distinguish between ASD and non-

ASD children as parents are (Dereu et al. 2011). Research in this area suggests a chronic need for education of preschool teachers as these teachers can be reliable sources of information when assessing for ASD (Dereu et al., 2010; Dereu et al., 2011; Johnson et al., 2012; Kantzer et al., 2013).

Several studies have found that both parents of children with ASD as well as individuals with ASD feel a great amount of stigma attached to the diagnosis (Gray, 2002; Linton, 2014; Shtayermman, 2009). Mothers of children with ASD have reported hostile staring, rude comments from others, and experiences of avoidance (Gray, 2002). Parents also hold beliefs that others are critical of the ways in which they have raised their children, not accepting, and make them feel embarrassed (Gray, 2002). Adults who have diagnoses of ASD have reported feelings that their diagnosis has made them feel even more stigmatized (Linton, 2014), and those with the more severe forms of ASD feel the greatest amount of stigma attached to their diagnosis (Shtayermman, 2009). It is possible that early childhood educators do not want to refer children for ASD screenings because of the stigma associated with this diagnosis. However, the evidence for the effectiveness of early intervention suggests preschool teachers should be referring potential developmentally delayed children for assessments in order to rule-out ASD.

### **Inclusion Practices in Schools**

One setting for early intervention to take place is within the school. Since the birth of IDEA, schools have been implementing practices of inclusion in order to ensure children are receiving equal access to an education in the least restrictive environment. Parents and teachers alike tend to agree with the process of inclusive classroom settings (Bennet, Bruns, & Deluca, 1997; Mastropieri & Scruggs, 1996; Odom, 2000). Most

teachers are willing to implement the practices of inclusion; however, many do not believe that their efforts are successful because they do not have an adequate amount of time or the resources necessary to meet the diverse needs of their students (Bennet et al., 1997; Lindsay, Proulx, Thomson, & Scott, 2013; Mastropieri & Scruggs, 1996). Teachers report other challenges such as socio-structural barriers, understanding and managing difficult behavior, and creating inclusive environments (Lindsay et al., 2013). Because of these challenges, teachers report less positive attitudes about inclusive classrooms than parents do (Bennet et al., 1997). Providing specific training related to implementing successful teaching strategies for children with disabilities is crucial to the success of inclusive classrooms (McBride & Schwartz, 2003). Experts in the area of classroom inclusion believe that there is a need for commitment of all parties involved and a need for a strong partnership amongst them (Barton, Lawrence, & Deurloo, 2012; Bennet et al., 1997; Dinnebeil & Rule, 1994).

**Inclusion in preschool settings.** Preschools are settings which typically encompass the four domains of development and learning – physical, social, emotional, and cognitive (NAEYC, 2009). It is a commonly held belief that these domains are closely interrelated, as the NAEYC (2009) position statement reads: “Children’s development and learning in one domain influence and are influenced by what takes place in other domains.” According to this logic, if children with ASD are lacking in social skills, their cognitive, emotional, and physical spheres of development will be impaired as well.

In preschools, children are often provided ample time for play. Play has been found to be an important context in which cognitive development takes place (Piaget,

1962; Roskos & Christie, 2007; Sawyer & DeZutter, 2007). An important facet of play for children is the building of peer relationships. Positive peer relationships are necessary for healthy socioemotional development (Howes, 2008; Prinstein & Dodge, 2008) and children who are rejected may be at risk for depression (Santrock, 2009). When asked, peers recognize differences in special needs children (Hanline & Correa-Torres, 2012). Peers state activities they enjoy with special needs children, but do not identify them as their friends (Hanline & Correa Torres, 2012).

Children with ASD have been found to be less engaged during free-play than average children as well as children with other disabilities (Kemp, Kishida, Carter, & Sweller, 2013). Research suggests children with disabilities have the greatest amount of peer interaction during free-play; however, peer interaction and adult engagement occur less frequently during this time for many children with ASD (Kemp et al., 2013). According to the NAEYC (2009) position statement, this puts ASD children at a disadvantage for all areas of development.

For children with disabilities, most social interactions are with adults; the nature of these interactions is mostly for help or teaching (Hanline & Correa-Torres, 2012). Teachers also engage in less conversational interaction with children who have ASD than with children who have disabilities paired with more attention-seeking behaviors (Hanline & Correa-Torres, 2012). Teachers have been found to respond more positively to children who have mild disabilities, physical disabilities, and do not have a diagnostic label (Huang & Diamond, 2009). Those teachers with more experience teaching, especially with experience teaching children with disabilities, report being more

comfortable having students with disabilities in their classrooms (Huang & Diamond, 2009).

Young children with ASD who receive care in an inclusive setting have shown to have better cognitive outcomes than children who are not in inclusive settings (Nahmias et al., 2014). Research suggests inclusive placements to be important for children with social impairments, adaptive behavior impairments, and basic language skills (Nahmias et al., 2014). While some research has suggested that novel teachers may teach children with diagnosed disorders differently (Eikeseth & Lovaas, 1992; Huang & Diamond, 2009), other research suggests informed and well-trained inclusive preschool settings can improve outcomes for children with ASD (Barton et al., 2012; Lawton & Kasari, 2012; Nahmias et al., 2014).

One strategy preschools should take an advantage of using that has shown to be successful is peer mediation (Barton et al., 2012; Katz & Girolametto, 2013; United States Department of Health and Human Services, Administration for Children and Families, & National Institute of Child Health and Human Development, 2013). Using this strategy, teachers should teach all children basic social skills and encourage children to use these skills during daily activities, especially with children who have disabilities if those children are playing alone (United States Department of Health et al., 2013). Ideally this strategy can help all children learn to be friends and benefit from social interactions.

While preschools may be implementing inclusive practices, children who are not identified with a disorder such as ASD may not be receiving proper intervention services. Therefore, it is of vital importance that preschool teachers are making efforts to identify children with potential developmental delays and refer them for appropriate assessments.

The research questions this paper addresses are: How are early childhood educators addressing concerns of observed developmental delays in meeting suspected criteria for ASD in their schools? How comfortable are these educators at identifying symptoms of ASD, discussing concerns related to ASD with parents, and making referrals for services and assessments?

### **Relevance to Social Work**

Oftentimes ASD is comorbid with anxiety and depressive disorders (APA, 2013). In one study as many as 20% of adolescents and young adults with ASD met criteria for major depressive disorder while 30% met the criteria for generalized anxiety disorder (Shtayermman, 2009). Principle 6.04 of the National Association of Social Workers (NASW, 2008) code of ethics states social workers are called to “engage in social and political action that seeks to ensure that all people have equal access to the resources, employment, services, and opportunities they require to meet their basic human needs and to develop fully.” Early intervention of ASD has been shown to help individuals who have ASD to reach their full potential. Therefore, it is important to make sure public organizations are working to help families gain access to services to which they are eligible for.

### **Conceptual Framework: Vygotsky**

In Vygotsky’s theory of child development, children are described as social creatures who develop their ways of thinking and understanding mainly through social interaction (Santrock, 2009). According to this theory, children’s development depends on tools which are provided by society, and children’s minds are shaped by the cultural context they live in (Cole & Gajdamashko, 2007; Holzman, 2009). Vygotsky coined the

term “zone of proximal development” to describe a range of tasks that are too challenging for a child, but can be learned with assistance of adults or more skilled children (Santrock, 2009). As a child is learning, the adult or peer adjusts the amount of guidance until the child can perform the task on his or her own, a concept known as scaffolding (Santrock, 2009).

Many children with ASD have a learning disadvantage because of their difficulty interacting socially with others. Teachers and peers of children with ASD engage in interaction far less frequently during free-play in preschools (Hanline & Correa-Torres, 2012; Kemp et al., 2013). Because of this, children with ASD may not have as many opportunities to be shaped by their interactions with others. For children with ASD, delays in learning may occur because of a reciprocal lack of interest they may possess in social interactions between their peers and their teachers.

It is important that these children are given the same opportunities to learn from their social worlds as other children are provided. Children with ASD may not advance their zone of proximal development as quickly as other children because they lack social interactions with adults and peers. Therefore, it is imperative that children exhibiting signs of ASD are identified early, so they can have the opportunity to learn and develop alongside their typically developing peers.

In preschools, teachers are trained in child development (NAEYC, 2009) and have had years of experience working with young children. Because of this, preschool teachers should be able to identify children who are not engaging socially with others in a typical way or meeting developmental milestones and adjust their curriculum to meet the developmental needs of such children. Early intervention is of vital importance to the

learning and development of these children. This research project seeks to understand how preschool teachers are addressing concerns of observed developmental delays, such as ASD, among their students and whether or not teachers are comfortable discussing these concerns with caregivers in order for children with ASD to gain access to learning through their social environment.

### **Methods**

The methods section of this paper describes the research study to take place, explains how the variables will be operationalized, and describes how the research questions will be addressed. The research questions this study aimed to answer are: 1) How are early childhood educators addressing concerns of observed developmental delays, such as ASD, in their schools, and 2) How comfortable are these educators at identifying symptoms of autism, discussing concerns related to autism with parents, and making referrals for services and assessments? These questions were addressed using a survey which can be found in Appendix C.

### **Research Design**

The purpose of this study was to explore the ways in which NAEYC early childhood educators in Minnesota are identifying and serving young children with ASD. The research design this project used was a cross-sectional survey created by the researcher. This was done by administering an online survey to NAEYC accredited facilities. Directors of these facilities were asked to distribute the survey to teachers in preschool and toddler classrooms. The survey contained questions along a Likert scale which aimed to measure the experience of preschool teachers working with children with ASD, their ability to identify symptoms of ASD, and their comfort level of working with



children with ASD, discussing concerns about ASD with families, and making referrals for screenings and services when ASD is suspected.

### **Sample**

The population this project was interested in was preschool teachers who teach children ages 16 months to five years. The National Association for the Education of Young Children (NAEYC) is an accrediting organization for early childhood centers. The researcher will use this organization to obtain a sample of early childhood education centers within a certain radius. Approximately 350 directors of centers were contacted. These directors were asked to distribute online surveys to their teaching staff; 85 surveys were submitted online. This sample of participants was a non-probability sample chosen for convenience of obtaining a readily available list of centers which will employ the group which this study examined.

### **Protection of Human Subjects**

This study was reviewed by a research committee and submitted to the St. Catherine University Institutional Review Board. Permission was asked of all the directors of the early childhood education centers before surveys were distributed to staff (Appendix A). The directors distributed the email with the survey's URL, and the researcher never had access to the teachers' names or emails. Upon distribution of the surveys, teachers had the option to participate in the study or decline to participate in the study. Participants received a consent form in the form of an e-mail attachment (Appendix B) informing them of their protection and voluntary nature of participating in this study. Participants implied consent to participate in this study by completing the survey. The researcher ensured the survey was anonymous by disabling the ability to

view identifying information with the results. There were no risks or benefits to participating in this study. The data was stored on a password protected computer belonging to the researcher. After the completion of this study, the data was destroyed from the computer.

### **Data Collection**

The method used to measure results was an online survey using the computer program Qualtrics. The questions on the survey (Appendix B) were developed by the researcher and based on the literature reviewed for this study. The survey was organized into four sections 1) demographic information, 2) experience with autism spectrum disorders, 3) ability to demonstrate understanding of autism spectrum disorder symptoms, and 4) perceptions and experiences working with children and families with disabilities in preschools. The demographic section measured the following variables: age, gender, race, and education level. The second section measured experience with autism spectrum disorders. Experience was operationalized through the following items:

- “How many years have you worked in the field of early childhood education” (9). Response options range from “0-1 years” to “10+ years”.
- “Do you have a degree in the field of early childhood education or child development”
- “Do you have a degree in elementary education” (6).
- “Are you the lead teacher in your classroom” (8). Response options for these questions are “yes” or “no.”
- “During your time working in this field, how many children have you worked with who have autism spectrum disorders” (12).

- “During your time working in this field, how many children have you worked with who have disabilities” (11). Response options for these questions are “None,” “Little (1-4 children),” “Some (5-9 children),” and “A lot (10+ children).”

The third section measured teachers’ ability to demonstrate understanding of ASD symptoms. Understanding of ASD symptoms was operationalized through the following items:

- “Lack of eye contact” (15).
- “Repetitive movements and/or speech” (16).
- “Hyperactivity” (17)
- “Difficulty with change and transitions” (18).
- “Restricted interests” (19).
- “Delays in language” (20).
- “Self-Injurious Behaviors” (21).
- “Impaired social communication skills” (22).
- “Excessive Talking” (23).
- “Spontaneous and unexplained bouts of violence” (24).

Response options for these items ranged from 1 (“Disagree”) to 2 (“Neither agree nor disagree”) to 3 (“Agree”) along a Likert Scale.

The fourth section included measurement of the following variables 1) beliefs about including children with ASD in regular preschool classrooms, 2) comfort level with discussing concerns regarding ASD with caregivers, 3) willingness to refer families for autism screenings and outside services, and 4) familiarity with services for children with

ASD. Beliefs about mainstreaming in preschool classrooms was operationalized with the following items:

- “I have received specific training on including children with autism spectrum disorder in my classroom” (25).
- “I believe children with autism spectrum disorders should go to special schools” (28).
- “I believe my organization can support children with some disabilities, but not autism spectrum disorder” (29).
- “I believe my organization can support children with autism spectrum disorder” (31).
- “It would be dangerous to have a child with autism spectrum disorder in my classroom” (32).
- “I feel comfortable having a child with autism spectrum disorder in my classroom” (35).

Response options for these items ranged from 1 (“Strongly Disagree”) to 3 (“Neither Agree nor Disagree”) to 5 (“Strongly Agree”) along a Likert Scale.

Comfort level with discussing concerns regarding ASD with caregivers was operationalized with the following items:

- “When I suspect a child has a learning delay, I feel comfortable discussing this with his or her caregivers” (26).
- “I fear having conversations with caregivers when I suspect their child has a developmental delay such as autism spectrum disorder” (33).

- “When I suspect a child has autism spectrum disorder, I feel comfortable expressing my concerns to his or her caregiver(s)” (34).
- “At least once I have expressed concern about a child having autism spectrum disorder and the caregiver(s) responded with hostility” (39).
- “In general, I believe caregivers appreciate it when I share concerns with them about their child’s development” (41).
- “If I suspected a child had autism spectrum disorder, I would not discuss my concerns with his/her caregiver(s)” (43).

Response options for these items ranged from 1 (“Strongly Disagree”) to 3 (“Neither Agree nor Disagree”) to 5 (“Strongly Agree”) along a Likert Scale.

Willingness to refer families for ASD screening and outside services was operationalized with the following items:

- “When I suspect a child has autism spectrum disorder, I always provide his or her caregiver(s) with referrals for diagnostic assessments and services” (30).
- “When a child is suspected to have autism spectrum disorder, my organization feels that we can teach that child without talking directly to parents about seeking assessments or outside services” (36).

Response options for these items ranged from 1 (“Strongly Disagree”) to 3 (“Neither Agree nor Disagree”) to 5 (“Strongly Agree”) along a Likert Scale.

Familiarity of services for children with ASD was operationalized with the following items:

- “I am familiar with the Individuals with Disabilities Education Act (IDEA)” (40).

- “I am aware that young children with autism spectrum disorder can receive free assessments and intervention services through Early Childhood Special Education Programs” (42).

In order to increase reliability and validity, the survey was reviewed by the researcher’s committee members as well as colleagues in the field of early childhood education and compared to the literature.

### **Data Analysis**

**The sample.** In order to describe the respondents to the survey, descriptive statistics were run on questions one through four (age, sex, race, and education level). A frequency distribution was run on these variables and a bar chart was produced. These results were tallied in order to understand the sample being surveyed.

**Experience.** Using the question: How many years of experience does the sample have working in the field of early childhood, frequency distributions were run to determine the number of years in early childhood and the average for this sample. Frequency distributions were run on “Do you have a degree in the field of early childhood education or child development” (5) and “Do you have a degree in elementary education” (6). Response options for these questions were “yes” or “no.” These results showed whether this sample reflects NAEYC’s statement that their teachers are educated in the area of child development.

In order to answer this question: Do preschool teachers have experience working with children with autism spectrum disorder and other disabilities, a measure of central tendency was run on questions 11 and 12 to describe the respondents experience with ASD.

**Identification of ASD symptoms.** In order to measure preschool teachers' ability to identify the symptoms of ASD, a frequency distribution was run on the items 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24. Scores for items 17, 23, and 24 were coded in reverse as they are not symptoms of ASD, but rather symptoms of other childhood disorders. Responses ranged from six to 30 with 30 being the greatest degree of understanding of autism symptoms and six being the lowest degree of understanding of ASD symptoms.

**Inclusion.** A frequency distribution was also run on the item: "I have received specific training on classroom inclusion of children with autism spectrum disorder" (25) in order to determine if the sample has received training specific to inclusion of children with ASD. Response options ranged from 1 ("Strongly Disagree") to 3 ("Neither Agree nor Disagree") to 5 ("Strongly Agree") along a Likert Scale. Responses to this question will support NAEYC's statement that its agencies are serving children under the individuals with disabilities education act (IDEA) and are prepared to do so.

The question: What are teachers' perceptions about including children with autism spectrum disorder in their classroom was examined by running a frequency distribution on items 28, 29, 31, 32, and 35. Together these items created the inclusion scale. Possible scores on this scale ranged from five to 25 with 25 being the most positive attitude towards classroom inclusion at the preschool level.

**Comfort voicing concerns to parents.** This survey sought to answer the question: Are preschool teachers comfortable addressing concerns regarding developmental delays with caregivers? This question was addressed by running a frequency distribution on the items 26, 33, 34, 41, and 45. These items made up the comfort scale score where possible

scores range from five to 25 with 25 being the greatest degree of comfort a teacher can feel with discussing concerns with parents.

***Referrals.*** In order to understand whether or not teachers are referring children for screenings and other services when they suspect a child to have ASD, a frequency distribution was run on the items: “When a child is suspected to have autism spectrum disorder, my organization feels we can teach that child without talking directly to parents about seeking assessments or outside services” (36) and “When I suspect a child has autism spectrum disorder, I always provide his or her caregiver(s) with referrals for diagnostic assessments and services” (30). The response options for these questions ranged from 1 (“Strongly Disagree”) to 3 (“Neither Agree nor Disagree”) to 5 (“Strongly Agree”) along a Likert Scale. Responses for item 36 were reversed when coding. Possible scores ranged from two to ten with ten meaning a teacher is the most likely to seek outside referral.

***Familiarity with services for children with disabilities.*** This survey sought to answer the question: Is the sample familiar with services for children with disabilities? The next research question asked: Are teachers familiar with services for children with disabilities? Items 40 and 42 were used to determine whether or not the sample is familiar with IDEA or free assessment and interventions for children with disabilities, including ASD. Responses ranged from two to ten with ten being the greatest degree of familiarity with services for children with autism.

**Teachers’ ability to identify symptoms of autism.**

***Research question one.*** The first research question was whether there is a difference between those who have more experience in the field of early childhood



education and those who have less experience in the field of early childhood education and their ability to recognize symptoms of ASD? The independent variable was the teacher's experience in the field of early childhood education. The dependent variable was the recognition of symptoms scale score which measured the degree to which teachers accurately identify symptoms of ASD. In order to determine whether or not there was a difference, a t-test was used to compare the averages for each group. The hypothesis was that those who have more experience have a greater ability to recognize the symptoms of ASD. So those with more experience will have a higher ASD recognition score (closer to 30). The null hypothesis was that those who have more experience do not have a greater ability to recognize the symptoms of ASD.

**Research question two.** The second research question asked what the relationship is between professional experience working with children with ASD and teachers' ability to recognize symptoms of ASD. The independent variable was the teacher's experience working with children with ASD. The dependent variable was the recognition of symptoms scale score which measures the degree to which teachers accurately identify symptoms of ASD. In order to determine whether or not there was a relationship between experiences with children who have ASD and a teacher's ability to recognize the symptoms of ASD, a Pearson Correlation was used and a scatter plot was produced. The hypothesis was that those who have more experience working with children with ASD will have a greater ability to recognize the symptoms of ASD. So those with more experience will have a higher ASD recognition score (closer to 30). The null hypothesis was that teachers who have more experience working with children with ASD do not have a greater ability to recognize the symptoms of ASD.

**Research question three.** The third research question asked about the difference between teachers who have had personal experiences with children with ASD and those who have not had personal experiences with children with ASD and their ability to recognize symptoms of ASD. The independent variable was the teacher's personal experience with a child or close relative with ASD. The dependent variable was the recognition of symptoms scale score which measured the degree to which teachers accurately identify symptoms of ASD.

In order to determine whether or not there was a difference between those who have and those who do not have personal experience with someone with ASD and a teacher's ability to recognize the symptoms of ASD, a t-test was used. The hypothesis was that teachers who have had a personal experience with a child with ASD will have a greater ability to recognize the symptoms of ASD, and their score will be closer to 30. The null hypothesis was that teachers who have had a personal experience with a child with ASD will not have a greater ability to recognize the symptoms of ASD.

**Inclusion.** The questions in this area sought to understand the training of teachers that is related to inclusion of children with ASD in their classrooms as well as their perceptions about inclusion in the classroom.

**Research question four.** The first question related to inclusion sought to understand the relationship between the experience of teachers who have worked with children with disabilities and a teacher's inclusion scale score. The independent variable in this question was the number of children a teacher has worked with who have disabilities. The dependent variable was the inclusion scale score which measured perceptions about inclusion. The results were measured using a Pearson correlation. The

hypothesis was that teachers with more experience working with children with disabilities will have a higher inclusion scale score (closer to 25). The null hypothesis was that teachers with more experience working with children with disabilities will not have a higher inclusion scale score.

**Research question five.** The next research question asked what the relationship between inclusion training and teachers' inclusion scale scores. The independent variable was whether or not a teacher has had training on including a child with ASD in his or her classroom. The dependent variable was the teacher's inclusion scale score. This question was analyzed using a Pearson correlation. For the purpose of analyzing this question, responses for the independent variable were recoded into two categories. The hypothesis was that teachers who have had training related to inclusion have a higher inclusion scale score (closer to 25) than teachers who have not had training. The null hypothesis was that teachers who have had training related to inclusion do not have a higher inclusion scale score than teachers who have not had training.

**Comfort addressing concerns with caregivers.** This next section of the survey addressed the level of comfort teachers have speaking with caregivers about concerns regarding a child's development. The questions in this area distinguished if there is any association between various factors and a teacher's comfort with sharing information with caregivers.

**Research question six.** The first research question in this area asked: What is the difference between those who have had a negative experience discussing concerns with a parent and those who have not had a negative experience discussing concerns with a parent on their comfort scale scores? The independent variable in this question was

whether or not a teacher has had a negative experience discussing concerns with a parent. The dependent variable was the level of comfort a teacher has with discussing concerns to parents. Data was analyzed using a t-test to determine whether or not there was a difference between groups. For the purpose of this test, responses for the independent variable were recoded into two categories. The hypothesis was that those who have had a negative experience discussing concerns with a caregiver will have a lower comfort scale score (closer to 5) than those who have not had a negative experience. The null hypothesis was that those who have had a negative experience discussing concerns with a caregiver will not have a lower comfort scale score than those who have not had a negative experience.

***Research question seven.*** The second research question was: Is there a difference between those who have had a personal experience with ASD and those who have not had a personal experience with ASD on their comfort scale scores? The independent variable was whether or not a teacher has had a personal experience with ASD. The dependent variable was a teacher's level of comfort with discussing concerns with parents as measured by the comfort scale score. The data was analyzed using a t-test to examine whether or not there was a difference between groups. The hypothesis was that there is a difference between those who have had a personal experience with ASD and those who have not had a personal experience with ASD and their comfort scale scores. The null hypothesis was that there is not a difference between those who have had a personal experience with ASD and those who have not had a personal experience with ASD and their comfort scale scores.

**Research question eight.** The third research question in this category was: Is there a difference between those who have had more years' experience in the field of early childhood education and those who have had fewer years' experience in the field of early childhood education and their comfort scale scores? The independent variable was the number of years in the field of early childhood education. The dependent variable was a teacher's level of comfort discussing concerns with parents as measured by the comfort scale score. To explore whether or not there is a difference, a t-test was used. For the purpose of this data analysis, the responses for the number of years a person has spent in early childhood education was recoded into two categories. The hypothesis was that there is a difference between those who have had more experience in the field of early childhood education and those who have had less experience in the field of early childhood education and their comfort scale scores. The null hypothesis was that there is not a difference between those who have had more experience in the field of early childhood education and those who have had less experience in the field of early childhood education and their comfort scale scores.

#### **Referrals.**

**Research question nine.** The first question regarding referrals was: What is the association between teachers who have a personal experience with an individual with ASD and the teachers' readiness to refer students for screenings? The independent variable was whether or not a teacher has had a personal experience with an individual with ASD. The dependent variable was the readiness of the teacher to refer. A chi-square was run in order to determine if there is a correlation between the two variables. The hypothesis was that teachers who have had personal experiences with an individual with

ASD will be more ready to refer (a score closer to 10) than a teacher who has not had such an experience. The null hypothesis was that teachers who have had personal experiences with an individual with ASD will not be more ready to refer than a teacher who has not had such an experience.

### **Familiarity with services for children with disabilities.**

*Research question ten.* The final research question asked: What is the association between level of education teachers possess and their knowledge about services provided to families and children with disabilities? The independent variable was a teacher's level of education. The dependent variable was a teacher's familiarity with services for children with ASD. A chi-square was run on these variables to determine if there is a correlation between them. The hypothesis was that teachers who have a higher degree of education will be more knowledgeable (a score closer to 10) about these services. The null hypothesis was that teachers who have a higher degree of education will not be more knowledgeable about these services.

### **Findings**

The researcher analyzed the data to answer the following research questions: 1) How are early childhood educators addressing instances of ASD in their schools, and 2) How comfortable are these educators at identifying symptoms of autism, discussing concerns related to autism with parents, and making referrals for services and assessments? These questions were divided into ten small research questions which the researcher split into five sections: (1) teachers' ability to identify the symptoms of ASD, (2) teachers' feelings about inclusion in preschool settings, (3) teachers' comfort addressing concerns with caregivers, (4) teachers' readiness to refer students for

screenings and other services, and (5) teachers' familiarity with services for children with disabilities. The findings related to these research questions will be explained in this section.

### **Sample**

Surveys were e-mailed to 350 directors of NAEYC accredited preschool centers in a Midwestern state. Directors were asked to distribute the online surveys to their teaching staff. A total of 85 surveys were collected. This survey was only approved by the IRB for individuals over the age of 18. The survey was designed so that the first question asked about age; if a person marked s/he was under 18, the survey automatically ended with the message "thank you for participating in this survey." Only one respondent was under 18, therefore there were 84 surveys analyzed. Only 77 respondents answered all survey questions. The survey asked demographic questions regarding age, gender, race, and education.

**Age.** As shown in figure 1, respondents in this study ranged from 18 to over 64 years old. A frequency distribution was run on the variable "age," and found that four respondents (4.7%) are 18-24, 29 respondents (34.1%) are 25-34, 18 respondents (21.2%) are 35-44, 17 respondents (20%) are 45-54, 12 respondents (14.1%) are 55-64, and only one respondent (1.2%) was 65 years or older.

**Gender.** The majority of respondents in this study identified as female (n=77, 90.6%). There were three respondents who identified as male (3.5%). Several respondents (n=5, 5.9%) chose not to answer this question.

**Race.** The majority of respondents reported White/Caucasian as their race (n=67, 78%). The remaining respondents reported their race as Hispanic/Latino (n=3, 3.5%),

mixed race (n=3, 3.5%), Native American/American Indian (n=1, 1.2%), and seven reported a preference of no answer or did not indicate a response (8.2%).

**Education.** The majority of respondents in this study had a degree in higher education (80%) (see figure 2). Of the respondents who answered this question, all but one had at least some college and many had college degrees. For the survey item: “What is your level of education,” one respondent (1.2%) had a high school degree or equivalent, eight respondents (9.4%) had some college, nine respondents (10.6%) had an Associate’s degree, 41 respondents (48.2%) had a Bachelor’s degree, and 18 (21.2%) had a graduate degree. Eight respondents (9.5%) chose not to answer this question. For the survey item: “Do you have a degree in the field of early childhood education,” 33 respondents (38.8%) answered “yes” and 45 respondents (52.9%) answered “no.” Another item asked: “Do you have a degree in elementary education?” For this item, 22 respondents (25.9%) answered “yes,” while 57 respondents (67.1%) answered “no.”

### **Experience of Respondents**

Frequency distributions were run to determine the number of years respondents have worked in the field of early childhood education. The results showed one respondent (1.2%) worked in this field for less than one year, 20 respondents (23.5%) have worked in this field for 1-5 years, 10 respondents (11.8%) have worked in this field for 5-10 years, and 47 respondents (55.3%) have worked in this field for over 10 years.

A measure of central tendency was run to answer the question: Do preschool teachers have experience working with children with disabilities? This question was operationalized with the question: “During your time working in this field, how many children have you worked with who have disabilities?” Possible response options ranged



from one to four, with one being no children and four being ten or more children. Of the 77 respondents who answered this question, the mean response was 2.87 which can be translated to between four and nine children. The standard deviation for this question was .965, the minimum response was one and the maximum response was four. There was supposed to be an additional question on the survey asking how much experience preschool teachers had working with children with ASD, but this question was missed in designing the survey.

### **Ability to Identify ASD Symptoms**

In order to measure preschool teachers' ability to identify the symptoms of ASD, the ASD recognition scale was created. Response options could range from ten to 50 with ten being the lowest degree of understanding ASD symptoms and 50 being the greatest degree of understanding of ASD symptoms. As shown in figure 3, teachers' responses ranged from 29 to 40 with the most responses of 33 (n=10, 11.8), 34 (n=17, 20%), and 35 (n=10, 11.8%). These results suggest preschool teachers have a moderate level of awareness of the symptoms of ASD.

### **Perceptions about Inclusion**

In order to determine if the sample has received specific training on inclusion of children with ASD, a frequency distribution was run on the item: "I have received specific training on classroom inclusion of children with autism spectrum disorder" (25). Response options ranged from 1 ("Strongly Disagree") to 3 ("Neither Agree nor Disagree") to 5 ("Strongly Agree") along a Likert Scale. More respondents agreed to this statement (n=30, 35.3%) than disagreed (n=20, 23.5%), while equal numbers of

respondents strongly disagreed as strongly agreed (n=6, 7.1%). Of the respondents, 12 (14.1%) remained neutral by choosing “neither agree nor disagree.”

An inclusion scale was also created using several items related to degree of comfort with inclusion practices. Possible scores on this scale range from five to 25 with five being the least positive attitudes towards classroom inclusion and 25 being the most positive attitudes towards classroom inclusion at the preschool level. A frequency distribution was run on the inclusion scale. As shown in table 1, responses ranged from 10 to 21 on this scale, with the most responses at 18 (n=15, 17.6%). These results suggest teachers have positive perceptions about inclusion practices in their classrooms.

### **Teachers’ Comfort Voicing Concerns to Parents**

The question: Are preschool teachers comfortable addressing concerns regarding developmental delays with caregivers was addressed by running a frequency distribution on several survey items. Using these items, the Comfort Scale was created. Possible scores on this scale ranged from five to 25 with five being the least degree of comfort a teacher can feel with discussing concerns to parents and 25 being the greatest degree of comfort a teacher can feel with discussing concerns to parents. As shown in table 2, responses ranged from nine to 25. The greatest amount of respondents scored a 20 on this scale (n=12, 14.1%). Of the 69 individuals who had responses on this scale, 37 respondents scored between 19 and 25, suggesting teachers are overall comfortable addressing concerns regarding developmental delays with caregivers.

### **Referrals**

A scale was designed and a frequency distribution was run on the items: “When a child is suspected to have autism spectrum disorder, my organization feels we can teach

that child without talking directly to parents about seeking assessments or outside services” (36) and “When I suspect a child has autism spectrum disorder, I always provide his or her caregiver(s) with referrals for diagnostic assessments and services” (30). Possible scores ranged from two to 10 with two suggesting a teacher is least likely to seek outside referral and 10 suggesting a teacher is most likely to seek outside referral. Scores on the referral scale ranged from four (n=1, 1.2%) to 10 (n=5, 5.9%). As shown on table 3, the most respondents scored 8 on this scale (n=20, 23.5%). These results suggest many teachers are making referrals to caregivers when they suspect a child may have a developmental delay such as ASD.

### **Familiarity with Services for Children with Disabilities**

To answer the question: Are teachers familiar with services for children with disabilities, a frequency distribution was run on the Familiarity with Services scale. This scale was created using a question which asked about teachers’ familiarity with IDEA and a question which asked about teachers’ awareness of free services for children with ASD and other disabilities. Possible scores ranged from two to 10 with two suggesting a teacher is least familiar with services and 10 suggesting a teacher is most familiar with services. Scores varied, ranging from three (n=2, 2.4%) to 10 (n=5, 5.9%). The mode was a score of 8 (n=22, 25.9%). These results suggest many teachers have at least some knowledge of free services available to children with ASD and other disabilities.

### **Research Questions**

#### **Teachers’ ability to identify symptoms of ASD.**

*Research question one.* The first research question was: Is there a difference between those who have more experience in the field of early childhood education and

those who have less experience in the field of early childhood education and their ability to recognize symptoms of ASD? The hypothesis was: Those who have more experience will have a greater ability to recognize the symptoms of ASD. So those with more experience will have a higher ASD recognition score (closer to 50). The null hypothesis was: Those who have more experience do not have a greater ability to recognize the symptoms of ASD.

The results of this study found that those with less experience (0-10 years working in the field of early childhood education) had a mean ASD recognition scale score of 34.66 while those with more experience (over 10 years) had a mean scale score of 34.41. The Levene's Test of Equality of Variance for the independent samples t-test was .318. Since .318 is greater than .05, the Levene's Test is not significant. The p-value for this t-test was .659. Since the p-value is greater than .05, the results of this data are not statistically significant. As a result, the researcher failed to reject the null hypothesis that there is no difference between respondents with greater and less experience in the field of early childhood and their ability to identify the symptoms of ASD.

**Research question two.** The next research question asked: What is the relationship between professional experience working with children with disabilities and teachers' ability to recognize the symptoms of ASD. The hypothesis was: Those who have had more experience working with children with disabilities will have a higher ASD recognition score (closer to 50). The null hypothesis was: Teachers who have more experience working with children with disabilities do not have a greater ability to recognize the symptoms of ASD.

Using a Pearson Correlation, the calculated correlation ( $r = -.180$ ,  $p = .131$ ) indicates a weak, negative correlation. Since the p-value ( $p = .131$ ) is greater than .05,

the researcher failed to reject the null hypothesis that teachers with more experience working with children who have disabilities will not have a greater ability to recognize the symptoms of ASD. Future research should measure teachers experience with ASD children to determine if there is a difference among those individuals on ASD recognition of symptoms.

**Research question three.** The third research question asked: Is there a difference between those who have had a personal experience with children who have ASD and those who have not had a personal experience with children who have ASD and teachers' ability to recognize the symptoms of ASD. The hypothesis for this question was: Teachers who have had a personal experience with a child with ASD will have a greater ability to recognize the symptoms of ASD, and their score will be closer to 30. The null hypothesis was: Teachers who have had a personal experience with a child with ASD will not have a greater ability to recognize the symptoms of ASD.

The results of this study found that those with a personal connection to an individual with ASD had a mean ASD recognition scale score of 34.53 while those without a personal connection to an individual with ASD had a recognition scale score of 34.50. The Levene's Test of Equality of Variance for the independent samples t-test was .473. Since .473 is greater than .05, the Levene's Test is not significant. The p-value for this t-test was .961. Since the p-value was greater than .05, the results of this data are not statistically significant. As a result, the researcher failed to reject the null hypothesis that there is no difference between teachers who have had a personal experience and those who have not in their ability to recognize the symptoms of ASD.

**Inclusion.**

**Research question four.** The first research question related to inclusion was: What is the relationship between the experience of teachers who have worked with

children with disabilities and a teacher's inclusion scale score? The hypothesis was that teachers with more experience working with children with disabilities will have a higher inclusion scale score (closer to 25). The null hypothesis was that teachers with more experience working with children with disabilities will not have a higher inclusion scale score.

Using a Pearson Correlation, the calculated correlation ( $r = .218$ ,  $p = .074$ ) indicates a weak, positive correlation. Since the p-value ( $p = .074$ ) is greater than .05, the researcher failed to reject the null hypothesis that teachers with more experience working with children with disabilities will not have a higher inclusion scale score.

**Research question five.** The next research question asked what the relationship between teachers' training about inclusion and teachers' inclusion scale scores is. The hypothesis was that teachers who have had training related to inclusion will have a higher inclusion scale score (closer to 25) than teachers who have not had inclusion training. The null hypothesis was that teachers who have had training related to inclusion will not have a higher inclusion scale score than teachers who have not had training.

To analyze this question, a Pearson Correlation was used. The calculated correlation ( $r = .268$ ,  $p = .026$ ) indicates a weak, positive correlation. As the p-value ( $p = .026$ ) is less than .05, the researcher was able to reject the null hypothesis. The results of this study support the hypothesis that teachers who have had training about inclusion have more positive feelings about inclusion in their classrooms.

**Teachers' comfort addressing concerns with caregivers.**

**Research question six.** The sixth research question in this study was: What is the difference between those who have had a negative experience discussing concerns with a parent and those who have not had a negative experience discussing concerns

with a parent on their comfort scale scores? The hypothesis was: Those who have had a negative experience discussing concerns with a caregiver will have a lower comfort scale score (closer to 5) than those who have not had a negative experience. The null hypothesis was: Those who have had a negative experience discussing concerns with a caregiver will not have a lower comfort scale score than those who have not had a negative experience.

The variables involved in this question were analyzed using a t-test. The results found that those with a negative experience had a mean score of 19.18 while those who had not had a negative experience had a mean score of 18.73. The difference between these means was -.45. The Levene's Test of Equality of Variance for the independent samples t-test was .639. Because .639 is greater than .05, the researcher failed to reject the null hypothesis that there is a not difference between those who had a negative experience and those who have not had a negative experience on their comfort scale scores.

***Research question seven.*** The next research question asked: Is there a difference between those who have had a personal experience with ASD and those who have not had a personal experience with ASD on their comfort scale scores? The hypothesis was: There is a difference between those who have had a personal experience with ASD and those who have not had a personal experience with ASD on their comfort scale scores. The null hypothesis was: There is not a difference between those who have had a personal experience with ASD and those who have not had a personal experience with ASD on their comfort scale scores.

The results of the t-test for when this question was analyzed found that those who have had a personal experience with ASD had a mean comfort scale score of (20.23) while those who have not had a personal experience with ASD had a mean comfort scale score of (18.31). The difference between these means was 1.92. The Levene's Test of Equality of

Variance for the independent samples t-test was .049. Because .049 is less than .05, this result is statistically significant and the researcher was able to reject the null hypothesis. The results of this study suggest preschool teachers who have had a personal experience with ASD (meaning they have a child or close family member with ASD) feel more comfortable discussing concerns of ASD with parents.

**Research question eight.** The eighth research question was: Is there a difference between those who have had a lot of experience in the field of early childhood education and those who have had little experience in the field of early childhood education and their comfort scale scores? The hypothesis was: There is a difference between those who have had more experience in the field of early childhood education and those who have had less experience in the field of early childhood education and their comfort scale scores. The null hypothesis is that there is not a difference between those who have had more experience in the field of early childhood education and those who have had less experience in the field of early childhood education and their comfort scale scores.

The data was analyzed by using an independent samples t-test. The results of this study found those who have had more experience (10 or more years working in early childhood education) had a mean comfort scale score of 19.83 while those who have had less experience (less than 10 years) had a mean comfort scale score of 17.28. The difference between these means is 2.55. The Levene's Test of Equality of Variance for the independent samples t-test was .001. Since .001 is less than .05, this result is statistically significant and the researcher was able to reject the null hypothesis. The results of this study suggest preschool teachers who have more experience working in the field of early childhood education feel more comfortable discussing concerns about ASD with parents.



**Referrals.**

*Research question nine.* The next research question was: What is the association between teachers who have a personal experience with a person who has ASD and the teachers' readiness to refer students for screenings? The hypothesis was: Teachers who have had a personal experience with a person with ASD will be more ready to refer (a score closer to 10) than a teacher who has not had such an experience. The null hypothesis was: Teachers who have had personal experiences with a person with ASD will not be more ready to refer than a teacher who has not had such an experience.

Of the respondents who had a personal experience with ASD, 3 (27.3%) reported not always providing referrals to caregivers when a child was suspected to have ASD while 8 (72.7%) reported always providing referrals to caregivers when a child was suspected to have ASD. Of the respondents who had not had a personal experience with ASD, 9 (23.7%) reported not always providing referrals to caregivers when a child was suspected to have ASD while 29 (76.3%) reported always providing referrals to caregivers when a child was suspected to have ASD. Respondents who answered "neither agree nor disagree" to this question were not included in this analysis. This crosstabulation demonstrates little difference between those who have had and those who have not had personal experiences with ASD and their readiness to refer. One possible reason could be the small number in this sample who have a child or close relative with ASD compared to those who have not had such an experience. Additionally, even if a respondent has a close relative with ASD, his/her experience of this disorder will be different than a respondent who has a child with ASD.

The p-value for the chi-square of the variables Readiness to Refer and Personal Experience is .807. Since the p-value is greater than .05, the researcher failed to reject the null hypothesis. Therefore, this data does not support the research hypothesis that there is a

significant association between one's personal experience with ASD and their readiness to refer families for services.

**Familiarity with services for children with disabilities.**

*Research question ten.* The final research question was: What is the association between teachers' level of education and their knowledge about services provided to families and children with disabilities? The hypothesis for this question was: Teachers who have a higher degree of education will be more knowledgeable (a score closer to 10) about services than those have lower degrees of education. The null hypothesis was: Teachers who have a higher degree of education will not be more knowledgeable about these services.

Of the respondents who had some college or an associate's degree, 5 (50%) marked "neither agree nor disagree" in response to this question and 5 (50%) reported being familiar with services available to children with ASD. Of respondents who had a bachelor's degree, 1 (3.3%) reported not being familiar with services available to children with ASD, 8 (26.7%) marked "neither agree nor disagree," and 21 (70.0%) reported being familiar with these services. Of respondents who had a graduate degree, 1 (7.7%) reported not being familiar with services available to children with ASD, 1 (7.7%) marked "neither agree nor disagree," and 11 (84.6%) reported being familiar with these services. This crosstabulation demonstrates little difference between education levels and familiarity with services available to children with ASD.

The p-value for the chi-square of the variables Service Familiarity and Level of Education is .221. Since the p-value is greater than .05, the researcher failed to reject the null hypothesis. Therefore, this data does not support the research hypothesis that there is a significant association between one's education level and their familiarity with services available to families with children who have ASD.

### **Discussion**

The purpose of this research project was to gain a better understanding of whether or not preschool teachers are familiar with the signs of ASD in young children, comfortable discussing concerns about potential developmental delays with parents, and knowledgeable about services which young children with ASD would benefit. This project found preschool teachers to hold a moderate degree of familiarity with the signs of ASD in young children, to be highly comfortable discussing their concerns with parents, and knowledgeable about referral services which young children with ASD benefit from. This research is important to the field of social work because it is critical to ensure public agencies, such as preschools, are working to help families gain access to services which will aid their children in reaching their full potential. This research showed that while preschools are in a good position to help families gain access to services which will help their children, they could help these families further by providing more information and training about ASD to their teachers.

This portion of the paper will dissect the findings and discuss their relevance for the field of social work, early childhood education, and early intervention of ASD. The results of the study will be critically analyzed by first discussing teachers' knowledge of ASD symptoms. Following this will be a section analyzing teachers' comfort voicing their concerns to parents and several factors which may influence their degree of comfort in doing so. The paper will go on to focus on the perceptions about inclusion practices in preschool settings and how training in this area may influence teachers' beliefs. Next will be a small section discussing teachers' knowledge about services and their willingness to refer families for outside services and assessments. Finally, this section will end by providing several limitations of this present study and some directions for future research.

### **Early Identification of ASD in Preschool Settings**

One of the stipulations for diagnosing ASD is that its symptoms are recognized during the early stages of development (APA, 2013). In fact, parents and caregivers of children with ASD have reported detecting signs of this childhood disorder before the child was 18 months old (CDC, 2014; Howlin & Asgharian, 1999; Kozłowski et al., 2011). Preschools have been identified as ideal settings for identifying children with potential developmental delays, such as ASD, and to work with parents to access services because these teachers work with many children every day and have knowledge about child development (Bloch, n.d; Branson et al., 2008; NAEYC, 2009). This study sought to gain a better understanding of preschool teachers' knowledge about the symptoms of ASD in young children and factors which may contribute to this knowledge.

Previous research has found preschool teachers to be knowledgeable about ASD, but to lack experience working with children who have this diagnosis (Johnson et al., 2012). While this study mistakenly excluded a question about the number of children with ASD that respondents have worked with, the study did find participants to be experienced working with children who have disabilities, but only to be moderately knowledgeable about the symptoms of ASD.

In spite of the experience and education of the teachers in this study, the results found teachers to have only a moderate recognition of the symptoms of ASD. On a scale where a score of 50 signified the greatest level of recognition of ASD symptoms and 10 signified the least level of recognition of ASD symptoms, teachers scored between 29 and 40 with the most responses (n = 37; 43.6%) between 33-35. Because teachers have a moderate degree of knowledge of ASD symptoms, it supports the concept that preschool teachers can be a useful source of information and do notice the red flags of ASD signs in young children. On the other end, this finding also supports the notion that preschool teachers should not be the only

source of information when considering whether or not a child falls along the autism spectrum.

One possible reason for scores in the 30-40 range on this scale is that teachers lack confidence in their knowledge about symptoms. If a person would have scored 50 for instance, he or she would have had to respond “strongly agree” or “strongly disagree” to ten questions which is a less common response when people are a little unsure or hesitant. Future research should alter this scale to a 30 point scale where respondents can only choose (1) disagree, (2) neither agree nor disagree, or (3) agree and then the results of the two scales should be compared for reliability. Furthermore, it would be interesting to compare the scores of preschool teachers on this scale to parents’ scores as previous research has found that preschool teachers are just as likely to distinguish between ASD and non-ASD children as parents are (Dereu et al., 2011).

The results of this scale could also be skewed because the questions were designed to be difficult to answer with certainty. Previous research has found teachers to mistakenly identify symptoms of ADHD as symptoms of ASD (Johnson et al., 2012). Because of Johnson and colleague’s (2012) study, ADHD symptoms were included on the scale to test participant’s ability to distinguish between symptoms of these two childhood disorders. Findings from this study are consistent with previous research as many respondents did mistake the symptoms of ADHD for symptoms of ASD (Johnson et al., 2012).

This finding, that teachers mistakenly agree that symptoms of ADHD are symptoms of ASD, could point to teachers’ ability to recognize hallmark red flags of childhood disorders, but it is simply difficult for them to distinguish between the two disorders. This is understandable because even for trained professionals the symptoms of one disorder can sometimes overlap with and be mistaken for another. Teachers can and should therefore be considered a reliable source for making referrals for further assessments which can more

accurately distinguish between childhood disorders and normal childhood development. Additionally, teachers should be provided with more training in order to increase their ability to recognize the early signs of ASD in young children.

The present research study did not find any significant results linking particular factors to a teacher's ability to recognize the symptoms of ASD. It was hypothesized that those who have more experience working in the field of early childhood education would have a greater ability to recognize the symptoms of ASD in young children. This hypothesis was not supported by this research as there was no difference between those who have more years' experience and those who have less years' experience and their ASD recognition scale scores. This suggests that experience working in the field of early childhood education does not impact an individual's ability to recognize the symptoms of ASD in young children. Future research should examine whether or not there is a difference between those who have experience working in preschool settings which claim to be inclusive and those who have experience working in preschool settings which are ill-equipped for teaching students who have greater needs due to disabilities and teachers' ability to recognize the symptoms of ASD.

This research study also hypothesized that there would be a relationship between a teacher's experience working with children with disabilities and a teacher's ability to recognize the symptoms of ASD in young children. This hypothesis was not supported by this research either as there was no relationship between a teacher's experience working with children with disabilities and a teacher's ability to recognize the symptoms of ASD. It was an unfortunate mistake that the question about teacher's experience working specifically with children with ASD was excluded from this study because it would be interesting to explore the relationship between the variables "experience with ASD" and "symptom recognition."

This result does suggest that a teacher's experience working with children with disabilities does not impact his/her ability to recognize the symptoms of the disorder ASD.

Finally, the research in this area found there is no difference between teachers who have had a personal experience with an individual who has an ASD diagnosis and those who have not in their ability to recognize the symptoms of ASD. These three results which suggest a lack of connection between experience and the ability to recognize the symptoms of ASD suggest that experience, professional or personal, is not enough to increase a teacher's knowledge of the signs and symptoms of ASD in young children. This finding implies that teachers cannot be expected to simply gain knowledge about recognition of childhood disorders, such as ASD, over the course of their time working in the field. Therefore, teachers should be provided with specific training about how to recognize the signs and symptoms of ASD in young children in order that they may be able to refer even more children for services which they may need.

### **Teachers' Comfort Voicing Concerns to Parents**

This research sought to answer the question: Are preschool teachers comfortable addressing concerns regarding developmental delays with caregivers? The results of this study found that teachers do indeed feel comfortable addressing their concerns to caregivers when they suspect a child to have a developmental disability, such as ASD. This is an important finding because it shows that teachers feel it is an important part of their job to make sure they are doing their best to ensure students' needs are being met. When teachers feel comfortable expressing their concerns, parents gain access to important information.

This study found that even when preschool teachers have had a negative experience discussing their concerns to parents, they continue to feel it is important to address such concerns with parents. An interesting response to the qualitative question in this survey was:

*"We have presented information to families about our concerns (without diagnosing) and*

*have had them refuse services or take some time to consider options. We still feel it is important to present the facts, as early intervention is best!*" Several other respondents wrote answers expressing their hesitancy about addressing concerns with parents, but ended the response in a similar manner, emphasizing the belief that despite their discomfort they still believe it is valuable to have the conversation with parents and address their concerns. Again, this finding shows that teachers believe it is their responsibility to help families find answers for their children's behaviors and receive the help they need. While preschool teachers certainly cannot and do not diagnose children with a disorder, they can have a conversation with parents and suggest what steps a family may want to take next.

One factor which this study found may influence teachers' level of comfort is their personal experience with ASD. This study suggests teachers who have had a personal experience with ASD (i.e. they have a child or close relative with an ASD diagnosis) feel more comfortable addressing concerns with caregivers ( $p = .049$ ). One respondent wrote: *"I have a child on the Autism Spectrum. If I did not get early intervention, he would not be as high functioning as he is now. He is in high school in a mainstream school and looking at colleges to attend. Early intervention is critical and when I have a child in my room that exhibits several ASD characteristics, I reach out to the parents and express my concerns."* Individuals who have had a child or close relative with ASD have likely seen the effects of early intervention or perhaps have questioned how different their lives may have been if they had received early intervention. This study suggests these individuals feel more comfortable addressing their concerns with parents, likely because they believe strongly in the importance of receiving early intervention services.

Another finding of this study was that the more experience a preschool teacher has working in the field of early childhood education (as measured by years), the more comfortable teachers are discussing concerns about developmental delays with parents ( $r =$



2.55,  $p = .001$ ). One reason for this result could be because individuals who have been working in the field longer feel more comfortable and competent when speaking to parents in general. Another reason could be that those who have been in the field for more years are older. When a teacher is younger, it increases the likelihood that he or she is younger than the caregiver which may contribute to younger teachers having more difficulty expressing their concerns to caregivers. The implications for this finding support the idea that those with more experience in this field should be relied upon as a valuable resource in preschools when questioning whether or not to discuss concerns with caregivers. Experienced professionals should be used by others in an organization as a resource for consultation and support when considering speaking with caregivers about developmental concerns.

Respondents who have been in the field for a greater period of time have also witnessed firsthand the changes in the early childhood field, especially related to inclusion best practices and new services available to children. One respondent wrote: *“I feel that there is much more help available now for families/caregivers of a child with autism spectrum disorders; in the early years of my teaching, there wasn’t as much. Children who might have fallen under this disorder would have fallen through the cracks, or thought of as merely disruptive and a parent could resent the idea that his or her child had a special need.”* This response also suggests a perceived shift in parent response reactions over time. It seems as if in this respondent’s experience parents today are more open to receiving suggestions from preschool teachers about potential developmental disorders.

This shift in parent reactions could point to a de-stigmatization of ASD and other childhood disorders. Preschool teachers who have been in the field for a longer period of time may have witnessed this shift firsthand, making it easier for them to talk to parents about their concerns more comfortably. Another possible reason that those who have more

experience are more comfortable discussing their concerns with parents than those with less experience could be that they have received more of a spectrum of responses to discussing their concerns with caregivers. For instance, someone who has worked in this field for many years and has discussed concerns about development with many parents could have had experiences of gratitude, denial, hostility, complacency, etc. With this knowledge that each family responds differently, but feeling an obligation to provide information to caregivers, individuals with more experience may feel more comfortable doing so.

Future research should examine parental feelings about stigma associated with ASD diagnosis and compare to previous research which has shown that parents do feel stigma attached to receiving an ASD diagnosis for their child (Gray, 2002; Linton, 2014; Shtayermman, 2009). If there has been a shift over time, this would explain why those who have lived through this change are more comfortable discussing their concerns today. Future research should also examine the experiences of highly experienced preschool teachers in order to better understand the reasons for which they are so comfortable discussing concerns with parents.

### **Perceptions about Inclusion in Preschools**

Previous research has found teachers to be in support of classroom inclusion when it comes to children with disabilities (Bennet et al., 1997; Mastropieri & Scruggs, 1996; Odom, 2000). This study supports these previous findings as teachers were found to have moderately positive perceptions about inclusion practices in their classrooms (see table 1). Previous research has found it to be important for preschools to be inclusive of children with ASD as these settings can improve the outcomes for children with ASD (Barton et al., 2012; Lawton & Kasari, 2012; Nahmias et al., 2014). In this study, preschool teacher's positive perceptions

about inclusion practices not only means they are in favor of inclusive classrooms, but that they believe their organizations are equipped to handle the diverse needs of the children in their care.

One factor that seems important to positive perceptions about inclusion is whether or not a teacher has had specific training about inclusion practices. In this study teacher's experience working with children with disabilities did not seem to have an effect on their inclusion scale score ( $p = .074$ ), but the amount of training about inclusion did. Of the respondents in this study, 42.4% reported having specific training regarding classroom inclusion of children with ASD while 30.6% reported having no specific training regarding classroom inclusion. The results of this study suggest that teachers who have had specific training about inclusion have more positive feelings about inclusion in their classrooms ( $p = .026$ ). This result suggests teachers who have had training feel more competent and comfortable working with children who have special needs and they feel inclusion practices are supported by their organization. A further explanation for this result could be that teachers who are employed by organizations which support inclusion practices and provide training in this area have teachers who feel more competent and able to practice inclusion in their classrooms.

The implication of this finding suggests that efforts are made to reach out to preschools and train staff members about inclusion best practices. By training more early childhood educators, more children will be able to enjoy the benefits of inclusive classrooms. This is important because research has shown that children's play, which is an integral component of learning in preschools, is an important context in which cognitive development takes place (Piaget, 1962; Roskos & Christie, 2007; Sawyer & DeZutter, 2007). Children with ASD may miss out on many learning opportunities because of their lack of engagement during free play. By training their teachers about inclusion practices children with ASD can

hopefully have better cognitive outcomes than children who are not in inclusive settings as is supported by Nahmias and colleagues (2014) study. It is also important to note that inclusive preschool settings may be unrealistic to expect for all children with ASD. Schools would need lower teacher to student ratios in order to meet the needs of ASD students and children with more severe forms of ASD may need a teacher all to themselves. Future research should examine the concerns of teachers when it comes to mainstreaming of children with higher needs and more severe forms of ASD.

### **Referrals**

The last set of research questions this study addressed were about teacher's familiarity with services for children with ASD and other disorders and their readiness to refer families for these services. This study found that overall teachers have knowledge of services and are making referrals to caregivers for assessments and outside services when a developmental delay is suspected (see table 3). Teachers who participated in this study appear to feel competent in making these referrals as they reported being familiar with IDEA and free services offered to children with disabilities. This study did not find any variables associated with teachers' readiness to refer children for services or their familiarity with services.

While this finding suggests teachers are knowledgeable about services and feel competent when making referrals to parents, it is important to note the items on this survey related to this topic were vague and answers may have been biased. For instance, one item asked respondents to mark if they were familiar with IDEA. Respondents may have checked that they were familiar with it if they have simply heard of it, but this does not mean they know what IDEA is or how it impacts their work as early childhood educators. Future research should study whether or not preschool teachers are familiar with specific resources for referral and know how policies, such as IDEA, impact their profession.

**Limitations of the Present Study**

There are several limitations to the present study. First, this study does not account for the many preschools which are not accredited by NAEYC. Because NAEYC centers have position statements which support inclusion practices and making sure the needs of individual children are met, it seems these centers have values related to inclusion. These centers also employ professionals who are well educated and have specific knowledge about child development. While centers which are not NAEYC accredited likely also have educators who are knowledgeable about child development and so forth, there may be a difference between the two types of centers which would be interesting to explore further. Because this study specifically explored NAEYC center teachers, the results cannot be generalized to all preschool teachers.

A second limitation of this study is in regards to a missing survey question. One question was supposed to ask: "How many children have you worked with who have ASD?" There was a typing mistake on the online survey and the question "How many children have you worked with who have disabilities" was asked twice. Because of this, the variable "professional experience with children with ASD" was unable to be examined in this study. Third, a respondent pointed out in a comment on the survey that the use of the word "caregivers" in the survey was confusing and too ambiguous. When creating the survey, the word "caregiver" was chosen to try and include families where the primary caregiver was not the child's mother or father. However, by using the term "caregiver," this could include anyone who was at any point in the child's care, including other preschool teachers.

Finally, the way the word "comfort" may not have been the best choice to measure the degree to which preschool teachers feel they are obligated to convey their concerns to parents. It was clear in several comments to this survey that some teachers felt uncomfortable speaking to parents and discussing their concerns. These teachers would often consult

professionals in other fields before confronting a child's parents, but they ultimately felt as if they had a responsibility to share these concerns with the parents and would therefore do so.

### **Conclusion**

The purpose of this research was to better understand whether or not preschool teachers are familiar with the signs of ASD in young children, comfortable discussing concerns with parents, and knowledgeable about services to which young children with ASD can benefit. This research found that while preschool teachers may not be fully confident in their ability to recognize the signs of ASD in young children, they are at least familiar with many of the signs of ASD in young children and should therefore be viewed as a valuable resource for making referrals for diagnostic assessments. This study found teachers to be highly comfortable discussing their concerns related to developmental delays with parents and found that those with greater personal and professional experience reported feeling more comfortable addressing these concerns with parents. Finally, this study found teachers to be knowledgeable about the services to which young children with ASD are eligible for.

This research is important to the social work field because it is imperative to ensure public agencies are working to help families gain access to services which will aid their children in reaching their full potential. This study shows that preschool teachers are doing their best to voice their concerns to caregivers and move the process of obtaining answers to developmental questions forward for caregivers.

This project contributes to the body of social work research as it informs social workers about where preschool teachers are at in helping to identify children with ASD and other developmental delays as well as how comfortable preschool teachers are with inclusion practices in their classrooms. Because ASD is often comorbid with anxiety and depressive disorders as individuals age (APA, 2013; Shtayermman, 2009), it is important to identify children at a young age and work with their families to gain access to early intervention

services. It is important to provide inclusive classroom settings for young children with ASD in order for these children to learn from the same opportunities through play with peers and adults.

Moving forward, social workers should better inform preschools about the diverse needs of students with developmental delays, such as ASD. Social workers should teach preschools about recognizing the signs of ASD, provide tips for having conversations about concerns with caregivers, and offer support related to incorporating mainstreaming best practices into preschool settings. To do this, social workers should reach out to preschools and offer to provide education and support for their staff. It is also important to keep in mind that families of children who have the most severe forms of ASD may not be satisfied with regular preschool settings. Social workers can provide parents with other options for schools which are specifically for children with ASD and other high-needs disabilities. Social workers can work to provide these resources to parents as well as to preschool centers in order that the preschool centers can refer children to programs which may better meet their needs.

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## Appendix A

## Survey Cover Letter

Good morning, \_\_\_(Name or organization)\_\_\_,

My name is Samantha Drusch and I am a graduate student with Saint Catherine University and the University of St. Thomas' School of Social Work. I am currently working on a research project regarding the early identification of autism spectrum disorder in preschool settings. Your organization has been identified through a search of NAEYC accredited facilities in Minnesota. The survey will take approximately 5-10 minutes and asks questions related to: 1) demographic information, 2) experience, 3) understanding of autism symptoms, and 4) perceptions and experiences working with children and families with disabilities in preschools. With your permission, I would like to survey the teachers in your toddler and preschool classrooms, including float staff. If you are willing and able, please forward the following information and consent form and a link to my survey to your preschool and toddler teachers. Please let me know if you have any questions, concerns, or if you would like me to share the results of my research with you.

Thank you for your time,

Samantha Drusch

St. Catherine University & the University of St. Thomas, School of Social Work

M.S.W. Student

763-516-4461

[drus1242@stthomas.edu](mailto:drus1242@stthomas.edu)

## Appendix B

## Consent Form

**Identification of Autism Spectrum Disorder in Preschool Settings****INFORMATION AND CONSENT FORM****Introduction:**

You are invited to participate in a research study investigating the process of identification and referral for screenings of Autism Spectrum Disorder (ASD) in preschool settings. This study is being conducted by Samantha Drusch, a graduate student at St. Catherine University under the supervision of Sarah Ferguson, a faculty member in the Department of Social Work. You were selected as a possible participant in this research because of your position as a preschool teacher. Please read this form and ask questions before you agree to be in the study.

**Background Information:**

The purpose of this study is to explore the ways in which NAEYC early childhood educators in Minnesota are identifying and serving young children with ASD. Approximately 100 people are expected to participate in this research.

**Procedures:**

If you decide to participate, you will be asked to complete a brief survey which is organized into four sections: 1) demographic information, 2) experience, 3) understanding of autism symptoms, and 4) perceptions and experiences working with children and families with disabilities in preschools. This survey will take approximately 5-10 minutes.

**Risks and Benefits of being in the study:**

The study has no risks or benefits.

**Confidentiality:**

This survey is completely anonymous and the researcher has disabled the ability to view identifying information with the results. The data will be stored on a password protected computer belonging to the researcher. After the completion of this study, the data will be destroyed from the computer on or before June 15<sup>th</sup>, 2015.

**Voluntary nature of the study:**

Participation in this research study is voluntary. Your decision whether or not to participate will not affect your future relations with your organization or St. Catherine University in any way. If you decide to participate, you are free to stop at any time without affecting these relationships.

**Contacts and questions:**

If you have any questions, please feel free to contact me, Samantha Drusch, at 763-516-4461 or drus1242@stthomas.edu. You may ask questions now, or if you have any additional questions later, the faculty advisor, (Sarah Ferguson, 651-690-6296), will be happy to answer them. If you have other questions or concerns regarding the study and would like to talk to someone other than the researcher(s), you may also contact Dr. John Schmitt, Chair of the St. Catherine University Institutional Review Board, at (651) 690-7739 or jsschmitt@stkate.edu.

You may keep a copy of this form for your records.

**Statement of Consent:**

You are making a decision whether or not to participate. Your participation indicates that you have read this information and your questions have been answered.

## Appendix C

Teacher Experiences with Autism Spectrum Disorder in Preschools  
Research Questionnaire

1. What is your age?
  - Under 18
  - 18-24
  - 25-34
  - 35-44
  - 45-54
  - 55-64
  - 65 years or older
  - I prefer not to answer
  
2. What is your gender?
  - Male
  - Female
  - I prefer not to answer
  
3. What is your race?
  - White/Caucasian
  - Hispanic/Latino
  - Native American/American Indian
  - Asian/Pacific Islander
  - African American
  - Mixed Race
  - I prefer not to answer
  
4. What is your level of education?
  - Less than high school degree
  - High School Degree or equivalent (e.g., GED)
  - Some college, but no degree
  - Associate's Degree
  - Bachelor's Degree
  - Graduate Degree
  - I prefer not to answer
  
5. Do you have a degree in the field of early childhood education?
  - Yes
  - No
  
6. Do you have a degree in Elementary Education?
  - Yes
  - No

7. What age group do you currently work with?
- Infants (2-16 months)
  - Toddlers (16 months – 2 years)
  - Preschool (3-5 years)
  - Float staff (i.e. work in various classrooms)
8. Are you the lead teacher in your classroom?
- Yes
  - No
9. How many years have you worked in the field of Early Childhood Education?
- 0-1 years
  - 1-5 years
  - 5-10 years
  - 10+ years
10. How many years have you worked in a NAEYC accredited facility?
- 0-1 years
  - 1-5 years
  - 5-10 years
  - 10+ years
11. During your time working in this field, how many children have you worked with who have disabilities?
- None
  - Little (1-4 children)
  - Some (5-9 children)
  - A lot (10+ children)
12. During your time working in this field, how many children have you worked with who have autism spectrum disorder?
- None
  - Little (1-4 children)
  - Some (5-9 children)
  - A lot (10+ children)
13. Do you have a child or close relative with a disability?
- Yes
  - No
14. Do you have a child or close relative with autism spectrum disorder?
- Yes
  - No

To what extent do you agree or disagree that the following are symptoms of Autism Spectrum Disorder (ASD)?

	Never	Rarely	Sometimes	Often	Always
15. Lack of Eye Contact					
16. Repetitive movements and/or speech					
17. Hyperactivity					
18. Difficulty with change and transitions					
19. Restricted Interests					
20. Delays in Language					
21. Self-Injurious Behaviors					
22. Impaired social communication skills					
23. Excessive Talking					
24. Spontaneous and/or unexplained bouts of aggression.					

To what extent do you agree or disagree with the following statement:

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
25. I have received specific training on including children with autism spectrum disorder in my classroom.					
26. When I suspect a child has a learning delay, I feel comfortable discussing this with his or her caregiver(s).					
28. I believe children with autism spectrum disorders should go to specialized centers.					
29. I believe my organization can support children with some disabilities, but not autism spectrum disorder.					
30. When I suspect a child has autism spectrum					

disorder, I always provide his or her caregiver(s) with referrals for diagnostic assessments and services.					
	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
31. I believe my organization can support children with autism.					
32. I believe it would be unsafe to have a child with autism spectrum disorder in my classroom.					
33. I fear having conversations with caregivers when I suspect their child has a developmental delay such as autism spectrum disorder.					
34. When I suspect a child has autism spectrum disorder, I feel comfortable expressing my concerns to his or her caregiver(s).					
35. I feel comfortable having a child with autism spectrum disorder in my classroom.					
36. When a child is suspected to have autism spectrum disorder, my organization feels that we can teach that child without talking directly to parents about seeking assessments or outside services.					
39. At least once I have expressed concern about a child having autism spectrum disorder and the					



caregiver(s) responded with hostility.					
40. I am familiar with the Individuals with Disabilities Education Act (IDEA).					
41. In general, I believe caregivers appreciate it when I share concerns with them about their child's development.					
	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
42. I am aware that young children with autism spectrum disorder can receive free assessments and intervention services through Early Childhood Special Education programs.					
43. If I suspected a child had autism spectrum disorder, I would not discuss my concerns with his/her caregiver(s).					

Do you have additional comments or concerns?

Appendix D  
Findings: Tables and Graphs

Sample

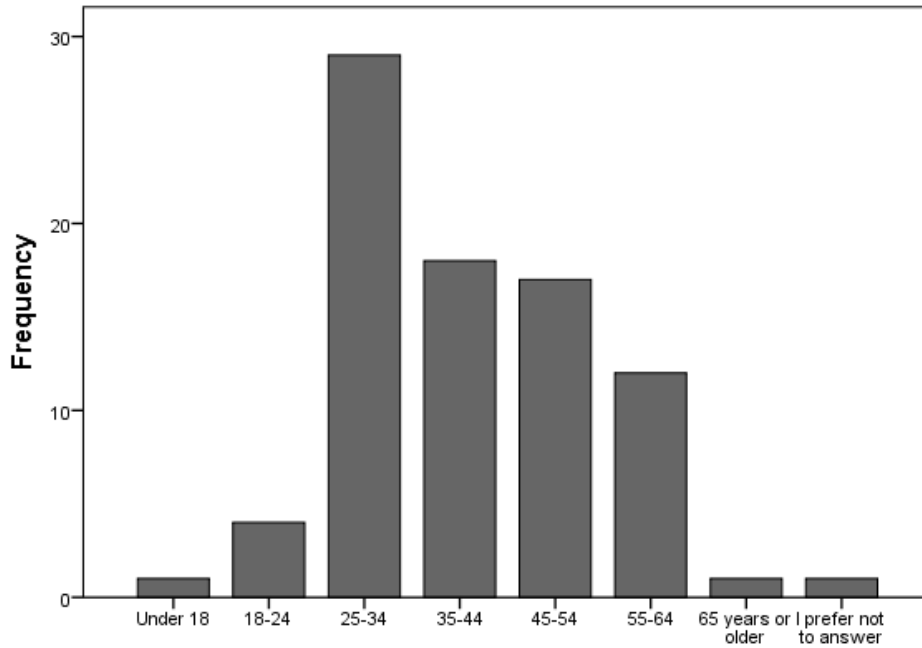


Figure 1. Age of Respondents

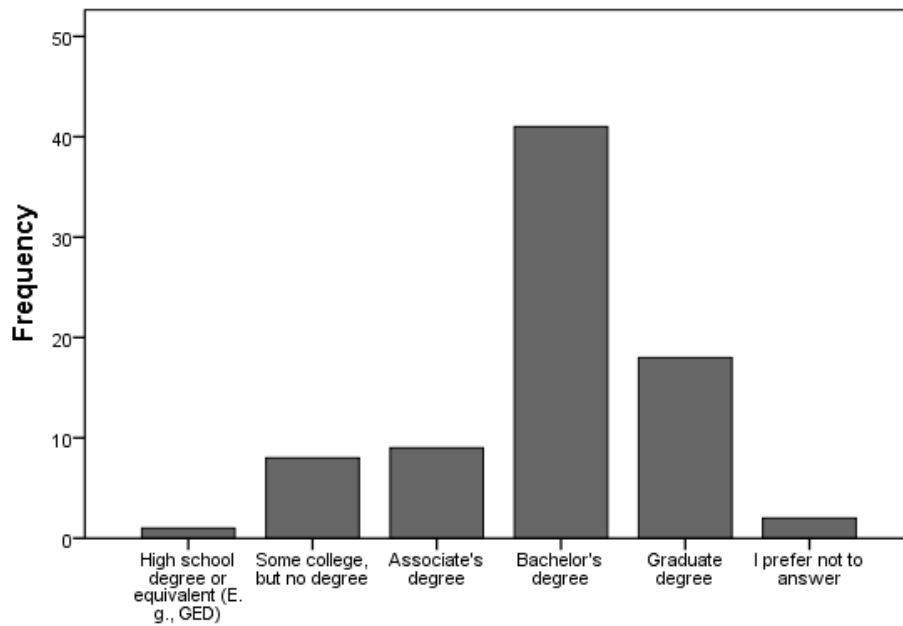


Figure 2. Education Level of Respondents

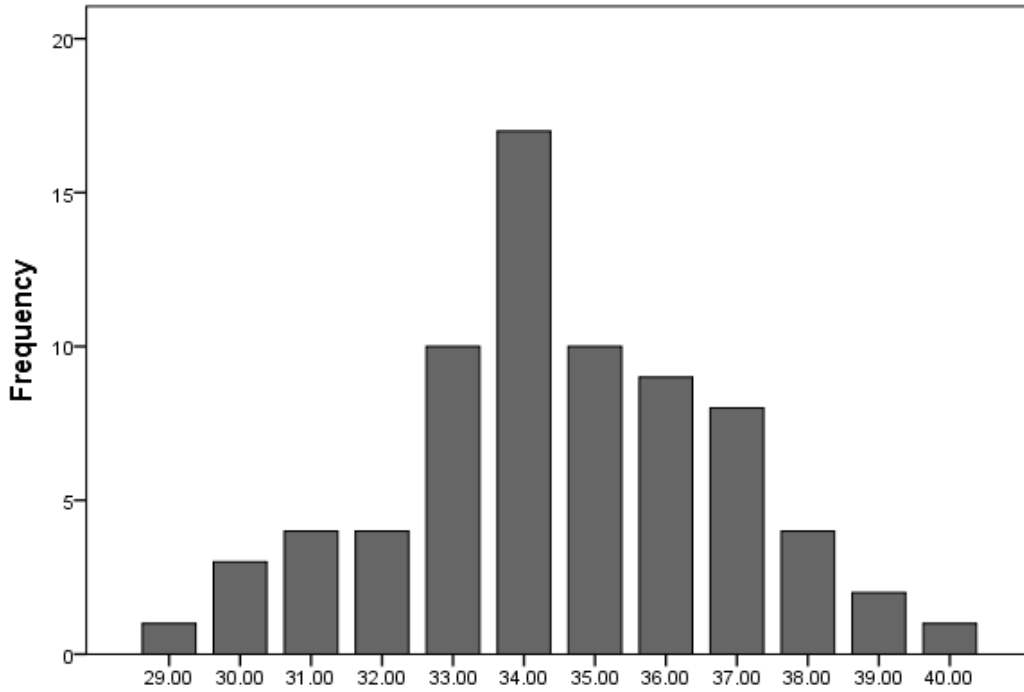


Figure 3. Teacher understanding of ASD symptoms

10 = Least understanding of ASD symptoms, 50 = Greatest understanding of ASD symptoms

Table 1. Respondents' Perceptions about Including Children with ASD in the Preschool Classroom

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10.00	1	1.2	1.4	1.4
	12.00	2	2.4	2.9	4.3
	13.00	1	1.2	1.4	5.8
	14.00	3	3.5	4.3	10.1
	15.00	5	5.9	7.2	17.4
	16.00	10	11.8	14.5	31.9
	17.00	13	15.3	18.8	50.7
	18.00	15	17.6	21.7	72.5
	19.00	10	11.8	14.5	87.0
	20.00	6	7.1	8.7	95.7
	21.00	3	3.5	4.3	100.0
	Total		69	81.2	100.0
Missing	System	16	18.8		
Total		85	100.0		

Table 2. *Teachers' Comfort Addressing Concerns Regarding Developmental Delays with Caregivers*

**Comfort Scale Frequency Distribution**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	9.00	1	1.2	1.4	1.4
	11.00	1	1.2	1.4	2.9
	14.00	5	5.9	7.2	10.1
	15.00	3	3.5	4.3	14.5
	16.00	5	5.9	7.2	21.7
	17.00	8	9.4	11.6	33.3
	18.00	9	10.6	13.0	46.4
	19.00	5	5.9	7.2	53.6
	20.00	12	14.1	17.4	71.0
	21.00	5	5.9	7.2	78.3
	22.00	8	9.4	11.6	89.9
	23.00	4	4.7	5.8	95.7
	24.00	2	2.4	2.9	98.6
	25.00	1	1.2	1.4	100.0
	Total		69	81.2	100.0
Missing	System	16	18.8		
Total		85	100.0		

Table 3. *Teachers' Beliefs about Making Referrals for Outside Services*

		<b>Referral Scale</b>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4.00	1	1.2	1.4	1.4
	5.00	5	5.9	7.0	8.5
	6.00	17	20.0	23.9	32.4
	7.00	12	14.1	16.9	49.3
	8.00	20	23.5	28.2	77.5
	9.00	11	12.9	15.5	93.0
	10.00	5	5.9	7.0	100.0
	Total	71	83.5	100.0	
Missing	System	14	16.5		
Total		85	100.0		