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Impact of parent education on parental expectations of children with autism

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IMPACT OF PARENT EDUCATION ON PARENTAL EXPECTATIONS OF
CHILDREN WITH AUTISM

A Thesis

Presented to

The Faculty of the Department of Psychology

San Jose State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Chelsea Morgan Contreras

August 2006

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ABSTRACT

IMPACT OF PARENT EDUCATION ON PARENTAL EXPECTATIONS OF CHILDREN WITH AUTISM

by Chelsea Morgan Contreras

The goal of this study is to obtain an initial assessment of the relationship between parent education and parental expectations of their children with autism. Parent education has been shown to improve the autistic child's level of functioning, and parental expectations have shown a positive correlation with level of functioning. However, there is little data supporting the possibility that parent education increases positive parental expectations. Results of the present study show that parents who participated in the parent education group had a significant positive change in their expectations for their children with autism. The parents who did not participate in the parent education program showed a slight, although statistically insignificant, decrease in positive expectations for their children. These results indicate that parent education has a positive effect on parental expectations. The data support the value of offering parent education programs to parents of children with autism.

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Introduction

Autism

According to a recent report from the Centers of Disease Control and Prevention (2006), the incidence of autism is one of every 166 American children, a figure, when extended to the general population of the United States, suggests that approximately 2,000,000 people could be diagnosed as autistic. Epidemiological reports have indicated that the number of children diagnosed with autism has increased each year (Fombonne, 1998; Koegel, Koegel, & Carter, 1999). In fact, autism is the third most common childhood disorder after cerebral palsy and mental retardation (Lovaas, 2003). According to the American Psychiatric Association's *Diagnostic & Statistical Manual of Mental Disorders*, 4th edition, text revision, autism is a complex developmental disability that appears prior to age 3 years. The current diagnostic criterion for autistic disorder consists of qualitative impairment in social interaction and communication skills and restricted repetitive and stereotyped behavior, interests, and activities (APA, 2000). Although autism is defined by a certain set of behaviors, children and adults with autism can exhibit any combination of the behaviors in any degree of severity, and individual functioning can fall within a wide spectrum of skill levels (Lovaas, 2003). Manifestations of the disorder vary greatly depending on the developmental level and chronological age of the individual (APA, 2000). For example, some individuals diagnosed with autism may have a greater delay in functional communication or increased behavioral excesses, while others may possess functional language but exhibit deficits in play skills and appropriate social behavior.

Intervention Programs

As this treatment-intensive population continues to increase each year, early diagnosis and the availability of appropriate educational programs are critical to children with autism (Lovaas, 2003). Early intervention programs for children with autism focus on improving social skills, communication, and behavior management (Olley & Gutentag, 1999). Currently, one of the most widespread and accepted treatment approaches for children with autism is Applied Behavior Analysis (ABA) (Lovaas, 2003). Applied behavior analysis is the science of human behavior, and this science is used in the implementation and evaluation of environmental modifications to improve socially significant behaviors to a meaningful degree (Skinner, 1974). Treatment success has been reported for nearly all of the autism programs implementing intensive ABA as an intervention for young children (Lovaas, 1987). According to Lovaas (1987), 47% of the autistic children in his treatment program acquired enough language, social, play, and self-help behaviors to be successfully included among typical children in preschool and kindergarten. In Lovaas' treatment study, autistic children who received early ABA intervention at ages 2-3 showed an average increase of 20 IQ points when measured at age 7 years compared to the unchanged IQ scores of autistic children that did not receive early ABA instruction (Lovaas, 2003).

Professional trainers who receive at least 30 hours in ABA training through private agencies or school districts provide many of these early intervention programs. Children diagnosed with autism learn to respond to professional trainers within a structured teaching session, but they often fail to maintain skills learned in teaching

sessions when in other environments (e.g., home settings), referred to as a lack of generalization (Lovaas, 2003). It is difficult to generalize skills taught in these programs when parents are not directly involved and cannot continue the skills development outside of therapy sessions (Olley & Gutentag, 1999).

Parent Education

According to Fox and Williams (1992), it is critical that family members be viewed as essential members of the educational process. Educating parents of children with autism in maintaining continuity of treatment for their own children is now understood to be a critical component of successful intervention programs (Stahmer & Gist, 2001). Children with autism demonstrate faster and more generalized skills acquisition when taught by their appropriately trained parents in conjunction with clinicians than when taught by clinicians alone (Koegel & Koegel, 1995).

The term *parent education* is used to describe interventions aimed at improving the skill of parents to promote the health, safety, and development of their children (Matthews & Hudson, 2001). Numerous investigators in the field of autism and related disabilities have reported that parent education approaches are an effective form of treatment delivery (Iacono, Chan, & Waring, 1998; Koegel, Bimbela, & Schreibman, 1996). It is well-established that parent education produces immediate change in child behavior and functioning (Harris, Wolchick, & Milch, 1983; Schreibman, Koegel, Mills, & Burke, 1984). For example, parent education programs have been shown to reduce behavior problems (Koegel, et al., 1996) and increase functional communication skills in children with autism (Harris, 1986).

In order to be effective, it is important to teach parents instructional methods that are associated with the child's skills acquisition, facilitate maintenance of skills, and promote generalization across people, settings, and behavior (Matthews & Hudson, 2001). In these interventions, parents are taught how to deal with behavior problems, foster independence with daily living skills, encourage functional communication, and increase a child's play skills repertoire (Baker, 1997). Lovaas, Koegel, Simmons, and Long (1973) found that the children with autism whose parents had received moderate training were more likely to maintain and continue to increase their skills than those whose parents had not received any training.

Parental Expectations

Parent education does not seem to be the sole factor in parental influence over skills acquisition. Clinicians often observe a relationship between parental expectations and the success of the child's skills acquisition (Edwards-Beckett, 1991). Parental expectations encompass a parent's beliefs and outlook on the potential of their child and play a role in a child's development, with research showing that expectations are often positively related to future outcomes for children (Field & Hoffman, 1999). For example, Duran and Weffer (1992) indicate that parents' developmental expectations are positively associated with outcomes for their children, both with and without developmental delays. Miller (1986) suggested that parents' inaccurate estimations of their children's abilities may negatively influence children's development by limiting parents' abilities to create an optimal, challenging environment. These findings support the idea that parental

expectations contribute to a “self-fulfilling prophecy” that determines the child’s ultimate level of functioning (Clare, Garnier, & Gallimore, 1998).

According to Wolfensberger and Kurtz (1974), social-role expectancies create powerful stimulus control over behavior, and persons expected to demonstrate certain behaviors tend to respond according to their assigned roles. In other words, if parents expect their child to be developmentally delayed, as characterized by the diagnosis of autism, then the child will tend to fulfill this role. Edwards-Beckett (1991) stated that developmentally delayed children’s deficits in cognitive development were correlated with maternal perceptions of the child being less competent than other children the same age. Simply put, parents who believed their child to be helpless were more likely to “baby” their child, thereby creating less opportunities for the child to perform skills on their own.

Impact of Parent Education on Expectations

Although many agencies involved in treating children with autism allocate resources to provide parent education, outcome assessment for these educational programs has been limited in scope (Matthews & Hudson, 2001). Overall, the research community has focused primarily on the treatment gains made by the children, leaving many unanswered questions about how parent education programs affect other family members, including parents (Koegel, Bimbela, & Schreibman, 1996). Parent education has been shown to influence child behavior, and it has been suggested that parents who participate in parent education programs are more realistic about their children with autism and more accepting of their children (Kuloglu-Aksaz, 1994).

Additionally, parent education contributes to providing an extension of treatment environments (i.e., generalization to other settings), ensuring continuity of treatment, and assisting parents in taking an active role in their child's development, which in turn gives the parents a more substantial investment in the child's learning (Schreibman, Koegel, Mills, & Burke, 1981). A small body of research even indicates that parent education can give parents the tools necessary to advocate for their children with the result of increased parental involvement (McGee, Jacobs, & Regnier, 1993). For parents to sustain the motivation to continue these supportive behaviors it might be assumed that they have some positive expectations for their children with autism. However, the impact of parent education on parental expectations has not been specifically addressed.

Purpose of the Present Study

As discussed above, studies have demonstrated that parent education improves the autistic child's level of functioning. It has also been shown that positive parental expectations improve the autistic child's level of functioning. However, there is a paucity of data supporting the possibility that parent education increases positive parental expectations. In an era of diminishing educational funding, and faced with a growing population of autistic children (Steuernagel, 2005), it would be prudent to optimize resource allocation, which requires an understanding of how early intervention programs achieve their results. The relationship between parent education, parental expectations, and child functioning has not been clearly defined. Therefore, it is important as a first step to establish the degree to which parent education effectively increases positive parental expectations.

The purpose of this study is to measure the impact of parent education on changing parental expectations of their autistic child's level of functioning. The specific hypothesis states that the measurement tool, the Parent's Expectations Inventory, will demonstrate statistically significant positive change in parental expectations, attributable to their participation in a parent education group. Demonstration of a positive change supports the value of further study as to how generally this effect can be achieved, how best to achieve it, and how strongly it correlates with an improvement in functional outcomes for children with autism.

Method

Participants

A sample of convenience served as participants for this study, consisting of 18 parental units whose children were in an early intervention program in the Cupertino Union School District. A parental unit is defined as at least one adult family member (e.g., mother, father, grandmother) responsible for the daily care of the child. All of the parental units had a child between the ages of three to eight with an educational or clinical diagnosis of autism, and the child was receiving at least 10 hours per week of Applied Behavior Analysis (ABA) therapy by professional trainers through the school district. Parental units were randomly assigned into one of two groups. The Treatment Group consisted of nine parental units of nine children with autism who participated in the parent education group. Parental units in the Treatment Group filled out a questionnaire before and after receiving an 8-week intervention. The Comparison Group served as a control group and consisted of nine parental units of nine different children with autism. The Comparison Group completed a pre-intervention and post-intervention questionnaire 8 weeks apart, but they did not receive an 8-week intervention.

Apparatus

The device used to measure the construct of parental expectations was the Parent's Expectations Inventory (PEI; Nakamura & Rogers, 1969). The PEI is designed to measure parent's expectations of autonomous behavior for any child. It reflects parental expectations of autonomous behaviors in 5 areas: Social, self-decision, physical, emotional control, and intellectual. The questionnaire consists of 70 statements regarding

selected behaviors at specific ages (see Appendix B for behavior statements). The PEI uses a six-option response scale (1-6) for each statement: 1=very common (occurs in 90-100% of children); 2=quite common (occurs in 70-90% of children); 3=common (occurs in 50-70% of children); 4=uncommon (occurs in 30-50% of children); 5=quite uncommon (occurs in 10-30% of children); and 6=very uncommon (occurs in 0-10% of children). The test-retest reliability of the PEI is .80 for mothers and .73 for fathers (Nakamura & Rogers, 1969).

Regardless of the number of family members that made up the parental unit, each parental unit completed only one PEI. The parental unit was first instructed to rate each statement on whether or not it described an “average” child at that age, and they recorded their ratings on the answer sheet provided. Then, using a second rating sheet, the parental unit was instructed to rate each statement on whether or not it described their child at that age, without looking at their previous answers. For statements that referred to ages older than their child, parental units were instructed to answer based on their expectations of their child at that age.

Procedure

First, the parental units in both groups were required to provide informed consent to participate in this study and specifically informed that they might not be assigned to the intervention group. Listing participants in alphabetical order by last name and using a random number table to assign a number to each name achieved randomization. The numbers generated from the table were listed in ascending order. The parental units corresponding to the first 9 numbers constituted the Treatment Group and the second 9

numbers constituted the Comparison Group. Those parental units who were randomly assigned to the Comparison Group were informed of their assignment and were given the opportunity to receive the intervention 2 months after the Treatment Group completed the intervention. To measure parental expectations before the parent education intervention, parental units in both groups completed the Parent's Expectations Inventory.

The parent education group was conducted by the researcher and consisted of eight meetings (1.5 hours per meeting) over an eight-week period for a total of 12 hours. If parental units attended less than 6 meetings, their data was not included in the study. For the purpose of this study, it was assumed that parental units who attended less than 75% of the meetings were not receiving enough information to fully benefit from the parent education group. The group education format provided parents with opportunities to learn and discuss issues with other parents based on curriculum by Baker & Brightman (1997). The instructor used material from Baker & Brightman's book to teach the participants in the parent education group and then parental units were given reading assignments from the book as a review of materials presented in the group. Parental units were also given a 4-item multiple-choice quiz on material presented at the previous meeting to test their mastery of the information presented. Mastery is defined as a score of 75% or above on the quiz. If mastery was not achieved, parental units were allowed to re-test until they received a score of 75% or above on each quiz. The purpose of the quiz was to test whether or not parental units were receiving the information presented in the parent education group.

The first meeting of the parent education group focused on the basics of skills teaching. The functional analysis model (i.e., antecedent-behavior-consequence) was introduced in terms of skills teaching. Parents learned how to “set the stage” for learning by manipulating antecedents. Antecedents to skills teaching include a lesson plan, materials, and location. Then parents learned how to operationally define a target behavior and learned how to establish steps (task analysis) for the targeted behavior. Parents learned the principles and types of reinforcement. Chapters 1-6 (37 pages) in Baker & Brightman’s (1997) book were assigned reading for parents, to be completed by the second meeting.

The second meeting focused on skills teaching, specifically *get ready* skills and self-help skills. *Get ready* skills include following directions (e.g., “sit down”, “look at me”, “come here”) necessary to teach more advanced skills. Parents filled out a self-help skills checklist about their child to determine which self-help skills needed to be taught. Based on their child’s ability, parents chose one self-help skill to teach over the next week. Parents wrote a task analysis for the targeted skill and learned how to teach with appropriate guidance (least to most assistance). Chapters 7-9 (37 pages) in Baker & Brightman’s (1997) book were assigned reading for parents, to be completed by the third meeting.

The third meeting centered on play skills, including independent and interactive play skills. Parents completed a play skills checklist to determine their child’s play skills level: basic play skills, skills for playing alone, and skills for playing with others. Based on their child’s ability, parents chose three play skills to teach over the next week. If

needed, parents wrote task analyses for the targeted play skills and chose reinforcing materials to teach the play skills. Chapter 11 (20 pages) in Baker & Brightman's (1997) book was assigned reading for parents, to be completed by the fourth meeting.

The fourth meeting introduced parents to verbal behavior and augmentative communication systems. Verbal behavior was discussed in terms of establishing operations and how parents can capture and contrive establishing operations. Parents were taught the differences between mands (requesting), tacts (labeling), and intraverbals (conversation). Several augmentative communication systems were discussed with the parents, including the Picture Exchange Communication System (PECS). Parents were given a packet of picture icons to take home with them.

The fifth meeting focused on functional communication (communicating wants and needs). Demonstrations on how to encourage spontaneous and self-initiated communication were presented to the parents. Parents were taught how to use picture icons with their child to facilitate communication. Parents were given a communication log to record their child's communication attempts through the week.

The sixth meeting centered on behavior problems. The functional analysis model was revisited but taught in terms of behavior problems. Parents learned how to manipulate the environmental antecedents in order to prevent behavior problems and reviewed how to operationally define behaviors. Parents were introduced to the functions of behaviors: to obtain, to escape/avoid, and intrinsic stimulation. Parents were asked to target one behavior problem their child demonstrates and record antecedent-behavior-

consequence data for one week. Chapter 16 (27 pages) in Baker & Brightman's (1997) book was assigned reading for parents, to be completed by the seventh meeting.

The seventh meeting focused on developing a behavior plan. Based on their behavioral data, parents identified the function of their child's behavior. Parents were taught appropriate consequences and replacement behaviors for each function of behavior. Parents incorporated all this information into a behavior plan for their child. Parents wrote a behavior plan in class and implemented this plan through the next week. Chapter 17 (23 pages) in Baker & Brightman's (1997) book was assigned reading for parents, to be completed by the eighth meeting.

The last meeting provided parental units with support and troubleshooting techniques for their child's behavior plan based on the data they recorded. At the end of the last meeting, parents were given a resource list of books, articles, and websites on the areas covered in the meetings to enable them to continue learning outside of the group.

After accomplishment of the parent education program, the Treatment Group completed the Parent's Expectations Inventory. Without participating in the parent education group, the Comparison Group completed the questionnaire eight weeks after they completed the first PEI.

Results

The experimental design for this study was a 2x2 mixed factorial design with the questionnaire as a within-subjects variable (with 2 levels: pre & post) and the intervention as a between-subjects variable (with 2 levels: intervention & no intervention). A total of 18 parental units participated in this study.

Table 1 displays the descriptive statistics for the study. Nine of the 18 parents (50.0%) received the educational intervention. A large percentage of the parents (77.8%) had a bachelor's degree or higher. English (66.7%) was the primary language for more than half of the parents with Mandarin (22.2%) and Vietnamese (11.1%) making up the remaining percentage. Most parents (94.4%) had either one or two children and the child with autism was most commonly (55.6%) the second child. Three quarters (77.8%) of the children with autism in the study were male (Table 1).

To determine whether group differences existed demographically, chi-square tests were performed between groups for highest parent education, primary language, total number of children, birth order of ASD child and gender of the child. None of these five chi-square tests were significant at the $p = .10$ level.

For each parental unit, the PEI generated two scores--one score for expectations of an "average" child and one score for expectations of their child with autism. The "average" child score is referred to as Average Child Score. The score for their autistic child is referred to as My Child Score. Each parental unit had a set of pretest scores and posttest scores.

Table 1. *Descriptive Statistics for the Sample (N = 18).*

		<i>n</i>	%
Group	Treatment	9	50
	Comparison	9	50
Highest Education	High School	4	22.2
	Bachelor's Degree	9	50
	Master's Degree	5	27.8
Primary Language	English	12	66.7
	Mandarin	4	22.2
	Vietnamese	2	11.1
Total Number of Children	One	3	16.7
	Two	14	77.7
	Three	1	5.6
Birth Order of ASD Child	First	7	38.9
	Second	10	55.6
	Third	1	5.6
Gender of ASD Child	Male	14	77.8
	Female	4	22.2

Since the distribution of variables was questionable and the sample size was small ($N = 18$), using a t-test to tell if there was a significant difference between the two groups was not appropriate. Therefore, a non-parametric alternative, the Mann-Whitney test, was used to compare the Treatment Group and the Comparison Group. The only assumptions of the Mann-Whitney test are that the two samples are randomly drawn and that the dependent variable is intrinsically continuous.

Table 2 displays the comparisons for selected variables based on group. Using the Mann-Whitney test, the Treatment Group parents had significantly higher pretest My Child scores ($M = 313.33$) than did the Comparison Group parents ($M = 276.00$). This difference was significant at the $p = .01$ level. Treatment Group parents also had a significantly larger difference score ($p = .01$) between their pretest My Child Score and their pretest Average Child Score ($M = 105.00$ versus $M = 59.11$). Also in Table 2, Treatment Group parents had a significant decline in their My Child pretest to posttest score ($p = .001$). For the My Child Score, a decline is considered a favorable change in parental expectations (see rating scale in Apparatus). No other Mann-Whitney test in Table 2 was significant at the $p = .10$ level.

The Wilcoxon Matched Pairs test was used to determine whether there were significant differences between the pretest and posttest scores of the parental units. It is a non-parametric test that calculates the difference between each set of pairs. To satisfy the assumptions of the Wilcoxon Matched Pairs test, sample sizes must be equal and the data sets should have something in common.

Table 2. *Comparison of Variables Based on Group. Mann-Whitney Tests (N = 18).*

	Group	<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>
Pretest Average Child Score	Treatment	208.33	24.79	0.13	.93
	Comparison	216.89	29.99		
Pretest My Child Score	Treatment	313.33	28.89	2.43	.01
	Comparison	276.00	28.28		
Difference in Pretest Scores	Treatment	105.00	27.31	2.52	.01
	Comparison	59.11	26.93		
Posttest Average Child Score	Treatment	201.33	22.08	1.02	.34
	Comparison	213.22	34.98		
Posttest My Child Score	Treatment	287.00	24.74	0.92	.39
	Comparison	277.89	32.94		
Difference in Posttest Scores	Treatment	85.67	23.94	1.46	.16
	Comparison	64.67	35.05		
Total Number of Children	Treatment	1.78	0.44	0.97	.49
	Comparison	2.00	0.50		

Table 2 *Continued*

Table 2 *Continued*

	Group	<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>
Age of ASD Child	Treatment	5.00	1.22	0.05	1.00
	Comparison	5.11	1.36		
Length of Services for ASD Child (Months)	Treatment	23.00	13.29	0.18	.86
	Comparison	22.78	9.81		
My Child Score: Posttest - Pretest	Treatment	-26.33	10.87	3.58	.001
	Comparison	1.89	8.45		

Table 3 displays the Wilcoxon Matched Pairs test scores for all parents ($N = 18$) as well as for the two groups separately. For all parents ($N = 18$), no pretest to posttest difference was found for the Average Child Score ($p = .13$). However, for all parents ($N=18$) a significant decline was found for the My Child score ($p = .01$). For the Treatment Group ($n = 9$), both the Average Child scores ($p = .05$) and the My Child scores ($p = .008$) showed significant declines, suggesting a positive change in parental expectations. For the Comparison Group ($n = 9$), neither the Average Child scores ($p = .86$) nor the My Child scores ($p = .62$) showed significant declines (Table 3).

Figure 1 displays the My Child score means. The My Child scores for the Treatment Group parents declined ($M = 313.33$ to $M = 287.00$) while the scores for the Comparison Group parents rose slightly ($M = 276.00$ to $M = 277.89$). Again, a decline in scores indicates a positive change in parental expectations.

Table 3. *Comparison of Pretest to Posttest Scores. Wilcoxon Matched-Pairs Tests.*

	Score	<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>
All Parents Combined (<i>N</i> = 18)					
Average Child Score	Pretest	212.61	27.05	1.53	.13
	Posttest	207.28	29.03		
My Child Score	Pretest	294.67	33.74	2.49	.01
	Posttest	282.44	28.65		
Intervention Parents Only (<i>n</i> = 9)					
Average Child Score	Pretest	208.33	24.79	1.97	.05
	Posttest	201.33	22.08		
My Child Score	Pretest	313.33	28.89	2.67	.008
	Posttest	287.00	24.74		
Comparison Parents Only (<i>n</i> = 9)					
Average Child Score	Pretest	216.89	29.99	0.18	.86
	Posttest	213.22	34.98		
My Child Score	Pretest	276.00	28.28	0.49	.62
	Posttest	277.89	32.94

Figure 1. *My Child's Score Based on Group.*

Discussion

The goal of this study was to obtain an initial assessment of the relationship between parent education about their autistic child and parental expectations regarding their child's level of functioning. As described above, parent education has been shown to improve the autistic child's level of functioning, and parental expectations have shown a positive correlation with level of functioning (Edwards-Beckett, 1991; Koegel, et al, 1996). The results of the present study show that parents who participated in the parent education group had a statistically significant positive change in their expectations for their children with autism. By contrast, the parents who did not participate in the parent education program showed a slight, although statistically insignificant, decrease in positive expectations for their children. These results indicate that parent education has a positive effect on parental expectations. At the same time, the results indicate that it is unlikely that parent education has a negative impact on parental expectations. The data support the value of offering parent education programs to caregivers of children with autism.

Another plausible alternative explanation for the positive change in parental expectations in the parent education group is that a regression towards the mean took place. A difference in pretest scores existed between the parents in the parent education and the parents who did not receive parent education. When a group with extreme performers, such as the parents in the parent education group, moves closer to the mean on the posttest, a regression towards the mean cannot be ruled out. It is a matter of some practical significance to confirm the findings of this study with a larger test population.

There are additional findings of the study that warrant further comment and suggest further research.

No significant demographic differences were revealed between parents who received parent education and those who did not receive the intervention. However, pretest results show that there were significant non-demographic, child pretest differences between the two study conditions before the intervention began. As reflected in their pretest responses, parents assigned to the parent education group had lower expectations of their children with autism compared to the parents assigned to the non-intervention group. In addition, pretest scores indicated that the parents who were assigned to the parent education group had a larger discrepancy between their expectations of “average” children and their own children with autism, suggesting they expected their children would do less than average children. Since no significant demographic differences were shown between the two groups of parents, it is assumed that these differences in expectations are a by-product of the random assignment process.

After participating in the intervention, the discrepancy between “average” children and their own children with autism was no longer statistically significant between the two groups. This change indicates that parents who participated in the parent education group shifted their expectations of their own children with autism to be more in line with expectations of an “average” child. For the parents receiving education, their expectations both for their children with autism and for “average” children showed positive change. These findings are consistent with previous research demonstrating that when parents gather information about their children, they are more accurate and positive

in their estimations of how their children will function in the future (Gallimore, Weisner, Garnier, & Guthrie, 1997). The parents who did not participate in the parent education group showed no statistically significant change in their expectations of “average” children or their own children with autism. If parents in the education group had begun the study with scores equivalent to those of the parents in the comparison group, the change in expectations would be even more readily observable.

The parents in this study did not exhibit a great deal of demographic diversity, in spite of ethnic differences. However, the study participants do reflect the make-up of the local parent population seeking services for their children with autism. Most of the parents in this study were college educated and the primary language spoken at home was English. Other studies that include parents of autistic children receiving services show the same features in their study populations—they are well educated and speak English (Ivey, 2004; Stahmer & Gist, 2001; Symon, 2005). In many instances, parents from lower socioeconomic groups, or who speak limited English may not seek out services available to them (Santarelli, Koegel, Casas, & Koegel, 2001). Further studies with a wider diversity in parental demographics would be useful in being able to generalize these findings. It would also be valuable to know how parental expectations of their children with autism affect their efforts to seek services, including opportunities for parent education, and whether those expectations are arrived at individually or through cultural norms.

Numerous studies document the effectiveness of parent education programs in improving child functioning and family environment (Koegel & Koegel, 1995; Stahmer

& Gist, 2001), but research has yet to focus on how to most effectively teach parents in these programs. Determining the educational elements that contribute most to increases in positive expectations is one avenue of research that would make a contribution to this literature.

This study does not support the idea that the passage of time alone changes parental expectations in a positive way, at least over the short term. Other researchers suggest that parents do actively adjust their expectations without any intervention and also do so as their children mature (Anton & Dindia, 1984; Jensen & Kogan, 1962). However, the parents in the non-intervention group did not significantly change their expectations in the 2-month period. Recognizing that a 2-month intervention is not an extensive span of time, it would be important in demonstrating the linkage between parental expectations and education to conduct a study comparing changes in parental expectations over longer periods in parents participating in parent education programs and parents who do not participate in such programs. Another essential aspect of this research to explore would be to determine whether the impact of parent education on parental expectations is maintained over time. Most importantly, for children with autism, data must continue to be acquired demonstrating the impact of role expectations on autism treatment outcomes.

The change in parental expectations for those parents who participated in the parent education group is statistically significant. This study was not designed to address the many ways that parent education programs might impact the lives of families living with children with autism. It does, however, document the positive changes in parental

expectations from participation in an eight-week parent education group. The findings support the assertions of Kuloglu-Aksaz (1994) by demonstrating that parent education programs can influence parental views and expectations of their children. Research must continue to assess the degree to which improvements in parental expectations brought about by education can be linked to improvements in clinical results for children with autism.

Autism is a significant and growing social problem. There is a pressing need to know how best to reconcile autistic children with society at large, and how best to enable them to function at the highest possible level within their families and within their society; this study is a small contribution to that endeavor.

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Appendix A

Human Subjects—IRB Approval Form

**Office of the Academic
Vice President**

**Academic Vice President
Graduate Studies and Research**

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Voice: 408-283-7500
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To: Chelsea Contreras
Department of Psychology 0120

From: Pam Stacks,
Interim AVP, Graduate Studies & Research

Date: February 4, 2005

The Human Subjects-Institutional Review Board has approved your request to use human subjects in the study entitled:

“Impact of Parental Education and Parental Expectations of Children with Autism.”

This approval is contingent upon the subjects participating in your research project being appropriately protected from risk. This includes the protection of the anonymity of the subjects' identity when they participate in your research project, and with regard to all data that may be collected from the subjects. The approval includes continued monitoring of your research by the Board to assure that the subjects are being adequately and properly protected from such risks. If at any time a subject becomes injured or complains of injury, you must notify Pam Stacks, Ph.D. immediately. Injury includes but is not limited to bodily harm, psychological trauma, and release of potentially damaging personal information. This approval for the human subjects portion of your project is in effect for one year, and data collection beyond February 4, 2006 requires an extension request.

Please also be advised that all subjects need to be fully informed and aware that their participation in your research project is voluntary, and that he or she may withdraw from the project at any time. Further, a subject's participation, refusal to participate, or withdrawal will not affect any services that the subject is receiving or will receive at the institution in which the research is being conducted.

If you have any questions, please contact me at (408) 924-2480.

cc: Glenn M. Callghan, Ph.D.

Appendix B

Parent's Expectations Inventory-Behavior Statements

1. Ann is two years old. She stays happily with the next-door neighbor while her mother goes shopping.
2. Johnny is two years old. He refuses to eat at mealtime unless he can feed himself.
3. Ann is two years old. She can turn the water faucet in the kitchen on and off by herself when she needs a drink.
4. Johnny is two years old. When going down the escalator at the shopping mall, his mother wants to hold his hand. He pulls away from her and goes down alone.
5. Ann is two years old. She can climb the five steps to the top of the slide in the park and slide down.
6. Johnny is two years old. He is often observed speaking 5-6 word sentences.
7. Ann is two years old. Whenever her parents have company, she insists on sitting in her mother's lap.
8. Johnny is two years old. He has a set of nesting cups. He can put one inside the other from biggest to smallest.
9. Ann is three years old. She cries when her mother leaves her in their own home with new babysitters.
10. Johnny is three years old. He insists on putting on his socks alone.
11. Ann is three years old. She can pour milk from a small pitcher into her cup without spilling.
12. Ann is three years old. At preschool she often needs to watch other kids playing for a while before she is ready to play.
13. Johnny is three years old. He asks the child next door to come play with him. They pretend to be dinosaurs and stomp around the house.
14. Ann is three years old. She refuses to let her mother help her put on her sandals. She wants to do it herself.

15. Johnny is three years old. He can ride a tricycle following a figure 8 path drawn on the driveway.
16. Ann is three years old. She uses the toilet when she needs to go without asking for help.
17. Johnny is three years old. He can zip-up his jacket and button his pants by himself.
18. Ann is three years old. She can pull her underpants down and up by herself when she uses the toilet.
19. Johnny is three years old. He steps on ants, spiders, and other bugs he finds in the yard and watches them wriggle with interest, but with no noticeable emotional reaction.
20. Ann is four years old. She clings to her mother and cries when she meets an unfamiliar person.
21. Johnny is four years old. He goes shopping with his mother. He wants to take his dog along. His mother says no. He sulks and refuses to talk with his mother for the next hour.
22. Johnny is four years old. He stands and watches other kids play and does not join in most of the time at preschool.
23. Ann is four years old. She tells her mother what she would like to eat for lunch.
24. Johnny is four years old. He knows his telephone number and address.
25. Johnny is four years old. He follows his mother around the house most of the time and does not play independently.
26. Ann is four years old. She can throw, catch, and kick a ball to another person.
27. Johnny is four years old. When his mother talks on the phone, he gets upset and tries to hang up the phone.
28. Johnny is four years old. He is shopping with his mother in a toy store. He sees something he wants very much. His mother explains that he cannot have it. He throws a temper tantrum.
29. Johnny is four years old. He starts to attend preschool. He has no difficulty making several friends the first day.

30. Ann is four years old. She climbs a stepstool to reach the bathroom sink and brushes her teeth without adult help.
31. Ann is four years old. While telling her father about what she played that day, she tends to have difficulty expressing herself as she stutters and repeats herself.
32. Ann is four years old. She has spent her first day at preschool. When her mother comes for her after the 3-hour period in school, Ann is reluctant to leave the other children and go home with her mother.
33. Johnny is four years old. A new family with a boy his age has moved next door. Johnny has no one else to play with, but he refuses to go over and meet the boy even with his mother's encouragement. He stays inside and watches television.
34. Ann is four years old. She recognizes her first and last name in writing.
35. Ann is four years old. Whenever her parents take her on a car ride, she attempts to buckle her safety belt by herself.
36. Johnny is four years old. He can put on his shoes and tie the laces.
37. Johnny is four years old. His mother lays out his clothes when she wakes him up in the morning. He dresses and washes himself before coming to breakfast.
38. Johnny is four years old. He sucks his thumb and carries his "blankie" around with him.
39. Ann is four years old. Her mother has to go run some errands. She takes her to the neighbor with whom she has occasionally left her. Ann clings to her mother and cries when she leaves.
40. Johnny is five years old. He can tell time to the quarter hour (e.g., 10:15, 7:30, 1:45).
41. Johnny is five years old. He often wets the bed at night.
42. Ann is five years old. When she does something wrong, she always asks her mother whether she still likes her.
43. Johnny is five years old. He does not share his toys when his friends come over to play.

44. Johnny is five. He reads traffic signs, some TV commercials, and product names on cereal boxes.
45. Ann is five years old. She has learned to tie her shoelaces but continues to ask her mother to do it for her.
46. Johnny is five years old. His parents are expecting guests. Johnny insists on answering the door when the doorbell rings.
47. Ann is five years old. She counts to 50 with no mistakes.
48. Johnny is five years old. It is his first day of kindergarten. All the kids have brought their lunches. During lunchtime, Johnny sits at the edge of the group and watches but does not interact with the other kids.
49. Johnny is five years old. The ice cream truck drives by. He wants some ice cream, but his mother says no. Johnny shrugs his shoulders and returns to his play.
50. Ann is six years old. She does not want to let her mother comb her hair in public. She wants to do it herself.
51. Johnny is six years old. He can spell approximately 20 words.
52. Johnny is six years old. He frequently walks to the grocery store alone to buy his mother milk, eggs, or bread.
53. Ann is six years old. She wants to watch television, but her mother tells her it is bedtime. She kicks her mother.
54. Ann is six years old. The nightlight in her bedroom does not work. She is afraid of the dark and refuses to go to bed until the light is fixed.
55. Johnny is six years old. He is playing with his blocks and has almost completed his tower. His mother asks him for the third time to put them away and get ready for dinner. He continues to play and completely ignores her repeated requests.
56. Ann is six years old. She can count by 2's, 5's, and 10's up to 50.
57. Johnny is six years old. When he is finished playing with his toys in his room, he puts them away without having to be told.
58. Ann is six years old. She uses the microwave to heat up her snack.

59. Ann is six years old. She bites her fingernails constantly.
60. Ann is six years old. She is at a birthday party. The children are playing the game of “guess the animal sound”. When it is her turn to imitate an animal, she does not respond.
61. Ann is six years old. She does not want to wear the shirt her mother has laid out because it is not her favorite color.
62. Johnny is seven years old. He is able to use the dictionary to determine the correct spelling of words.
63. Ann is seven years old. She decides by herself which clothes she will wear to school each day.
64. Johnny is seven years old. He is sent to his room for hitting his sister. Alone in his room, he plays on the computer.
65. Ann is seven years old. She goes with her parents to visit a family she has never met. The family has a girl of her age. She chooses to stay by her mother rather than go out and play with the other girl.
66. Johnny is seven years old. His mother offers to give him a ride to school. He refuses and rides his bike to school instead.
67. Johnny is seven years old. He is able to turn on the water and take a shower without any adult assistance.
68. Ann is seven years old. When her parents punish her, she refuses to eat and drink.
69. Johnny is seven years old. He can hit a baseball with a bat and throw a baseball to another player.
70. Johnny is seven years old. On occasion, he writes short (20 word) letters to his grandparents.