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Parental Involvement in Early Intervention Programs for Children with Autism

by

Kaylee A. Nelson, BSW

MSW Clinical Research Project

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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Danny Porter, MSW, LICSW
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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 methods. Students must independently conceptualize a research problem, formulate a 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.

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Abstract

Research shows that increased parental involvement has a positive impact on children with autism; however, there is a need for continued research pertaining to how their involvement improves and/or influences outcomes of their children with autism (Walker, Wilkins, Dallaire, Sandler, & Hoover-Dempsey, 2005). This study set out to investigate the ways in which parents of children (ages 2-7) with autism are involved in their children's early intervention program(s) and how this involvement influences their child's social skills and behavior. More specially, this study explored the association between parental involvement and the behavior and social skills of children with autism receiving services through an early intervention program.

This Ecological Framework has been applied to this study and calls attention to the value of looking at more than just the individual. Rather than simply focusing only on the child with autism, there should be a focus on all interrelated systems that affect that child's development. In relation to this research, in order for parent involvement (a micro-system) to affect the social skills and behavior (another micro-system) of their child with autism, there needs to be involvement with the child's early intervention program (a meso-system).

Thirty parents of children ages 2-7 with an autism diagnosis participated in this study. These participants also identified that their children are in an early intervention program. The subjects were recruited through an organization called *Autism Speaks* which is the world's leading autism science and advocacy organization. The chosen research design for this study was a quantitative survey which was posted on the *Autism Speaks* website. Participants responded voluntarily. This cross-sectional study focused on research pertaining to parental involvement in early intervention programs and the social skills and behavior of their children (ages 2-7) with autism.

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Introduction

Parental Involvement in Early Intervention Programs for Children with Autism

The number of children with autistic spectrum disorders (ASD) has increased drastically over the past decade and the figures illustrating both incidence and prevalence of autism are alarming. Today, autism affects one in eighty-eight children (Autism Speaks, 2012). There are debates about whether the incidence of autism is increasing or whether doctors are simply becoming better at recognizing and diagnosing the condition. Either way, the reality is that autism, a neurological disorder, is on the rise and there is an increasing demand for services, support and education for individuals with autism as well as their families.

There is also a need for continuing research on autism in order to gain a better understanding of the disorder and develop effective treatments and interventions. These alarming numbers have led to an increase in research on what can be done in terms of autism. This study focused on parental involvement in early intervention programs and how this involvement impacts the social skills and behavior of children (ages 2-7) with autism.

Research shows that increased parental involvement has a positive impact on children with autism; however, there is a need for continued research pertaining to how their involvement improves and/or influences outcomes of their children with autism (Walker, Wilkins, Dallaire, Sandler, & Hoover-Dempsey, 2005). This study focused on parental involvement and how this involvement influences their child's social skills and behavior. The following research question was examined in this study: Is parental involvement in early intervention programs associated with more positive social skills and behavior of children (ages 2-7) with autism?

Literature Review

Autism

Autism is a childhood developmental disorder that appears in the first three years of life. There are many possible symptoms individuals with autism experience. One human autistic behavior in children ages one to four is the lack of play development and social skills. Children with autism oftentimes engage in nonsocial activities while choosing to play with a restricted selection of objects for long periods of time. They tend to spend considerably less time playing functionally than children without autism (Fabiennet al., 2008). For example, most kids play “house” and use their imagination, but children with autism are likely to lack these skills in symbolic play. They would rather spend time with visual examination of just one toy or object. This intense focus also significantly impacts their ability to socially interact with other children at play.

Gauging the relative prevalence of autism in any given ethnicity is a difficult task. There is no blood test or genetic marker for autism and diagnoses are based only on neuro-psychological tests and clinical observations (Caruso, 2010). There are challenges when it comes to making an accurate diagnosis of autism because several characteristics and symptoms of autism may resemble those of other disorders such as mental retardation, severe reactive attachment disturbances or deafness.

Currently, autism actually refers to a family of disorders that at their core involve difficulty relating to others, problems with communication and very restrictive behaviors and interests (Durand, 2012). The autism spectrum is very broad. On one end are individuals who have significant cognitive impairments, who do not speak and who seem to be unaware or uninterested in other people. On the other end are those who are at or above-average in IQ and

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can speak well; however, these individuals do not seem to be able to relate to how others think and feel and are quite rigid and concrete in their behavior (Durand, 2012). See Appendix A for the official DSM-IV-TR definition and medical diagnostic criteria for Autistic Disorder (299.00) (American Psychiatric Association [APA], 2000).

The diagnostic guidelines specified in DSM-IV-TR (APA, 2000) for autism are widely used by physicians, psychiatrists and psychologists who work in clinic or community settings. School-based practitioners make use of the descriptions found in federal education law (Individuals with Disabilities Education Improvement Act [IDEA], 2004) to make decisions about the presence of a disability. The federal definition of autism as it relates to special education is as follows:

Autism means a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines and unusual responses to sensory experiences (IDEA, 2004).

Demographics

In 2007, an estimated 637,000 of children ages 3 to 17 had a current diagnosis of autism (Kogan et al., 2009). In 2010, there were a total of 781,507 individuals with autism in the United States. 188,550 were ages 0-4, 489,955 were ages 5-21 and 103,002 were adults (Rogers, 2011). In 2011, the median age when school-aged children with autism were first identified as having autism was five years (Pringle, Colpe, Blumberg, Avila, & Kogan, 2012).

Early Intervention

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Early identification of autism has resulted in the recognition of an increasing number of infants and toddlers being referred to early intervention programs (Vismara & Rogers, 2008). There is a critical need to identify children with autism at a very young age so that they can access evidence-based interventions that can significantly improve their outcomes (Ventola et al., 2006). With this comes an increased emphasis on the importance of early intervention. Researchers have agreed that early detection of autism is essential. Early interventions are likely to reduce the needs of costly services later in life which would financially benefit society in the future and will allow individuals with autism to receive individualized treatment programs at a higher level of intensity to meet their specific needs.

Several treatment studies suggest substantial gains may be achieved when treatment is provided at a very early age (Baker & Allen, 2012; Lopatin, 2011; Lovaas, 1987; Stahmer, 2007). There are several types of early intervention programs for children with autism including Floortime, The Early Denver Model, Relationship Development Intervention, Training and Education of Autistic and Related Communication Handicapped Children, Early Childhood Special Education and Applied Behavioral Analysis Therapy. A number of therapeutic methods such as music, play and occupational therapy are also used as interventions. One component all of these approaches have in common is the use of parental involvement.

Greenspan Floortime Approach. One of the most widely known comprehensive programs for children with autism is the Greenspan Floortime Approach (Greenspan & Wieder, 1997). The Greenspan Floortime Approach was developed in the 1980's by Stanley Greenspan, a child psychiatrist. The idea of this approach is that parents can help children with autism expand their circles of communication by meeting them at their developmental level and building on their strengths (Seeman, 2006).

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Moreover, Floortime encourages parents to engage children literally at their level by getting on the floor to play. This approach frequently involves using the child's favorite objects or games. Stanley Greenspan's Floortime Approach has demonstrated that children with signs of autism can join their peers and lead full, healthy lives (Pajareya Nopmaneejumruslers, 2011). Not only can the Greenspan Floortime Approach be applied at a very early stage, it empowers the entire family to promote their child's development (Seeman, 2006).

The Early Start Denver Model (ESDM). The ESDM is based on a developmental model of intervention and is delivered within a classroom setting five days a week for 4-5 hours (Corsello, 2005). This early intervention program combines a relationship-focused model with the teaching practices of Applied Behavior Analysis (ABA). It emphasizes deep parental involvement and focuses on positive affect, pragmatic communication and interpersonal interactions within a structured and predictable environment (Rogers & Dawson, 2009). The ESDM is appropriate for children with autism as young as 12 months and its effects have demonstrated improved social behaviors in children with autism (Dawson et al., 2012).

Relationship Development Intervention (RDI). RDI is a parent-based, cognitive-developmental approach in which primary caregivers are trained to provide daily opportunities for successful functioning in increasingly challenging dynamic systems (Gutstein, Montfort, & Burgess, 2007). Developed by psychologist Steven Gutstein, RDI is a behavioral treatment designed to address autism's core symptoms. This intervention is designed for in-home use, but can also be used by classroom teachers and behavioral therapists. RDI focuses on helping children with autism form personal relationships and emotional bonds. RDI has six objectives: relational information processing, foresight and hindsight, emotional referencing, social

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coordination, declarative language and flexible thinking (Relationship Development Intervention, 2012).

An important part of RDI is the involvement of the child's parents. RDI is family-based. This behavioral intervention provides tools to parents to use to effectively teach their child skills and motivation. This not only creates structure and consistency for the child, but it gives parents resources they need to work with their child in applying developmentally appropriate objectives to everyday situations.

Training and Education of Autistic and Related Communication Handicapped Children (TEACCH). TEACCH is a therapeutic approach that focuses on promoting independence by using visual cues such as schedules with pictures. The TEACCH approach is also referred to as "Structured Teaching". The term 'structure' in autism interventions generally describes organization of time, space, and sequences of events within the environment in order to make learning activities clearer and easier to perform (Mesibov & Shea, 2010).

TEACCH generally recommends four kinds of structure which are (1) physical structure (i.e. using elements such as furniture arrangement or visual cues that show a child which activities occur in specific areas), (2) organizing and communicating the day's sequence of events using a visual schedule, (3) organization of tasks using visual means and (4) linking individual tasks into a sequence of activities, called the work/activity system, in order to increase the amount of time that the individual is meaningfully engaged in productive activities (Mesibov & Shea, 2010).

Early Childhood Special Education (ECSE). ECSE classrooms are for young children with developmental delays, sensory processing issues and other delays that impact their learning. In these classrooms, a preschool curriculum is implemented which includes learning how to

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participate in group learning experiences, fine motor skills, sharing and other skills to help prepare children for kindergarten (Special Education News, 2012). The activities are hands-on and include play time, games and interactive activities. ECSE classrooms are positive environments to support young children's learning to help them prepare for kindergarten and future school experiences (Special Education News, 2012).

Applied Behavioral Analysis (ABA) Therapy. Perhaps one of the most well-known therapies for children with autism is ABA Therapy. ABA Therapy offers several treatment interventions including changing environments, altering events that trigger challenging behaviors, teaching alternative skills and removing the reinforcing consequences of the behaviors (Baker & Allen, 2012). ABA is used in many schools and treatment clinics. It encourages positive behaviors and discourages negative behaviors in order to improve a variety of skills such as communication and verbal skills. ABA also provides structure and organization to children with autism as well as their families.

In addition to the Greenspan Floortime Approach, the Early Start Denver Model, Relationship Development Intervention, Training and Education of Autistic and Related Communication Handicapped Children, Early Childhood Special Education and Applied Behavioral Analysis Therapy, there are several types of therapy that can be a positive addition to the lives of children with autism: music, play and occupational therapy.

Music Therapy. Music therapy is widely used in the treatment of children with autism and is gaining growing recognition as an effective intervention addressing fundamental levels of spontaneous self-expression, emotional communication and social engagement for individuals with a wide range of developmental disorders (Kim, Wigram, & Gold, 2009). Within this therapeutic intervention, the music therapist uses music to provide predictable, empathic and

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supportive musical structure. In this context, the children oftentimes seem to perceive and experience the therapist's music as related to their own expression which may motivate them to respond, join in and initiate further musical interaction with the therapist (Wigram, 2007).

Play Therapy. During play therapy sessions, an interventionist uses strategies including modeling, verbal redirection, reinforcement and indirect instruction to sustain and encourage child play activities (WWC Intervention Report, 2012). Through this use of appropriate play materials, the goal is for the young child with autism to be better able to explore, interact, experiment and express themselves. Play-based interventions can be conducted across a variety of settings, including at school or at home, as one-on-one activities between an interventionist and a child, or in small group settings (WWC Intervention Report, 2012). Play routines form part of the early social play between adults and young children and they usually include physical contact (Wimpory & Nash, 1999).

Occupational Therapy. Occupational therapy service delivery includes evaluation, intervention and assessment of outcomes. At the individual level, collaboration with family, caregivers, educators and other team members is essential for understanding the daily life experiences of individuals with autism and those with whom they interact (LaVesser, Tomchek, & Watling, 2010). Parent education is typically a component of occupational therapy intervention. Most parent education programs are designed to meet one of two goals: (1) to improve their child's performance or (2) to manage their child's behavior and decrease maladaptive behaviors (Smith & Arbesman, 2008). This process includes an analysis of the client's strengths and challenges related to occupations, performance skills, performance patterns, body functions and body structures and activity demands (LaVesser et al., 2010).

Parental Involvement

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Ongoing parental involvement is an important piece of treatment planning and intervention for children with autism. It is crucial even before implementing an intervention. Observational data from a parent and information on the child's pattern of behavior from infancy to childhood provide some of the most useful data for programming. Other types of involvement include observation of their child's early intervention program, attending classes or workshops on specific strategies, participating in parent support groups, participation in team meetings and communication such as communication notebooks, newsletters or written materials (Smith & Elder, 2010).

Furthermore, parent educational involvement can also take a variety of forms. Parents may participate in school-based activities such as volunteering in their child's classroom, communicating with teachers and attending school meetings. Parents may engage in a variety of home-based educational activities with their child with autism, including, among others, one-on-one instruction, therapeutic play and positive behavior support (Benson et al., 2008).

Parents should be viewed as important resources for insight and support. After all, parents typically know their children best. Teachers and caregivers should acknowledge this by eagerly inviting their involvement when it comes to their children's education. Well-informed, engaged and proactive parents' play a pivotal role in the treatment of their children and as the past two decades have shown, through their advocacy and involvement, they can help in the care of children with autism (Williamson & Martin, 2012).

The importance of parent participation in the education of young children with autism is well-documented with research linking parent involvement to a variety of positive child outcomes including improved skill maintenance and generalization (Moes and Frea, 2002) as well as to enhanced family functioning and wellbeing (Koegel, Bimbela, and Schriebman, 1996).

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As a result, it is now widely acknowledged that parent involvement constitutes crucial 'best practice' in the education of young children with autism (National Research Council, 2001).

Parent Training. Parent training is another form of parental involvement and has been shown to be a very effective method for promoting generalization and maintenance of skills in children with autism (Mahoney et al., 1999; Majnemer, 1998; Myers & Johnson, 2007; Williamson & Martin, 2012). Despite parent training being considered an essential component of successful intervention programs for children with autism, few public school programs include parent training as part of the Early Childhood Special Education curriculum (Mahoney et al., 1999).

Researchers have examined the effects of training parents to provide intervention to their children with autism. Five studies focused on parent training and education. Some of the researchers were also interested in reducing parents' stress through education about autism. Two concepts underlying the efficacy of parent training is that (1) parents are with their children for a large portion of the day and can create a consistent home environment for learning and (2) parents often desire to be extensively involved in their children's interventions (Case-Smith & Arbesman, 2008).

Parent education about autism and behavior management can improve the parent's confidence and self-esteem and can improve the child's behavior (Sofronoff Farbotko, 2002; Sofronoff, Leslie, & Brown, 2004). However, training parents to implement skill-based interventions has mixed evidence for its effectiveness in promoting the child's performance and does not lower parent stress (Diggle, McConachie, & Randle, 2003). Three studies focused on training parents to implement interventions. In a study using nonrandomized groups, Koegel et al. (1996), compared two paradigms for training parents: (1) teaching parents to motivate and

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respond to their children to improve their pivotal responses and (2) teaching parents to train their children in targeted behaviors.

The parents who were taught to focus on motivating and responding to their children exhibited significantly more positive parent-child interaction than parents trained to teach and reward their children for performance. The pivotal behavior training also appeared to lower the parents' stress. Teaching parents how to train their children in targeted behaviors did not result in any differences in child behavior (Smith & Arbesman, 2008).

Barriers to Parental Involvement/Training

There are several potential barriers to parental involvement. A teacher's lack of training and information on parental involvement may be related to their relatively lower levels of parent involvement (Lazar, Broderick, Mastrilli, & Slostad, 1999). A teacher may have fears and anxieties prior to contacting parents or low comfort levels with parents. There may be language barriers or a lack of understanding when it comes to the significance of parent communication. Teachers may also view parental involvement as time-consuming (Lazar et al., 1999).

Research has shown stress to be a major factor that contributes to lack of parental involvement in their children's early intervention program (Benson, Karlof, & Superstein, 2008; Osborne & Reed, 2010). Other contributing factors to lack of parental involvement include lack of time and energy, socioeconomic status, other children to care for; employment and lack of support (Benson et al., 2008). Barriers to the provision of parent training include the need for parent education models that can be easily implemented in early intervention programs such as ECSE programs and the need for preparation of special educators in parent education strategies (Mahoney et al., 1999).

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The review of the literature gives insight into the various early intervention programs for children with autism as well as the numerous ways in which parents can be involved in their children's programming. The review of the literature also reveals the significance of parental involvement in early intervention programming for children with autism; however, there is lack of research on how this involvement (or lack thereof) impacts the social development of their children. This study will take a look at the ways in which parental involvement impacts the social development of children with autism by exploring the following question: Is parental involvement in early intervention programs associated with more positive social skills and behavior of children (ages 2-7) with autism?

Conceptual Framework

This research examined parental involvement in early intervention programs for children with autism through the Ecological Framework, a framework that was developed in 1979 by Urie Bronfenbrenner, a psychologist. This framework is an integrative framework for understanding multiple levels of systems to understand the "bigger picture" (Oetzel, Ting-Toomey, & Rinderle, 2006). Bronfenbrenner's Ecological Framework is a model used to provide a theoretical framework for examining disability with special attention to autism spectrum disorders (Ravindran & Myers, 2012).

According to the Ecological Theory, there should not only be a focus on the individual (the micro-system), rather it should include all interrelated systems that affect a child's development (Clancy, 1995). These interrelated systems include the meso-system, exo-system, macro-system and chrono-system. The meso-system applies to the interrelationships between the micro-systems. The exo-system refers to the influential factors in a child's life. For example, although a child does not directly play a role in a mother's experience at work, the

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child's immediate context can still be influenced by the mother's work experience (a promotion that requires more travel).

Macro-systems can be described as the larger social functions that impact the other systems. Examples of this include policies that pertain to children with disabilities or children from multicultural backgrounds. Lastly, chrono-system refers to the changes that happen across time and affect the other systems (Onchwari, Onchwari, & Keengwe, 2008). Examples of this can be external or internal such as a death in the family or the physiological changes that occur during the developmental process of a child with autism.

This theory calls attention to the value of looking at more than just the individual. There should be a focus on all interrelated systems that affect a child's development. An ecological approach integrates interventions that occur on the micro-, meso- and macro-levels (Clancy, 1995). In relation to this research, in order for parent involvement (a micro-system) to affect the social skills and behavior (another micro-system) of their child with autism, there needs to be involvement with the child's early intervention program (a meso-system). Empowering families is another crucial part of the Ecological Model.

One recommendation that stems from this framework is to assist families in becoming more empowered in their exo-system relations (Bronfenbrenner, 2005) (i.e. being active participants in their children's education or early intervention program by having a relationship with teachers, therapists and/or caregivers). Educating parents about what their children experience in their early intervention program is empowering. The purpose of this study was to explore the association between parental involvement and the behavior and social skills of children with autism receiving services through an early intervention program.

Methods

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Research Design

This cross-sectional study focused on research pertaining to the following question: Is parental involvement in early intervention programs associated with more positive social skills and behavior of children (ages 2-7) with autism? The study also explored the impact parental involvement (or lack thereof) can have on a child with autism in early intervention programs, specifically in terms of a child's social skills and behaviors. The chosen research design for this study was a quantitative survey.

Sample

The participants in this study were parents of children ages 2-7 with an autism diagnosis who identified that they are in an early intervention program. The subjects were recruited through an organization called *Autism Speaks* which is the world's leading autism science and advocacy organization. The organization is dedicated to funding research for autism, increasing autism awareness and advocating for the needs of individuals with autism as well as their families. The organization is also designed to accelerate the pace of autism research; therefore, it allows researchers to post their research study on the website. Parents of a child with autism are able to access studies posted on their website and participate in ones that pertain to their situations. These parents can also report information about their child's diagnosis, behavior, environment; services received as well as progress over time.

In order to gain approval to post this study on the *Autism Speaks* website, this researcher submitted approval from the St. Catherine University Institutional Review Board (IRB) and completed the *Autism Speaks Research Studies/Clinical Trials Web Listing Application*. This application gave the organization necessary information about the research being conducted such

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as a summary of the study, a link to the survey, IRB study/protocol approval number, time commitment and eligibility criteria for participants.

Protection of Human Subjects

To protect each human subject who participates in this study, a research proposal was submitted to this researcher's MSW Clinical Research Committee. Once this researcher obtained approval from the Research Committee and Chair, an application to IRB was completed by this researcher, approved by the Research Chair and submitted to the St. Catherine University IRB. The IRB reviewed the application, proposal, protocols and the submitted research-related materials to assure the rights of the humans participating in this research would be protected. After receiving approval from the IRB, this researcher sent the letter of approval to *Autism Speaks* and a description of this study was posted on the website along with a link that took participants directly to the survey at Qualtrics, a web-based tool.

On the first page of the survey, a letter of informed consent was provided to all participants (Appendix B). This researcher did not collect any identifying information to assure confidentiality/anonymity. Data collected remained confidential and was used for the purpose of research only. Participation was voluntary and there were no identified risks or benefits associated with the participation in the study. Responding to the questions will constitute the participant's consent.

Variables & Measurement

Data was collected through a survey instrument which was developed by this researcher (Appendix C). The survey consisted of 38 quantitative items. Many of the questions and statements were created based on information obtained from the literature this researcher reviewed. Parts of various tools from existing surveys and questionnaires were also utilized to

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create the items on the survey (Aman, Tassé, Rojahn, & Hammer, 1995; Matson, 1990). Seven items on the survey (S2-S7 and S12) came from the Matson Evaluation of Social Skills for Youngsters (MESSY) (Matson, 1990) and six items on the survey (B1-B4, B6 and B8) came from the Nisonger Child Behavior Rating Form (Aman et al., 1995). The overall format and remaining items on the survey were developed by this researcher.

The survey was divided into three different sections: (a) demographics, (b) parental involvement and (c) child's social skills and behaviors. The first section of the survey consisted of questions pertaining to demographics. This section measured the following variables: the child's age of diagnosis, whether the child was given an educational or medical autism diagnosis, relationship and employment status of parents, income, number of other children in the household and the number of other children with autism in the household.

The age at which each respondent's child was diagnosed with autism was measured by asking each respondent the age at which his or her child was given a diagnosis of autism (D1). The respondent was given the following options to choose from: less than one year, two years, and three years and so on through seven years. The next question (D2) also pertained to the diagnosis and asked whether each respondent's child was given a medical or educational diagnosis.

The next four questions of this section were meant to obtain information related to the respondents' demographics. (D3) asked the respondents to choose whether their relationship is best described as single or married/partner. The respondent was also asked to identify their employment status (D4) from the following choices: full-time, part-time or I am not currently employed. Respondents also selected their average income per year (including their partner if applicable) (D5). There were six multiple choice selections that ranged from less than \$20,000

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all the way up to more than \$100,000. (D6) asked the respondents to select their highest level of education by choosing from one of the following options: unfinished high school, high school/GED, Bachelor's degree, Master's degree and Ph.D.

The last two questions in the demographics section of the survey asked how many other children live in the respondent's household (D7) and how many other children *with autism* live in the respondent's household (D8). In the second section of the survey, participants rated their involvement in their child's early intervention program and identified the way(s) in which they are involved in those programs. Participants were also asked to identify the type(s) of early intervention program their children were receiving and the barriers that get in the way of parental involvement.

Parental involvement (P1) was measured by the extent to which the respondents agreed or disagreed with the following statement: I am very involved in my child's early intervention program(s). A Likert scale on a continuum was used to respond to this statement. The continuum ranged from strongly disagree (1) to strongly agree (10). Higher scores represent higher amounts of parental involvement in their child's early intervention program.

Respondents were asked what early intervention service(s) their children currently receive (P2). The options listed underneath the question included the following: Greenspan Floortime, The Early Denver Model, Relationship Development Intervention, Training and Education of Autistic and Related Communication Handicapped Children, Early Childhood Special Education and Applied Behavioral Analysis Therapy. There was also an "other" category for respondents to check if none of the above services pertain to them.

Next, respondents were asked what therapeutic intervention(s) their children are involved in (P3). Options included the following therapies: speech, music, occupational, play and animal

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therapy. This question was in the same format as (P2). The next question (P4) asked, “What way(s) are you involved in your child’s early intervention program?” The listed responses to choose from included visits to your child’s program/classroom, attend meetings/conferences, parent training/education, communicate with staff working with your child, volunteer work, parent-child activities, and one-on-one instruction and attend workshops.

The last item of the parent involvement section stated the following: The biggest barrier that gets in the way of my involvement is... (P5). Barriers for the respondents to choose from included other children in the household, my job, stress, my child’s teacher/therapist does not provide enough opportunities for my involvement, finances and lack of resources. The last section of the survey had two parts (social skills and behavior).

The first part measured the child’s level of social skills. There was a series of twelve statements that reflected how often the respondent’s child uses positive social skills. The respondent rated each statement using the Likert rating scale provided on the survey which ranged from never (1) to always (5). The positive social skills listed in items (S1) through (S12) include the following: expresses feelings and emotions, calls people by their names, smiles at people the child knows, friendly to new people, feels sorry when the child hurts someone, makes people laugh by telling jokes, funny stories, etc., joins in games with other children, initiates conversations, has an interest in making new friends, plays cooperatively (shares, take turns, etc.), invites others to play and shows an interest in spending time with peers.

Child’s level of social skills was operationally defined as the respondent’s score on the Social Skills Score (SSS). This variable was measured using the series of the twelve statements listed above. The Social Skills Score (SSS) was the sum of the responses given for (S1) through (S12) divided by twelve. Higher Social Skills Scores (SSS) represent more positive social skills.

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The second part of this section measured and assessed the child's behaviors. There was a series of thirteen behaviors listed on the survey. The respondents rated each statement using the rating scale provided on the survey to reflect how problematic each behavior was for their child. The Likert scale ranged from serious problem (1) to not at all a problem (4). The behaviors listed in items (B1) through (B13) included the following behaviors: taking people's things without permission, punching slapping or hitting when angry, property destruction, screaming and/or yelling, impulsiveness, low frustration tolerance, temper tantrums, overly worried about making mistakes, hurts him/herself, expresses worry about many things, lies, engages in odd, repetitive behaviors and isolates his/herself.

Child's behavior was operationally defined as the respondent's score on the Behavior Score (BS). This variable was measured using the series of thirteen statements listed above. The Behavior Score (BS) was the sum of the ratings given for (B1) through (B13) divided by thirteen. Higher Behavior Scores (BS) indicates more positive behavior.

Data Analysis

Data analysis began once 28 surveys had been completed. Analysis for this study was completed using the data analysis software called, IBM SPSS Statistics 20. Descriptive Statistics were used to organize, summarize and interpret the data gathered from the questions on the survey. Measurements of central tendency and measures of dispersion were described. This researcher also used inferential analyses including correlations and scatterplots to examine the association between parental involvement and their child's positive social skills and behavior as well as a t-test to determine whether there is a statistical difference between items on the survey and children's social skills and behavior.

Describing the Data

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Descriptive statistics were run on all variables in order to describe this data. The age at which the child was diagnosed (D1) is a nominal variable and was measured using a frequency distribution and illustrated with a bar chart. The variable of whether the child was given an educational or medical diagnosis (D2) is a nominal variable and was measured using a frequency distribution and illustrated with a bar chart. The respondent's relationship status (D3) and employment status (D4) are nominal variables and were also measured using a frequency distribution and illustrated with bar charts.

Respondent's income (D5) and highest level of education (D6) are both ordinal variables and were measured using a frequency distribution and illustrated with bar charts. The number of other children in the household (D7) and the number of other children with autism in the household (D8) are also ordinal variables. They were measured using frequency distributions and illustrated with bar charts.

Parental involvement (P1) is an ordinal variable and was descriptively measured through a frequency distribution and illustrated with a bar chart. Type(s) of early intervention program(s) the respondent's children are receiving (P2); therapeutic intervention(s) their children are involved in (P3); the barriers that get in the way of parental involvement (P4) and way(s) in which they are involved (P5) are all nominal variables which were measured using frequency counts/distributions with bar charts and tally reports.

The variable measuring social skills (SSS) is an interval variable and was measured for central tendency and dispersion and shown on a histogram. The variable measuring the behavior (BS) of the respondents' children is also an interval variable and was measured for central tendency and dispersion and shown on a histogram.

Research Questions

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The first sub question was as follows: Is there a relationship between parental involvement (P1) and their child's Social Skills Score (SSS)? The independent variable was parental involvement (P1) and the dependent variable was the respondents' Social Skills Score (SSS). The hypothesis was that there was a positive correlation between (P1) and (SSS). The null hypothesis was that there will not be a relationship between (P1) and (SSS). The findings were measured using the method of correlation and displayed in a scatter plot.

The second sub question was as follows: Is there a relationship between parental involvement (P1) and their child's Behavior Score (BS)? The independent variable was parental involvement (P1) and the dependent variable was the respondents' Behavior Score (BS). The hypothesis was that there will be a positive correlation between (P1) and (BS). The null hypothesis was that there will not be a relationship between (P1) and (BS). The findings were measured using the method of correlation and was displayed in a scatter plot.

The next sub question was: Is there a relationship between the age at which the child was diagnosed with autism (D1) and parental involvement (P1)? The independent variable was the age of diagnosis (D1) and the dependent variable was parental involvement (P1). The hypothesis was that there will be a negative correlation between (D1) and (P1). The null hypothesis was that there will not be a relationship between (D1) and (P1). The findings were measured using the method of correlation and was displayed in a scatter plot.

Strengths & Limitations

One strength of this study is that the data was collected directly from parents of children with autism. Two other strengths include that the survey used various levels of measurement and that it was posted on the *Autism Speaks* website, a worldwide website, so the respondents could

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have potentially been from anywhere across the globe. On the other hand, there are some limitations that have been identified with this study as well.

One limitation of this research is that the survey was quantitative in nature which limits participants' responses to a set of answers and does not allow them to elaborate. Another limitation is that the survey was conducted online; therefore, parents of a child with autism could only respond to this survey if they had access to the internet. There is also a lack of validity in the scale scores (SSS) and (BS) because this researcher pulled some of the questions on the survey from existing tests and incorporated some of her own questions as well.

Another limitation of this study is that the responses to the surveys were self-reported; therefore, they may have reported being more involved than they truly are in order to make a more positive impression despite the fact the survey was anonymous. Respondents may have exaggerated symptoms and behaviors in order to make their situation seem worse, over-reported the frequency in which their children engage in positive social skills or under-reported the severity or frequency of symptoms in order to minimize their problems.

Findings

Descriptives were run on each of the variables in which the findings were descriptively measured through a frequency distribution and a bar graph. Additionally, three tests of correlation were run. The first correlation test was run to investigate the relationship between parental involvement (P1) and their child's Social Skills Score (SSS). The second test was run to determine whether there would be a relationship between parental involvement (P1) and their child's Behavior Score (BS). The last correlation test was run to explore the relationship between the age at which the child was diagnosed with autism (D1) and parental involvement (P1). The findings were measured using the method of correlation and was displayed in a scatter plot.

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Descriptive Statistics

The respondents were asked to select the age at which their child was given an autism diagnosis (D1). The age at which each participant's child was diagnosed with autism is a nominal variable and was descriptively measured through a frequency distribution and is shown in Table 1 below.

Table 1. *Age of Autism Diagnosis Distribution*

		Frequency	Percent	Valid Percent	Cumulative %
Valid	Less than 1 year	1	3.3	3.6	3.6
	1	8	26.7	28.6	32.1
	2	8	26.7	28.6	60.7
	3	9	30.0	32.1	92.9
	4	1	3.3	3.6	96.4
	6	1	3.3	3.6	100.0
	Total		28	93.3	100.0
Missing	System	2	6.7		
Total		30	100.0		

The frequency distribution shown above shows 28 out of 30 participants responded to the following question: At what age was your child diagnosed (D1)? Out of the 28 respondents, nine (32.1%) reported that their child was diagnosed with autism at age three. Eight respondents reported their child was age two at the time of diagnosis and another eight respondents reported their child was one year of age when given an autism diagnosis.

Participants' responses are illustrated below in a bar chart (Figure 1). The bar chart in Figure 1 reflects the majority of participant responses were three years of age in regards to the age at which their child was given an autism diagnosis.

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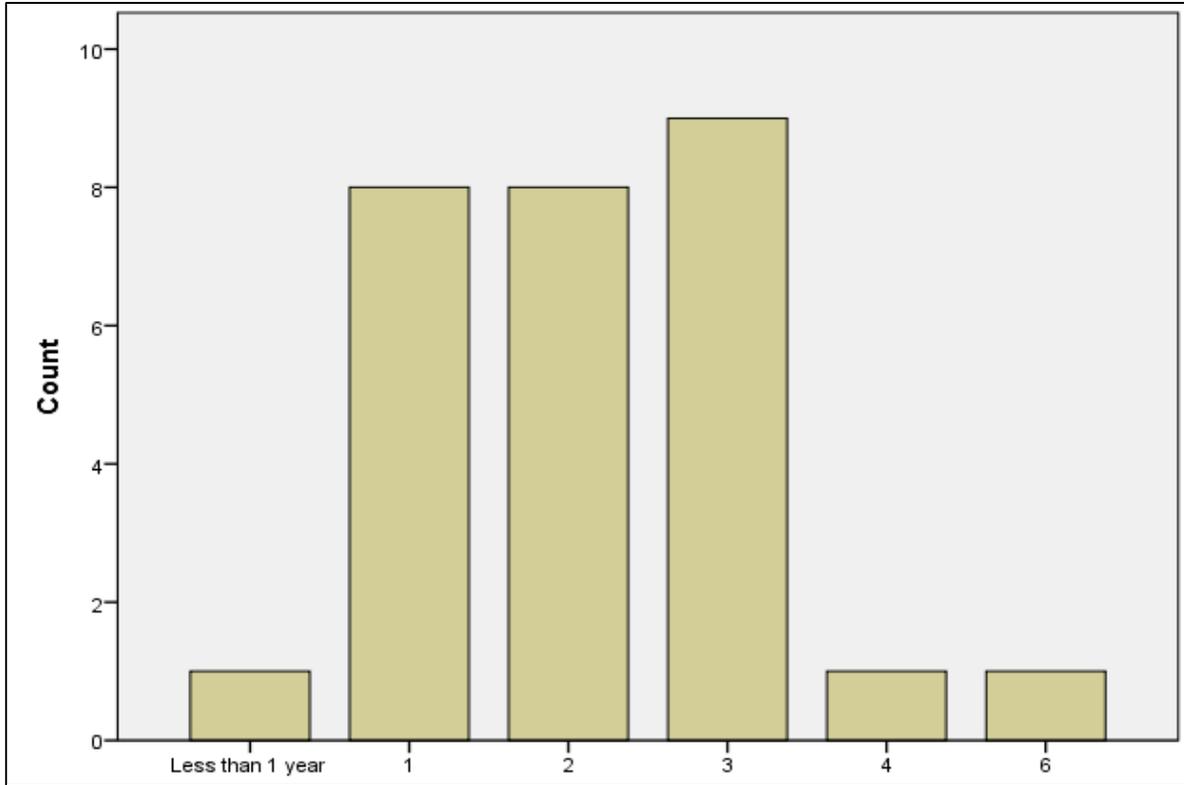


Figure 1. At what age was your child diagnosed?

The respondents were asked to select whether their child was given a medical or an educational autism diagnosis (D2). The type of autism diagnosis given to each participant’s child is a nominal variable and was descriptively measured through a frequency distribution and is shown in Table 2 below.

Table 2. Medical or Educational Diagnosis Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Medical	22	73.3	78.6	78.6
	Educational	6	20.0	21.4	100.0
	Total	28	93.3	100.0	
Missing	System	2	6.7		
Total		30	100.0		

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The frequency distribution shown above shows 28 out of 30 participants responded to the following question: Was your child given a medical or educational diagnosis (D2)? Out of the 28 respondents, 22 (78.6%) reported that their child was given a medical diagnosis and 6(21.4%) respondents reported their child was given an educational diagnosis.

Participants' responses are illustrated below in a bar chart (Figure 2). The bar chart in Figure 2 reflects the majority of the participants' children were given a medical diagnosis.

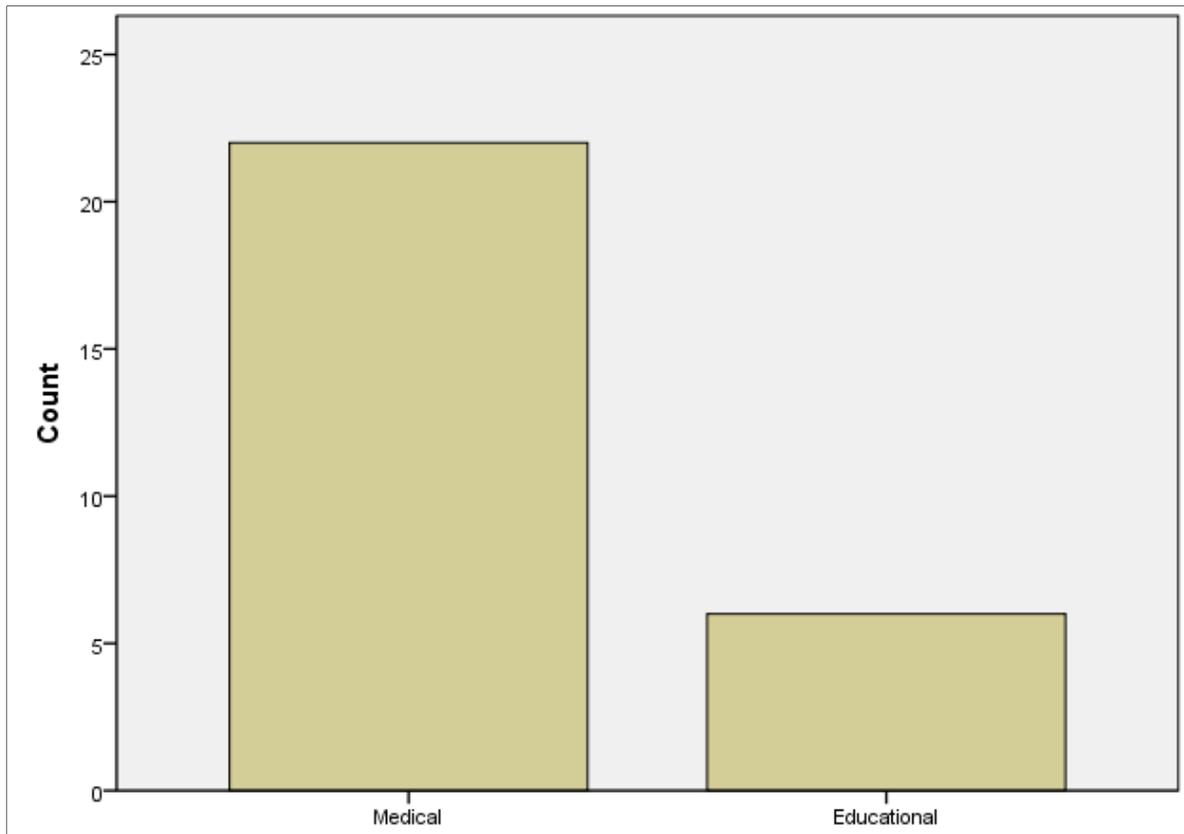


Figure 2. Was your child given a medical or educational diagnosis?

The respondents were asked to identify their relationship status (D3). The participant relationship status is a nominal variable and was descriptively measured through a frequency distribution and is shown in Table 3 below.

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Table 3. Relationship Status Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	8	26.7	28.6	28.6
	Married/Partner	20	66.7	71.4	100.0
	Total	28	93.3	100.0	
Missing	System	2	6.7		
Total		30	100.0		

The frequency distribution shown above shows 28 out of 30 participants responded to the item on the survey which asked them to identify their relationship status (D3). Out of the 28 respondents, 20 (71.4%) reported they were married or had a partner and 8(28.6%) respondents reported being single.

Participants’ responses are illustrated below in a bar chart (Figure 3). The bar chart in Figure 3 reflects the majority of the participants were either married or had a partner.

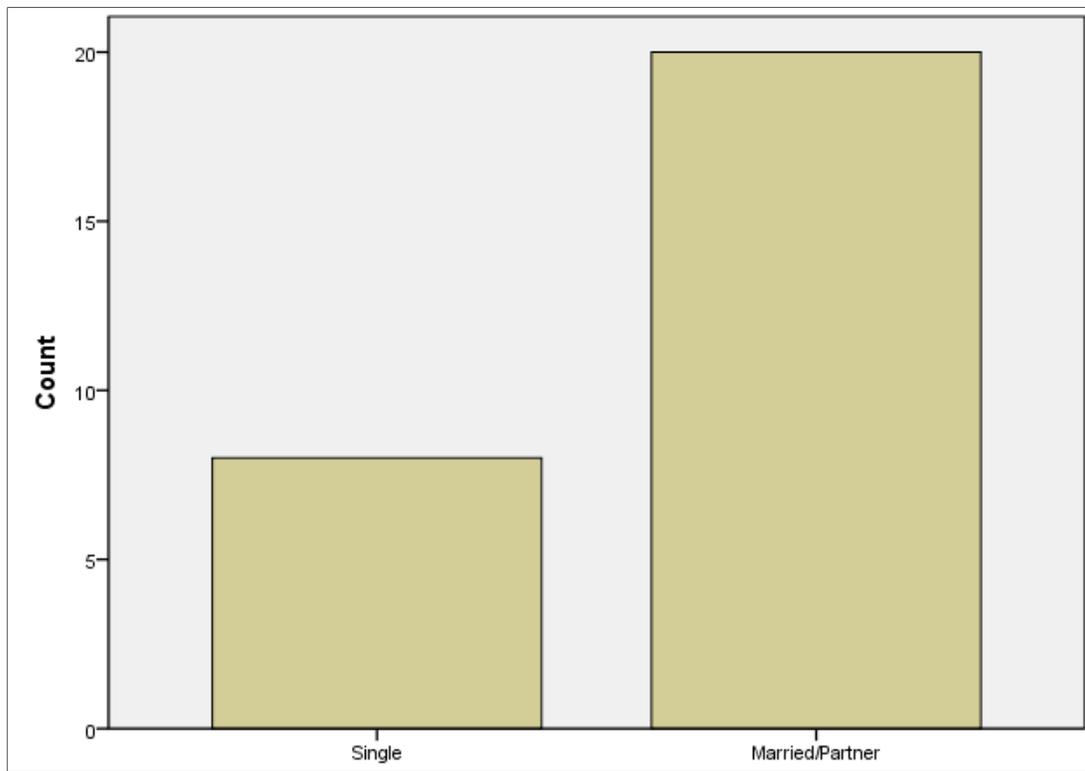


Figure 3. Respondent Relationship Status

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The respondents were asked to identify their employment status (D4). The participant employment status is a nominal variable and was descriptively measured through a frequency distribution and is shown in Table 4 below.

Table 4. *Employment Status Distribution*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Full-time	7	23.3	25.0	25.0
	Part-time	5	16.7	17.9	42.9
	I am not currently employed.	16	53.3	57.1	100.0
	Total	28	93.3	100.0	
Missing	System	2	6.7		
Total		30	100.0		

The frequency distribution shown above shows 28 out of 30 participants responded to the item on the survey which asked them to identify their employment status (D4). Over half (16) of the 28 respondents were not currently employed (57.1%). Seven respondents reported having a full-time job and 5 were employed part-time. Participants' responses are illustrated below in a bar chart (Figure 4). The bar chart reflects the majority of the participants were currently unemployed.

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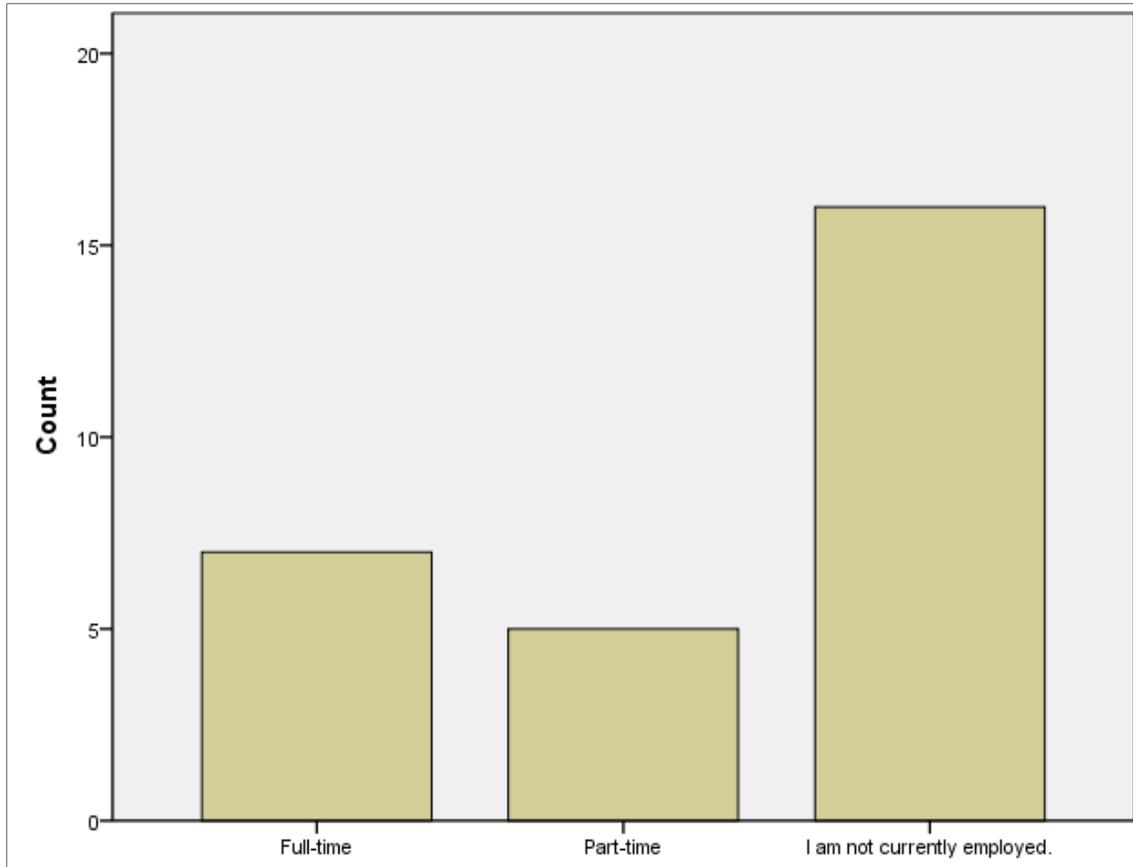


Figure 4. Respondent Employment Status

The respondents were asked to identify their average annual income per year (including their partners if applicable) (D5). The participant’s average annual income is an ordinal variable and was descriptively measured through a frequency distribution and is shown in Table 5 below.

Table 5. Average Annual Income Distribution (including partner if applicable)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than \$20,000	7	23.3	25.9	25.9
	\$20,000-\$39,999	6	20.0	22.2	48.1
	\$40,000-\$59,999	3	10.0	11.1	59.3
	\$60,000-\$79,999	2	6.7	7.4	66.7
	\$80,000-\$99,999	6	20.0	22.2	88.9
	More than \$100,000	3	10.0	11.1	100.0
	Total	27	90.0	100.0	

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Missing	System	3	10.0
Total		30	100.0

The frequency distribution shown above shows 27 out of 30 participants responded to the item on the survey which asked them to identify their average annual income per year (including their partners if applicable) (D5). Responses ranged from less than \$20,000 to more than \$100,000; however, the three most common responses were less than \$20,000 (7 respondents), \$20,000-\$39,999 (6 respondents) and \$80,000-\$99,999 (6 respondents). Responses are illustrated in the bar chart below (Figure 5).

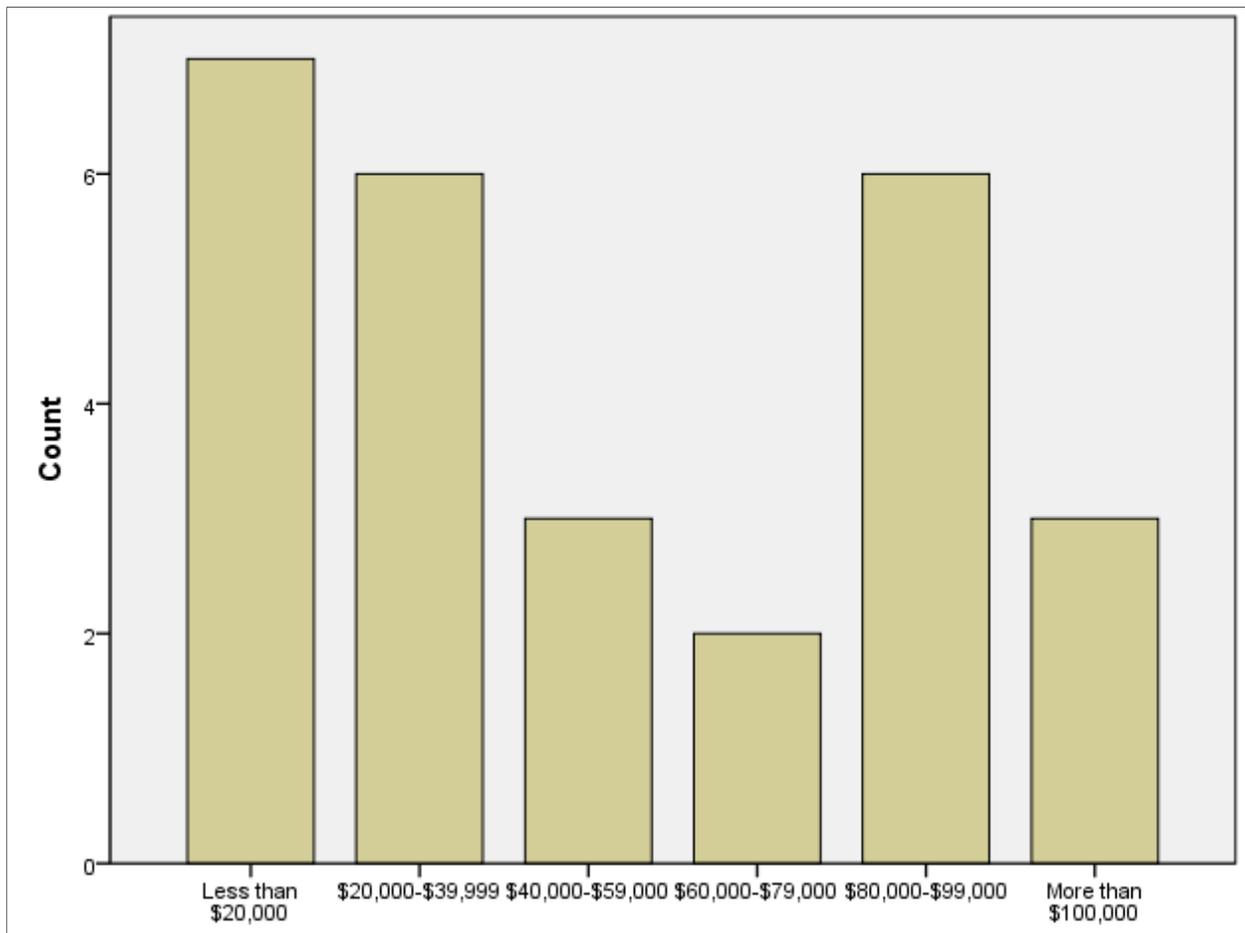


Figure 5. Average Annual Income (including partner if applicable)

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The respondents were asked to identify their highest level of education (D6). The participant highest level of education is an ordinal variable and was descriptively measured through a frequency distribution and is shown in Table 6 below.

Table 6. *Highest Level of Education Distribution*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unfinished high school	1	3.3	3.6	3.6
	High school/GED	12	40.0	42.9	46.4
	Bachelor's Degree	10	33.3	35.7	82.1
	Master's	4	13.3	14.3	96.4
	PhD	1	3.3	3.6	100.0
	Total	28	93.3	100.0	
Missing	System	2	6.7		
Total		30	100.0		

The frequency distribution shown above shows 28 out of 30 participants responded to the item on the survey which asked them to identify their highest level of education (D6). The majority of respondents (22) selected High school/GED or Bachelor’s Degree. One respondent did not complete high school, 4 respondents reported having their master’s degree and one respondent had their Ph.D. These responses are illustrated below in a bar chart (Figure 6). The bar chart reflects the range of the respondents’ highest levels of education.

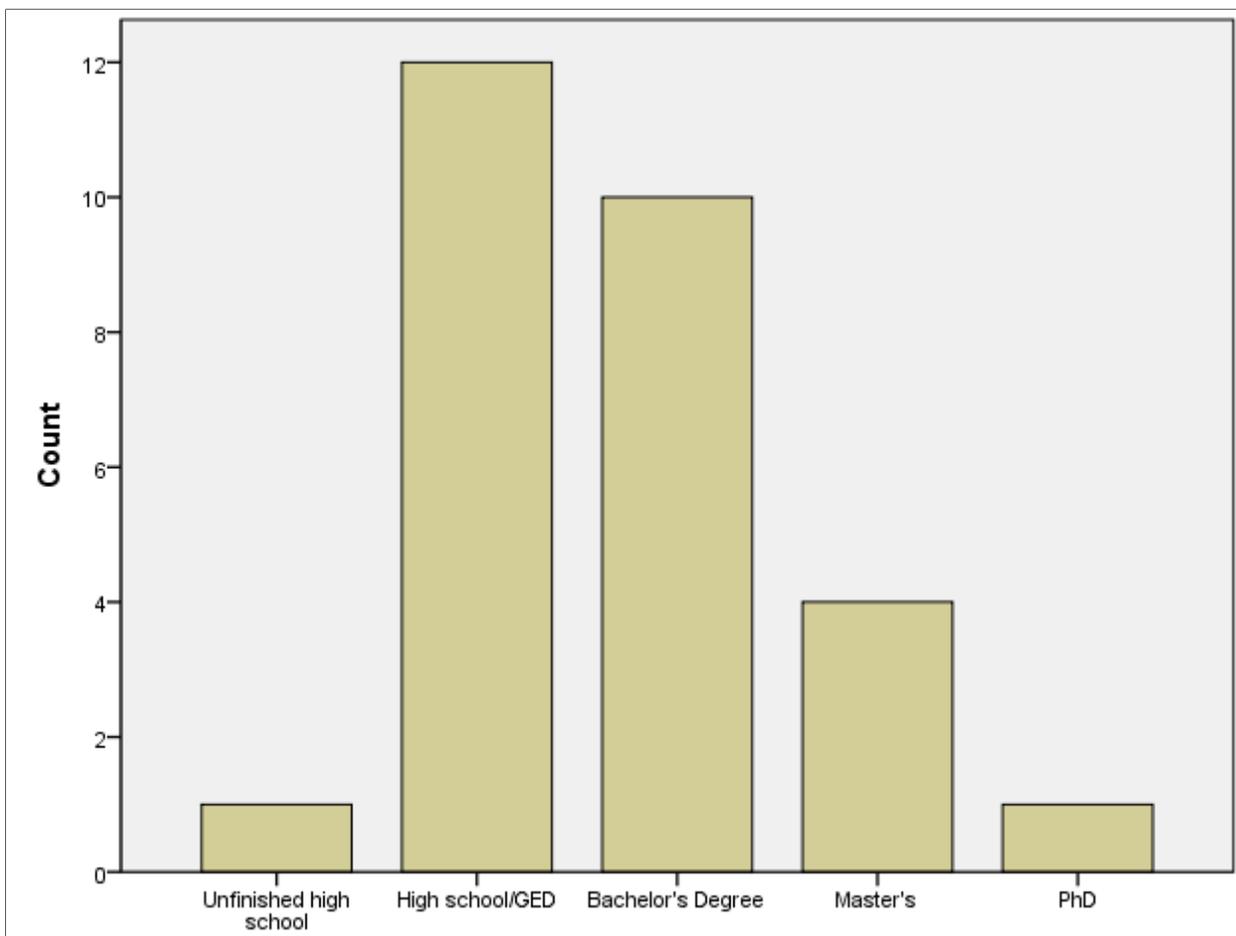


Figure 6. Highest Level of Education

The respondents were asked to indicate how many other children live in their household (D7). This is an ordinal variable and was descriptively measured through a frequency distribution and is shown in Table 7 below.

Table 7. Distribution of the Number of Other Children in Household

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	3	10.0	10.7	10.7
	1	15	50.0	53.6	64.3
	2	8	26.7	28.6	92.9
	4	1	3.3	3.6	96.4
	5+	1	3.3	3.6	100.0
	Total	28	93.3	100.0	
Missing	System	2	6.7		
Total		30	100.0		

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The frequency distribution shown above shows 28 out of 30 participants responded to the item on the survey which asked them to indicate how many other children live in their household (D7). The majority of respondents (15) reported having one additional child living in their household; whereas, 8 reported having 2 additional children living in their household; 1 reported having 4 additional children and 1 reported having 5 or more. Lastly, 3 respondents indicated having no additional children living in their household. These responses are illustrated below in a bar chart (Figure 7).

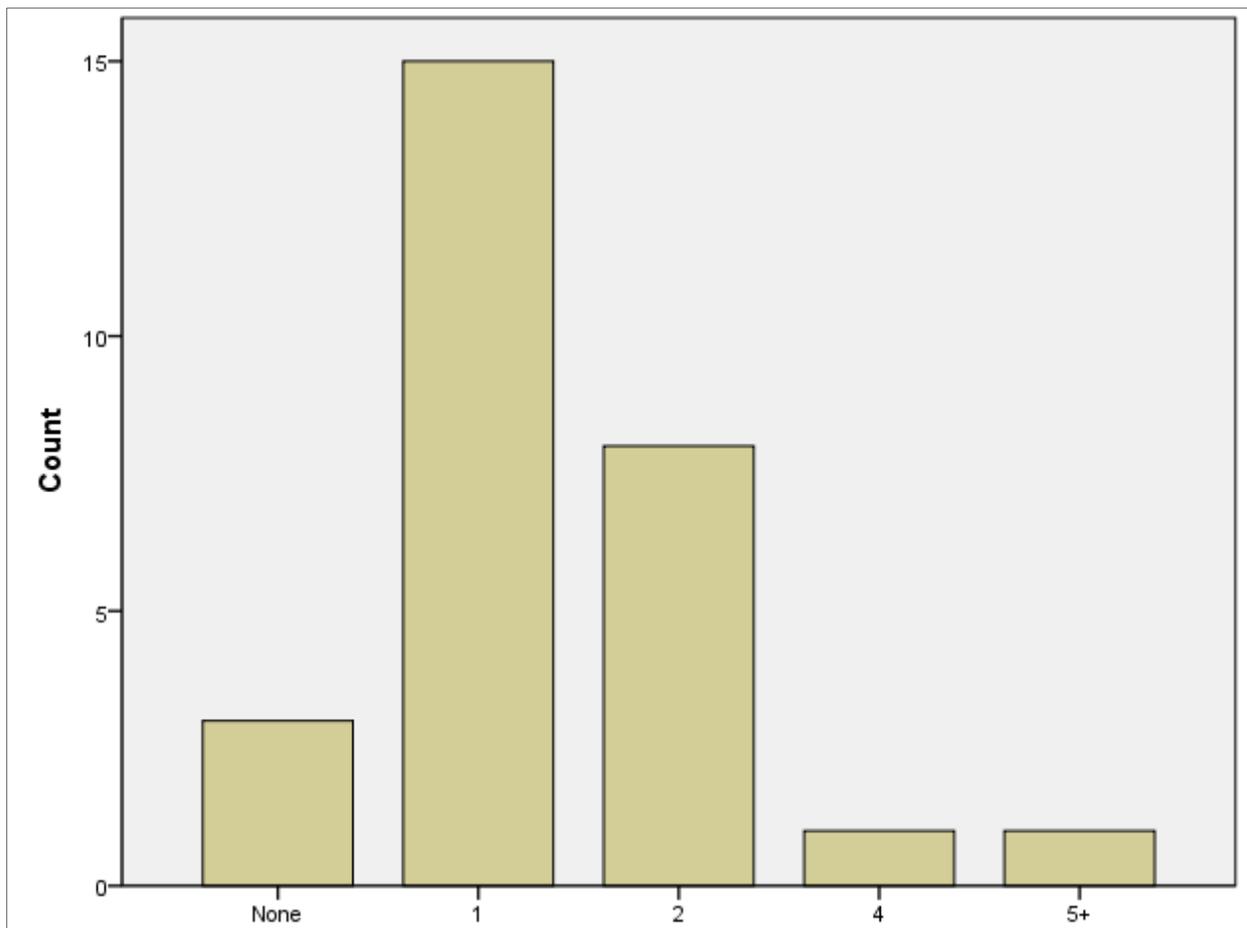


Figure 7. Number of other children in household

The last item in the Demographics section of the survey asked participants to indicate how many other children with an autism diagnosis live in their household (D8). This is an

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ordinal variable and was descriptively measured through a frequency distribution and is shown in Table 8 below.

Table 8. *Distribution of the Number of Other Children with Autism Diagnosis in Household*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	16	53.3	57.1	57.1
	1	11	36.7	39.3	96.4
	2	1	3.3	3.6	100.0
	Total	28	93.3	100.0	
Missing	System	2	6.7		
Total		30	100.0		

The frequency distribution shown above shows 28 out of 30 participants responded to the item on the survey which asked them to indicate how many other children with an autism diagnosis live in their household (D8). Although the majority of the respondents (16) reported having no additional child with an autism diagnosis living in their household; 12 respondents reported having either one or two additional children with an autism diagnosis living in their household. These responses are illustrated below in a bar chart (Figure 8).

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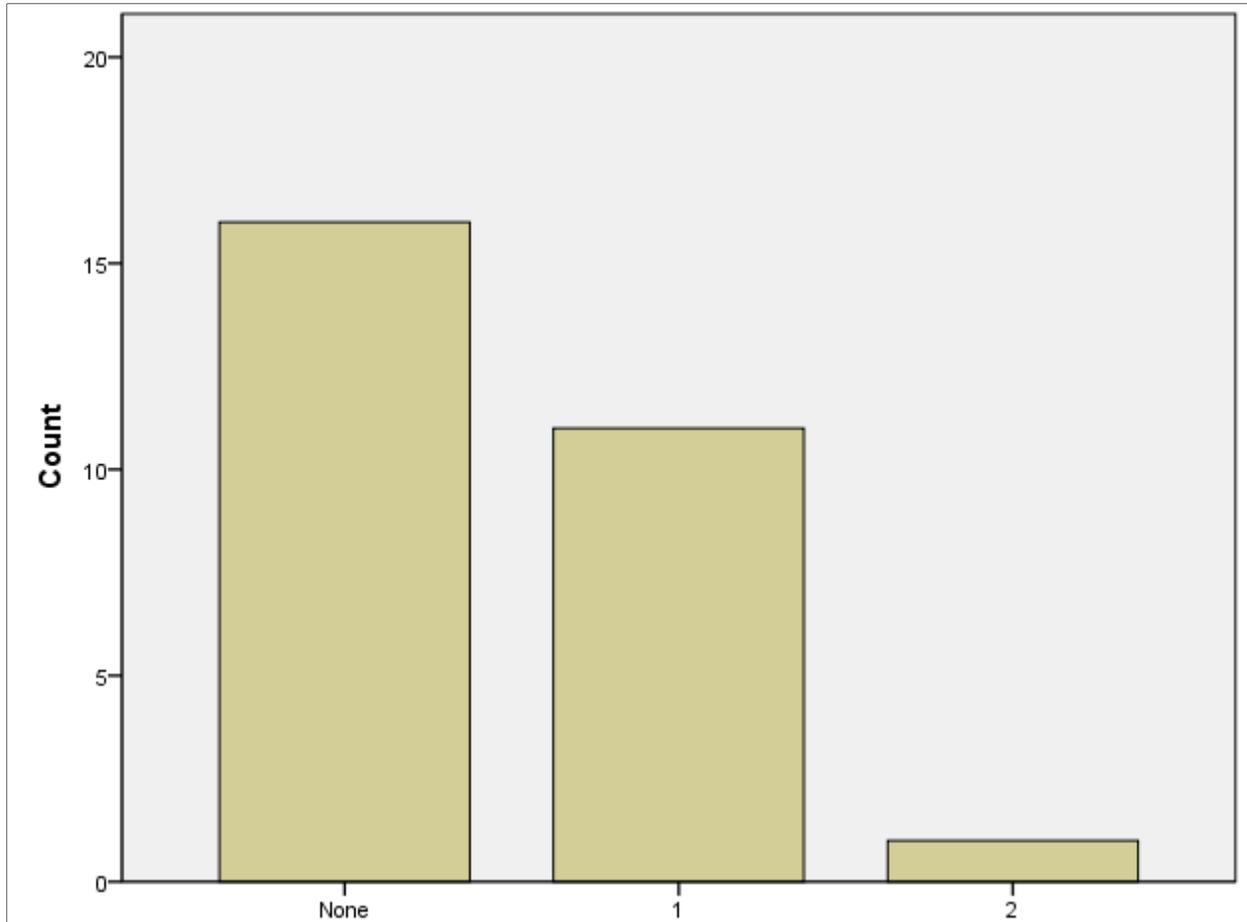


Figure 8. Number of other children in household with autism diagnosis

The first item in the parental involvement section of the survey (P1) asked participants to rate the following statement: “I am very involved in my child’s early intervention program(s)” and provided a continuum that ranged from 1 (Strongly Disagree) to 10 (Strongly Agree). This is an ordinal variable and was descriptively measured through a frequency distribution and is shown in Table 9 below.

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Table 9: Respondent Ratings of Parental Involvement Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	9.00	3	10.0	21.4	21.4
	10.00	11	36.7	78.6	100.0
	Total	14	46.7	100.0	
Missing	System	16	53.3		
Total		30	100.0		

The frequency distribution shown above shows that 14 out of 30 participants (less than half) responded to (P1), the item in which participants were asked to rate their involvement. Of the 14 respondents, 11 gave themselves a 10 out of 10 and 3 gave themselves 9 out of 10. These responses are illustrated below in a bar chart (Figure 9).

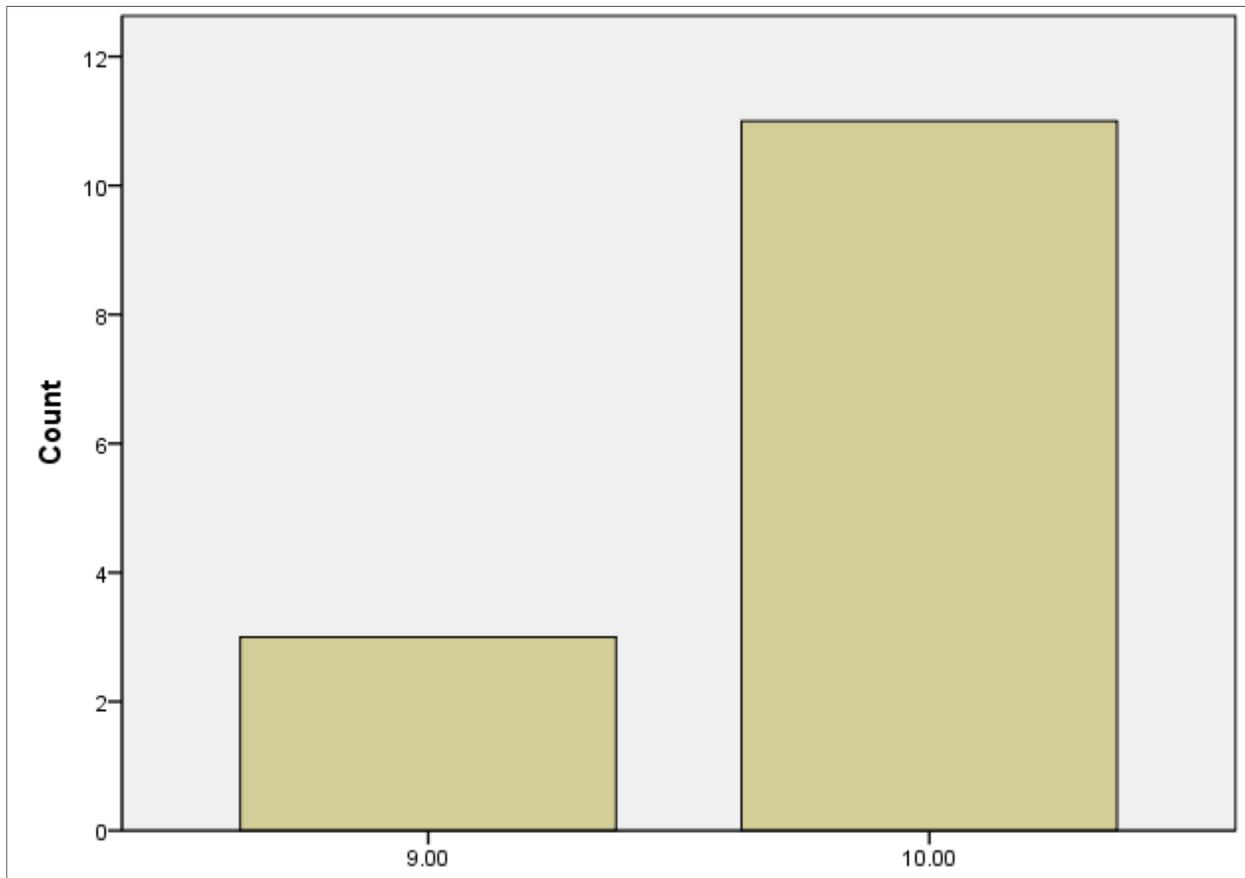


Figure 9. “I am very involved in my child’s early intervention program(s).”
1 = Strongly Disagree; 10 = Strongly Agree

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Respondents were asked to select which early intervention service(s) their children currently receive (P2). The options listed underneath this question included the following: Greenspan Floortime, The Early Denver Model, Relationship Development Intervention, Training and Education of Autistic and Related Communication Handicapped Children, Early Childhood Special Education and Applied Behavioral Analysis Therapy. There was also an “other” category for respondents to check if none of the above services pertain to them. The responses are displayed in Table 10 below.

Table 10: *Distribution of Early Intervention program(s) respondents’ children are receiving*

		Early Childhood Special Education	Applied Behavioral Analysis Therapy	Relationship Development Intervention	Greenspan Floortime	Training & Education of Autistic & Related Communication Handicapped Children (TEACCH)	Early Start Denver Model	Other
N	Valid	13	14	2	1	0	0	12
	Missing	17	16	28	29	30	30	18

The table shown above shows that Early Childhood Special Education and Applied Behavioral Analysis Therapy are the two most common early intervention programs respondents’ children are receiving.

Next, respondents were asked which therapeutic intervention(s) their children are involved in (P3). Options included the following therapies: speech, music, occupational, play and animal therapy. This question was in the same format as (P2) and responses are displayed in Table 11 below.

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Table 11: *Distribution of Therapeutic Interventions respondents' children are receiving*

		Speech Therapy	Music Therapy	Occupational Therapy	Play Therapy	Animal Therapy	Other
N	Valid	21	3	20	8	2	6
	Missing	9	27	10	22	28	24

The table shown above shows that Speech Therapy and Occupational Therapy were the two most common therapeutic interventions respondents' children are involved in.

The next question (P4) asked, "What way(s) are you involved in your child's early intervention program(s)"? The listed responses to choose from included visits to your child's program/classroom, attend meetings/conferences, parent training/education, communicate with staff working with your child, volunteer work, parent-child activities, and one-on-one instruction and attend workshops. Responses are displayed in Table 12 below.

Table 12: *Respondent types of involvement in their children's early intervention program distribution*

		Visits to your child's program and/or classroom	Attend Meetings & Conferences	Communicate with staff working with your child	Parent Training & Education	Parent-Child Activities	Volunteer Work	One-on-One Instruction	Attend Workshops
N	Valid	12	18	25	15	21	1	13	6
	Missing	18	12	5	15	9	29	17	24

The table shown above shows that respondents are involved in their children's early intervention program(s) in a variety of ways. The most common way in which respondents reported involvement was through communication with the staff working with their children following by parent-child activities, attending meetings and conferences, parent training and education one-on-one instruction and visiting their children's program and/or classroom. Six respondents reported that they attend workshops and one participant was involved in their child's program by volunteering.

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The last item of the parent involvement section of the survey stated the following: The biggest barrier that gets in the way of my involvement is... (P5). Barriers for the respondents to choose from included other children in the household, my job, stress, my child's teacher/therapist does not provide enough opportunities for my involvement, finances and lack of resources. This is a nominal variable and was descriptively measured through a frequency distribution and is shown in Table 8 below.

Table 13: *Respondent barriers that get in the way of involvement distribution*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Other children in the household	7	23.3	26.9	26.9
	My job	4	13.3	15.4	42.3
	Stress	3	10.0	11.5	53.8
	Finances	8	26.7	30.8	84.6
	Lack of resources	4	13.3	15.4	100.0
	Total	26	86.7	100.0	
Missing	System	4	13.3		
Total		30	100.0		

The table shown above shows that the biggest barrier that gets in the way of parental involvement in their children's early intervention program varied from person to person. The two most common barriers were finances and other children in the household.

The last section of the survey consisted of two parts: social skills and behavior. The first descriptive variable of this section was the respondents' ratings of their children's social skills using the respondents' Social Skills Scores (SSS). This interval variable was measured for central tendency and dispersion and shown on a histogram. A measure of central tendency and dispersion, shown in Table 14 below, portrays the descriptive statistics on the respondents' Social Skill Scores.

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Table 14: *Social Skills Scores (SSS) – Descriptive Statistics*

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
SSS	25	1.25	4.00	2.5533	.68164	.377	.464
Valid N (listwise)	25						

Table 14 demonstrates that the mean score of 25 participant responses was 2.55 out of a possible 4.0 with a standard deviation of .682. Higher Social Skills Scores (SSS) represent more positive social skills; therefore, the table above indicates that the respondents generally reported that their children sometimes used positive social skills. The minimum possible score was 1.25; whereas, the maximum possible score was 4.0. The distribution of scores is presented below in Figure 10.

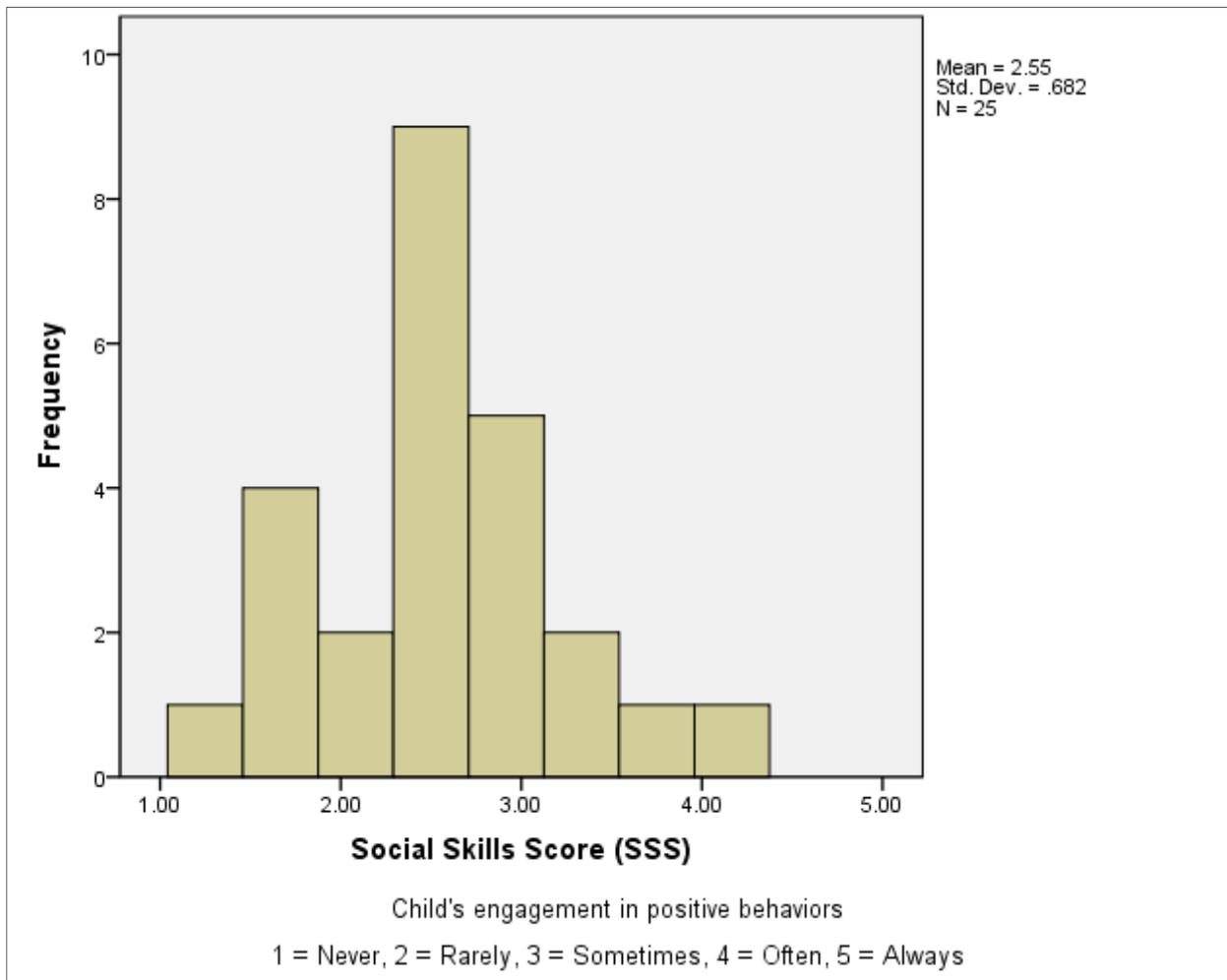


Figure 10: Social Skills Scores Histogram

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The histogram in Figure 10 shows that the responses approximate a normal curve because the data are most common at the center of the curve and approximately evenly distributed at the two tails.

The second descriptive variable of this section of the survey was the respondents' ratings of their children's behaviors using the respondents' Behavior Scores (BS). This interval variable was measured for central tendency and dispersion and shown on a histogram. A measure of central tendency and dispersion, shown in Table 15 below, portrays the descriptive statistics on the respondents' Behavior Scores.

Table 15: *Behavior Scores – Descriptive Statistics*

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
BS	24	1.77	3.62	2.7500	.41471	-.573	.472
Valid N (listwise)	24						

Table 15 demonstrates that the mean score of 24 participant responses was 2.75 out of a possible 3.62 with a standard deviation of .472. Higher Behavior Scores (BS) indicates more positive behavior; therefore, the table above indicates that the respondents overall reported that their children's behaviors were not a *serious* problem, rather the behaviors were mild to moderate. The minimum possible score was 1.77; whereas, the maximum possible score was 3.62. The distribution of scores is presented below in Figure 11.

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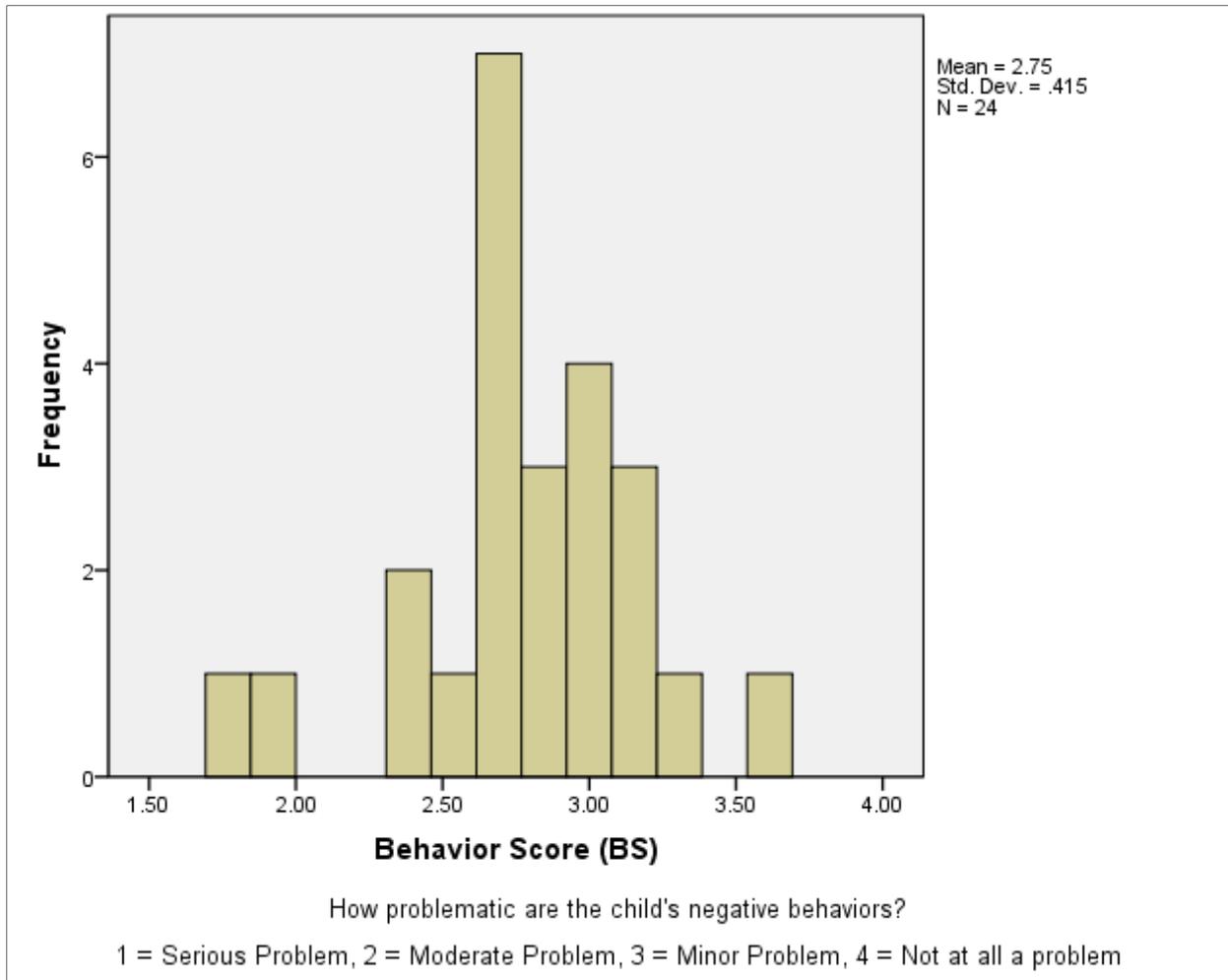


Figure 11: Behavior Scores Histogram

The histogram in Figure 11 shows that the responses approximate a normal curve because the data are most common at the center of the curve and approximately evenly distributed at the two tails.

Research Questions

The study was interested in whether there a relationship between parental involvement (P1) and their child's Social Skills Score (SSS).The findings were measured using the method of correlation and displayed in a scatter plot. Shown in Table 16 below are the results of the correlation conducted.

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Table 16: Relationship Between Parental Involvement (P1) & SSS

		(P1)	SSS
(P1)	Pearson Correlation	1	.018
	Sig. (2-tailed)		.954
	N	14	13
SSS	Pearson Correlation	.018	1
	Sig. (2-tailed)	.954	
	N	13	25

Table 16 shows the inferential statistics of the relationship between the two variables, (SSS) and (P1). The correlation results displayed above in Table 16 show that the Pearson Correlation (r-value) is .018. The r-value represents a weak correlation. The P-value is .954 which is more than .05; therefore, there is not a significant relationship between participants' ratings of their involvement in their children's early intervention program(s) and their children's use of social skills. The scatterplot is shown in Figure 12 below.

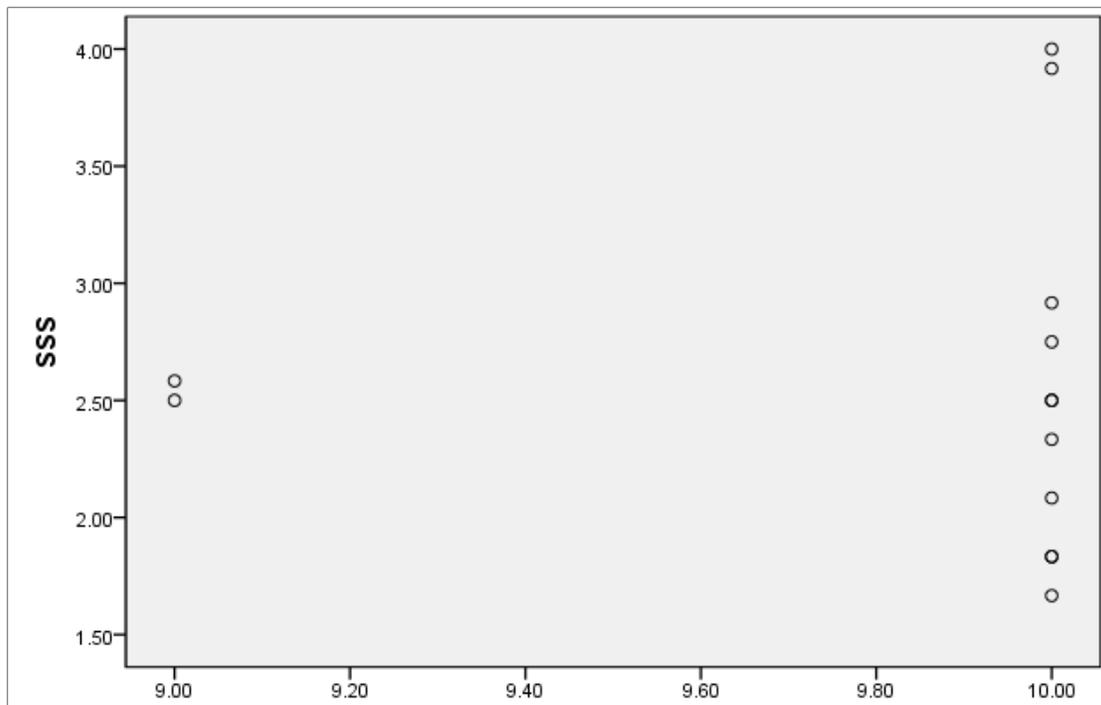


Figure 12. Relationship Between (SSS) & (P1)
 p-value = .954; r = .018

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The second question the study was interested in whether there a relationship between parental involvement (P1) and their child’s Behavior Score (BS).The findings were measured using the method of correlation and was displayed in a scatter plot. Shown in Table 17 below are the results of the correlation conducted.

Table 17: *Relationship Between Parental Involvement & BS*

		BS	(P1)
BS	Pearson Correlation	1	.123
	Sig. (2-tailed)		.702
	N	24	12
(P1)	Pearson Correlation	.123	1
	Sig. (2-tailed)	.702	
	N	12	14

Table 17 shows the inferential statistics of the relationship between the two variables, (BS) and (P1). The correlation results displayed above in Table 17 show that the Pearson Correlation (r-value) is .123. This r-value represents a weak correlation. The P-value is .702 which is more than .05; therefore, there is not a significant relationship between participants’ ratings of their involvement in their children’s early intervention program(s) and their children’s problematic behavior. The scatterplot is shown in Figure 13 below.

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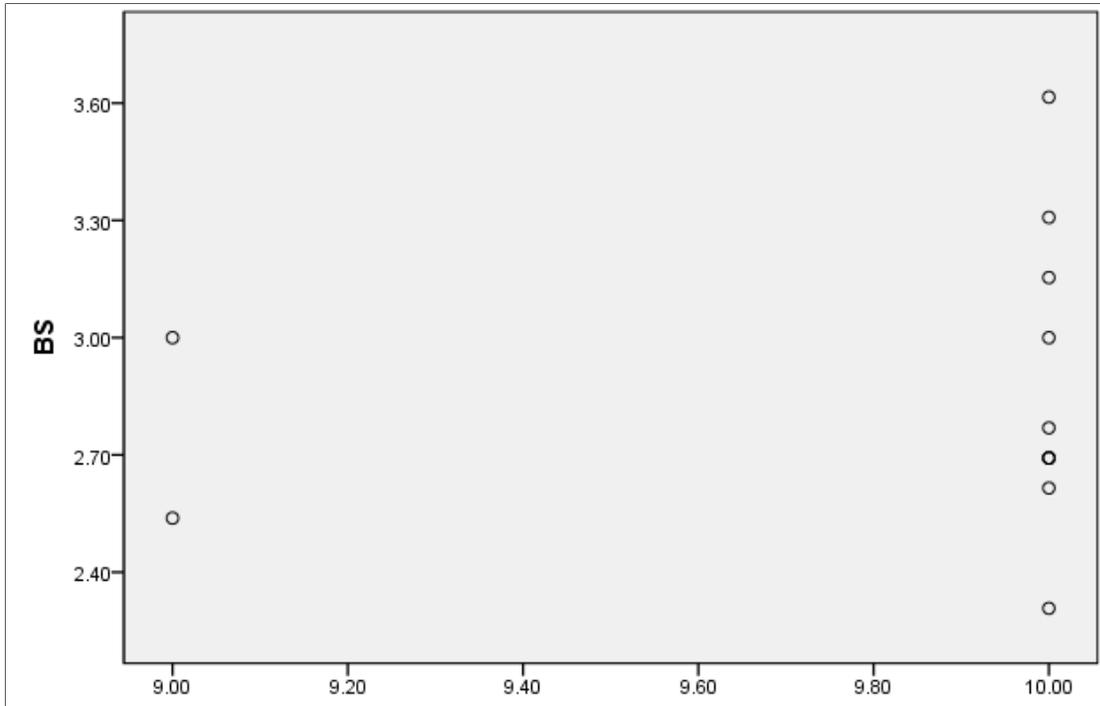


Figure 13. Relationship Between (BS) & (P1)
 p-value = .702; r = .123

Lastly, the following question was analyzed utilizing a correlation and scatterplot: Is there a relationship between the age at which the child was diagnosed with autism (D1) and parental involvement (P1)? The findings were measured using the method of correlation and was displayed in a scatter plot. Shown in Table 18 below are the results of the correlation conducted.

Table 18: *Relationship Between Parental Involvement & Age of Child’s Diagnosis*

Correlations			
		At what age was your child diagnosed?	(P1)
At what age was your child diagnosed?	Pearson Correlation	1	-.367
	Sig. (2-tailed)		.197
	N	28	14
(P1)	Pearson Correlation	-.367	1
	Sig. (2-tailed)	.197	
	N	14	14

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Table 18 shows the inferential statistics of the relationship between the two variables, (D1) and (P1). The correlation results displayed above in Table 18 show that the Pearson Correlation (r-value) is $-.367$. This r-value represents a medium correlation. The P-value is $.197$ which is more than $.05$; therefore, there is not a significant relationship between participants' ratings of their involvement in their children's early intervention program(s) and their children's age of diagnosis. The scatterplot is shown in Figure 14 below.

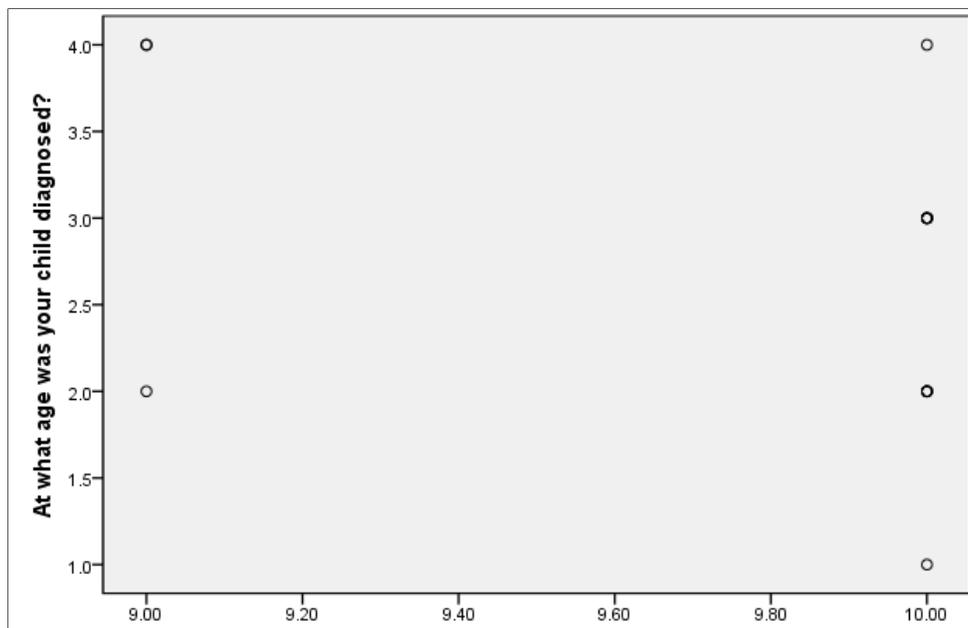


Figure 14. Relationship Between (D1) & (P1)
 $p\text{-value} = .197$; $r = -.367$

Discussion

The purpose of this study was to explore the association between parental involvement and the behavior and social skills of children with autism receiving services through an early intervention program. Parental involvement was a very important variable throughout this study and was measured by the extent to which respondents agreed with the following statement: I am very involved in my child's early intervention program(s). The scale provided on the survey was

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1 (Strong Disagree) to 10 (Strongly Agree). The responses for this study were limited and only 14 out of 30 participants responded to this item on the survey.

Of the 14 respondents that rated their parental involvement, 11 gave themselves a 10 out of 10 and 3 gave themselves 9 out of 10 (Figure 9 and Table 9). Research shows that increased parental involvement has a positive impact on children with autism; however, there is a need for continued research pertaining to how their involvement improves and/or influences outcomes of their children with autism (Walker, Wilkins, Dallaire, Sandler, & Hoover-Dempsey, 2005). Furthermore, the findings concluded that less than half of the participants responded to the self-reported ratings of their parental involvement. The findings of this study may have been more significant had all of the participants responded to this item on the survey.

For instance, Table 16 and Figure 12 represent an insignificant relationship between participants' ratings of their involvement in their children's early intervention program(s) and their children's use of social skills; however, it is important to note that respondent ratings of parental involvement very strikingly high.

This study showed that there was a medium correlation between the two variables, age of child's autism diagnosis (D1) and parental involvement (P1). The results of this correlation are displayed in Table 18 and Figure 14.

Participants' annual income averages are shown in Table 4 and Figure 4. The findings show a wide range of incomes which is interesting given the amount of people not working. Perhaps many of the respondents were stay-at-home parents. Moreover, respondent employment status results are shown in Table 5 and Figure 5. The findings show us that 57.1% of the respondents indicated that they are not employed. This could be indicative of a link between stay-at-home parents and involvement in their children's early intervention program(s).

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This study did not find an association between parental involvement in a child's early intervention program and a child's social skills and behaviors. This finding shows that out of the 28 respondents, their involvement does not significantly impact their child's social skills or behaviors. This differs from the research which says that parent education about autism and behavior management can improve the parent's confidence and self-esteem and can improve the child's behavior (Sofronoff Farbotko, 2002; Sofronoff, Leslie, & Brown, 2004).

Furthermore, respondents may have reported being more involved than they truly are in order to make a more positive impression despite the fact the survey was anonymous. Respondents may have exaggerated symptoms and behaviors in order to make their situation seem worse, over-reported the frequency in which their children engage in positive social skills or under-reported the severity or frequency of symptoms in order to minimize their problems.

The findings of this study showed that parental involvement and a child's social skills and behaviors are not significantly associated. Rather, the two variables have a weak relationship. This does not directly relate to Williamson and Martin's study (2012) that stated the following: Well-informed, engaged and proactive parents play a pivotal role in the treatment of their children and as the past two decades have shown, through their advocacy and involvement, they can help in the care of children with autism.

The importance of parent participation in the education of young children with autism is well-documented with research linking parent involvement to a variety of positive child outcomes including improved skill maintenance and generalization (Moes and Frea, 2002) as well as to enhanced family functioning and wellbeing (Koegel, Bimbela, and Schriebman, 1996). As a result, it is now widely acknowledged that parent involvement constitutes a crucial 'best practice' in the education of young children with autism (National Research Council, 2001).

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Limitations

One limitation is that less than half (14/30) of the participants responded to the question that measured parental involvement (P1). One possible explanation as to why less than half of the participants responded to this question may be due to the Likert scale on a continuum that was used to measure (P1). Most of the other questions on the survey were multiple choice questions, so participants may have been uncertain as to how to use the continuum and skipped over (P1). Moreover, out of the 14 participants that *did* use the continuum to rate their involvement, their responses were either a 9 or a 10.

Implications for Social Work Research

While this study aimed at the importance of parental involvement and social skills and behaviors of the child, the findings were insignificant and further research is needed in this area. Future research should investigate how parental involvement affects children's social skills and behaviors by recruiting a larger sample. Perhaps a study that is qualitative in nature would be beneficial in the future to allow participants to expand upon their answers and provide reasoning. Parent education about autism and behavior management can improve the parent's confidence and self-esteem and can improve the child's behavior (Sofronoff & Farbotko, 2002; Sofronoff, Leslie, & Brown, 2004).

Future research should investigate how parent education and parent's confidence and self-esteem can improve the child's behavior or social skills. For example, research could be conducted to examine the relationship between parental self-esteem and their child's social skills and behaviors. Future research could also be done in the same way this study has been conducted, but instead of using a convenient sample of only parents of children ages 2-7 with autism, it could include parents with children of all ages with autism.

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This study focused on parental involvement in early intervention programs and how this involvement impacts the social skills and behavior of children (ages 2-7) with autism. Perhaps the study could be slightly changed and given to a sample of early interventionists and/or teachers based on their experience with parents and young children with autism. Overall, although the results of this study were not significant, this study provides insight on the ways in which research could be done in the future.

Implications for Social Work Practice & Policy

Parent training, education and involvement are necessary components of attending to the needs of children with autism. According to Barkley (2006) the need to implement interventions in all settings where problems occur should be emphasized. Many collaborative teams in the early intervention programs for autism include parents, but an emphasis should be made on regular and collaborative contact between parents, therapist, teachers and clinicians to provide consistency, coaching, instruction and monitoring of the program. Increased knowledge and education about autism would be extremely beneficial and new policy initiatives should be put to be in place to effectively help children and families with autism.

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Appendix A

Diagnostic Criteria for Autistic Disorder (299.00)

- A. A total of six (or more) items from (1), (2), and (3), with at least two from (1), and one each from (2) and (3):
- 1) Qualitative impairment in social interaction, as manifested by at least two of the following:
 - a) marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction
 - b) failure to develop peer relationships appropriate to developmental level
 - c) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by lack of showing, bringing, or pointing out objects of interest)
 - d) lack of social or emotional reciprocity
 - 2) Qualitative impairments in communication as manifested by at least one of the following:
 - a) delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)
 - b) in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
 - c) stereotyped and repetitive use of language or idiosyncratic language
 - d) lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level
 - 3) Restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following:
 - a) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
 - b) apparently inflexible adherence to specific, nonfunctional routines or rituals
 - c) stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)
 - d) persistent preoccupation with parts of objects
- B. Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years: (1) social interaction, (2) language as used in social communication, or (3) symbolic or imaginative play.
- C. The disturbance is not better accounted for Rett's Disorder or Childhood Disintegrative Disorder.

Appendix B

Parental Involvement in Early Intervention Programs for Children with Autism INFORMATION AND CONSENT FORM

Introduction:

You are invited to participate in a research study investigating how parental involvement in early intervention programs is associated with more positive social skills and behavior of children (ages 2-7) with autism. This study is being conducted by Kaylee Nelson, a graduate student at St. Catherine University/University of St. Thomas. 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 association between parental involvement and the behavior and social skills of children with autism who are receiving early intervention services. Approximately 40 people are expected to participate in this research.

Procedures:

If you decide to participate, you will be asked to complete the online survey. This study will take approximately 20-30 minutes of your time.

Risks and Benefits of being in the study:

The study has no identified risks. The survey does not contain questions that are sensitive in nature. There are no direct benefits to you for participating in this research.

Confidentiality:

No identifying information will be collected to assure confidentiality/anonymity. Data collected will remain confidential and used for research and educational purposes only.

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 St. Catherine University/University of St. Thomas 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, Kaylee Nelson, at (507) 456-3772 and I will be happy to answer them. You may also contact my instructor, Sarah Ferguson, at (651) 690-6296. If you have other questions or concerns regarding the study and would like to talk to someone other than the researcher, you may also contact Dr. John Schmitt, Chair of the St. Catherine University Institutional Review Board, at (651) 690-7739. You may keep a copy of this form for your records.

Statement of Consent:

By completing this survey, you constitute your consent to participate in this research. Thank you for your consideration in participating in this study.

Appendix C

**Parental Involvement in Early Intervention Programs for Children with Autism
SURVEY**

Instructions: Please respond to the questions on this survey by choosing from the available options or using the scale provided. Skip any questions you cannot answer or feel uncomfortable answering.

PART I – DEMOGRAPHICS

(D1) At what age was your child diagnosed? _____

(D2) Was your child given a medical or educational diagnosis?

- a) Medical
- b) Educational

(D3) Your relationship status:

- a) Single
- b) Married/Partner

(D4) Your employment status:

- a) Full-time
- b) Part-time
- c) I am not currently employed outside the home.

(D5) Average income per year (including your partner if applicable):

- a) Less than \$20,000
- b) \$20,000-\$39,999
- c) \$40,000-\$59,999
- d) \$60,000-\$79,999
- e) \$80,000-\$99,999
- f) More than \$100,000

(D6) Your highest level of education:

- a) Unfinished high school
- b) High school/GED
- c) Bachelor's Degree
- d) Master's
- e) PhD

(D7) How many other children live in your household? _____

(D8) How many other children in your household have an autism diagnosis? _____

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PART II – PARENTAL INVOLVEMENT

Using the continuum below, please indicate how much you agree with the following statement:

(P1) I am very involved in my child’s early intervention program(s).

1 – Strongly Disagree	10 – Strongly Agree
------------------------------	----------------------------

(P2) What early intervention service(s) does your child currently receive? Check all that apply.

- | | |
|--|---|
| <input type="checkbox"/> Early Childhood Special Education | <input type="checkbox"/> Greenspan Floortime |
| <input type="checkbox"/> Applied Behavioral Analysis Therapy | <input type="checkbox"/> Early Start Denver Model |
| <input type="checkbox"/> Relationship Development Intervention | <input type="checkbox"/> Other |
| <input type="checkbox"/> Communication Handicapped Children (TEACCH) | |

(P3) What therapeutic intervention(s) is your child involved in? Check all that apply.

- | | |
|---|---|
| <input type="checkbox"/> Speech Therapy | <input type="checkbox"/> Play Therapy |
| <input type="checkbox"/> Music Therapy | <input type="checkbox"/> Animal Therapy |
| <input type="checkbox"/> Occupational Therapy | <input type="checkbox"/> Other |

(P4) In what way(s) are you involved in your child’s early intervention program? Check all that apply.

- | | |
|---|--|
| <input type="checkbox"/> Visits to your child’s program/classroom | <input type="checkbox"/> Volunteer Work |
| <input type="checkbox"/> Attend Meetings/Conferences | <input type="checkbox"/> Parent–Child Activities |
| <input type="checkbox"/> Parent Training/Education | <input type="checkbox"/> One-on-One Instruction |
| <input type="checkbox"/> Communicate with staff working with your child | <input type="checkbox"/> Attend Workshops |

(P5) The biggest barrier that gets in the way of my involvement is...

- a) Other children in the household
- b) My job
- c) Stress
- d) My child’s teacher/therapist does not provide enough opportunities for my involvement
- e) Finances
- f) Lack of resources

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PART III – SOCIAL SKILLS/BEHAVIOR

Social Skills: Using the scale below, please indicate how often your child does each of the following.

1 – Never	2 – Rarely	3 – Sometimes	4 – Often	5 – Always
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My child...

(S1) Expresses his/her feelings when sad, angry, happy, etc.	1	2	3	4	5
(S2) Calls people by their names	1	2	3	4	5
(S3) Smiles at people he/she knows	1	2	3	4	5
(S4) Is friendly to new people	1	2	3	4	5
(S5) Feels sorry when he/she hurts others	1	2	3	4	5
(S6) Makes people laugh by telling jokes, funny stories, etc.	1	2	3	4	5
(S7) Joins in games with other children	1	2	3	4	5
(S8) Starts conversations	1	2	3	4	5
(S9) Is interested in making new friends	1	2	3	4	5
(S10) Is interested in spending time with peers	1	2	3	4	5
(S11) Invites others to play	1	2	3	4	5
(S12) Plays cooperatively (shares, takes turns, follows rules)	1	2	3	4	5

Behavior: Using the scale below, please indicate which of the following behaviors are problematic for your child.

1 – Serious problem	2 – Moderate problem	3 – Minor problem	4 – Not at all a problem
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(B1) Taking other people's things without permission	1	2	3	4
(B2) Punching, slapping or hitting when angry	1	2	3	4

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(B3) Property destruction	1	2	3	4
(B4) Screaming and yelling	1	2	3	4
(B5) Impulsiveness	1	2	3	4
(B6) Low frustration tolerance	1	2	3	4
(B7) Temper tantrums	1	2	3	4
(B8) Overly worried about making mistakes	1	2	3	4
(B9) Hurts him/herself	1	2	3	4
(B10) Expresses worry about many things	1	2	3	4
(B11) Lies	1	2	3	4
(B12) Engages in odd, repetitive behaviors	1	2	3	4
(B13) Isolates his/herself	1	2	3	4