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Parent-Teacher Collaboration for Students with Autism Spectrum Disorders: The Role of Teacher Training

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Running Head: TEACHER TRAINING

Parent-Teacher Collaboration for Students with Autism Spectrum Disorders:

The Role of Teacher Training

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Abstract

Over twenty years of research has demonstrated that collaborative relationships between parents and teachers are invaluable in enhancing the educational success of all students and are especially meaningful when students have ASD (e.g., Ruble & Dalrymple, 2002). However, collaborative relationships are often difficult to develop because many educators remain uninformed about ASD (Helps, Newsom-Davis, & Callias, 1999) and untrained in working with parents (Lazar & Slostad, 1999). The present study evaluated the ability of an intervention to (a) encourage more positive attitudes toward parent-teacher collaboration, (b) increase general knowledge about ASD, and (c) boost comfort, competence, and confidence levels with regard to working with parents of children with ASD.

The study followed an experimental design, with 30 college students randomly assigned to either the experimental Collaboration Training intervention or the alternative treatment Autism Information intervention. Analyses of pre- and post-intervention measures revealed that participants reported significantly more positive attitudes toward parent-teacher collaboration, more knowledge about ASD, and more confidence in their abilities to work with parents of children with ASD after training than they did before training. Additionally, the experimental Collaboration Training condition yielded significantly higher increases in confidence across time than did the control Autism Information condition.

Parent-Teacher Collaboration for Students with Autism Spectrum Disorders:
The Role of Teacher Training

The last twenty years of research concerning parent involvement in education have been characterized by a heightened awareness of the effects that family influence has on children's educational progress as well as recognition of the essential features of constructive, collaborative relationships (Christenson, 2004). Effective parent-teacher relationships are best conceived as connections between the two socializing forces in students' lives with the ultimate goal of enhancing their academic, social, behavioral, and emotional development (Christenson & Godber, 2001). The collaborative relationship emphasizes the interplay between parents and teachers without designating specific roles for either to assume, and cooperative problem solving creates mutual support for interventions that boost student achievement.

Such a relationship is especially important for children with disabilities, such as autism spectrum disorders (ASD), which are characterized by a range of cognitive, sensory, motor, communicative, and social deficits (Kelley & Samuels, 1977; Ruble & Dalrymple, 2002; Scheuermann, Webber, Boutot, & Goodwin, 2003). Although younger and more severely impaired children with ASD often receive highly structured, empirically-supported educational programs, the majority of high-functioning students are taught in the general education classroom, frequently by teachers with limited knowledge of autism and inadequate training in how to educate these individuals (DiPietro et al., 2002; Helps, Newsom-Davis, & Callias, 1999; Kunc, 2003; Spann, Kohler, & Soenksen, 2003). As more students are now being identified with ASD than ever before, parents' knowledge about their children becomes increasingly essential to

teacher competency (Ruble & Dalrymple, 2002). For example, if teachers recognize parents as experts with regard to working with their children, effective educational strategies (e.g., visual communication systems, written schedules, checklists) already occurring in the home may be generalized to the school setting, further increasing the likelihood of academic achievement.

Successful parent-teacher relationships are difficult to translate into practice, though, particularly when children have ASD. Epstein and Dauber (1991) demonstrated that educators are more likely to initiate contact with parents when they share similar beliefs and values. As parents and professionals often have different perspectives regarding autism (Stone, 1988) and different beliefs about students' levels of impairment (Geiger, Smith, & Creaghead, 2002), the likelihood of teacher outreach may be reduced. In addition, many educators are unprepared to work with parents due to a lack of specific training both in autism, as previously mentioned, and in collaboration itself (Lazar & Slostad, 1999; Peeters, 2000). More specifically, Leitch and Tangri (1988) concluded that one of the strongest barriers to successful collaborative relationships is that teachers are not knowledgeable about how to work effectively with parents.

The present study explored training future education professionals in parent-teacher collaboration. In particular, we evaluated an intervention that was designed to (a) encourage more positive attitudes toward collaboration, (b) provide educators with a basic theoretical understanding of autism, and (c) help educators to feel more comfortable, competent, and confident in their abilities to work with parents of children with ASD. This research built on a prior study in which the same intervention was provided to parents and teachers from a local school district, who evaluated it as

appropriate, useful, and effective (Kunce & Vacco, 2003). Because a control group was not used in the prior study, we sought causal data in support of the collaboration training program.

To better understand the significance of the study, it is necessary to first review the existing literature concerning parent-teacher relationships. The following pages will summarize clinical and research work on the importance of parent-teacher collaboration, particularly for students with ASD, and the importance of teacher training in both ASD and working with parents.

The Importance of Collaboration

In recent years, collaborative relationships have been associated with many positive educational outcomes. Although no causal inference can be drawn as yet, it is still important to examine how collaboration co-varies with academic success. For instance, students who receive higher grades often have parents who are more involved with their schooling (Fehrmann, Keith, & Reimers, 1987). Family engagement is also related to fewer behavior problems and suspensions (Comer & Haynes, 1991) as well as lower dropout rates (Rumberger, 1995). Moreover, the benefits of parental involvement extend far beyond immediate achievement, as students with engaged parents are more likely to enroll in postsecondary institutions, thereby increasing their chances for success in adulthood (Baker & Stevenson, 1986).

Advantages have also been documented for parents and teachers. More involved parents have reported greater feelings of self-efficacy (Kagan & Schraft, 1982 as cited in Christenson & Hurley, 1997), an enhanced understanding of the school system (Epstein, 1986), and higher levels of appreciation and motivation to play active roles in their

children's educations (Becher, 1984 as cited in Christenson & Hurley, 1997). When teachers allow parents in their classrooms, they gain professional competency and the likelihood for parent-teacher conflict is reduced (Lazar & Slostad, 1999). Furthermore, Epstein (1985) found that principals and parents rated the general teaching ability and interpersonal skills of educators higher if they encouraged parental involvement than if they did not.

So great are the perceived benefits of parent-teacher collaboration that legislation has recently been adopted in its favor. For example, the Goals 2000: Educate America Act states, "Every school will promote partnerships that will increase parental involvement and participation in promoting the social, emotional, and academic growth of children," (Gareau & Sawatzky, 1995, p. 38). Furthermore, the Individuals with Disabilities Education Act (IDEA) recognized parental involvement as especially meaningful for students with disabilities (Westling, 1997). IDEA mandated that every child with a disability receive a free and appropriate education (FAPE) with specific objectives and teaching strategies outlined in an Individual Education Plan (IEP). The IEP is compiled by a cooperative team of professionals, often including psychologists, teachers, and therapists in conjunction with the parents.

The Importance of Collaboration for Students with ASD

Although successful collaborative relationships are valuable to the academic achievement of all students, including those with any degree of impairment, they become particularly important when children are identified with autism. One reason for this regards the broad range of cognitive, sensory, motor, communicative, or social impairments that may be present (Ruble & Dalrymple, 2002). Given the variability in

students' strengths and weaknesses, a diagnosis of ASD does not delineate certain IEP objectives or teaching strategies (Moroz, 1989). Additionally, autism is a lifelong disability, and goals should target long-term changes, as opposed to the short-term aims of most cooperative teams (Ruble & Dalrymple, 2002). Thus, collaborative relationships provide a means for parents and teachers to support each other over the broad spans of time necessary for interventions to be effective.

Second, research has demonstrated that students with ASD achieve greater success when home and school simultaneously attempt to achieve the same educational goal such as the acquisition of a specific social skill (McGee, Morrier, & Daly, 1999). For this to happen, parents and teachers must both work toward the same goal in the same way at the same time. Thus, consistency across goals and intervention procedures is critical (Ruble & Dalrymple, 2002). To ensure consistency, parents and teachers need to operate as a knowledgeable, coordinated team in prioritizing goals and developing strategies to achieve those goals (Scheuermann et al., 2003).

Finally, parent-teacher collaboration is necessary to increase the social validity of educational interventions for children with ASD (Ruble & Dalrymple, 2002). An intervention has social validity when its consumers evaluate it as being appropriate, useful, and effective. For instance, Runco and Schriebman (1983) included assessments of how noticeable and important behavior changes were to the parents of children with ASD in their evaluations of behavioral management programs. If parents believe a given intervention is socially valid, teachers may be more likely to incorporate it into their students' educational programs. Likewise, parents may be more apt to implement

educational interventions in the home if they are recommended and used by their children's teachers.

The Importance of a Training Program in Autism and Collaboration

If parent-teacher collaboration is needed when students have ASD, teacher preparatory programs become increasingly important for the development of effective collaborative relationships. Training may strengthen educators' beliefs that parents are the best resources for gathering relevant and valuable information regarding the abilities and interests of their children (Schopler, 1997). Additionally, training may provide teachers with an awareness of what type of information they should seek from parents. Training is also likely to increase the self-confidence of educators, enabling them to reach out more to parents (Hoover-Dempsey, Bassler, & Brissie, 1987). We can assume that teachers will be more effective in working with children with ASD and their parents when they (a) hold positive attitudes toward parent-teacher collaboration, (b) are knowledgeable about autism and best-practices in parent-teacher collaboration, and (c) are comfortable, competent, and confident in their teaching abilities and skills in working with families. However, many existing teacher preparatory programs fail to provide pre-service professionals with the attitudes, knowledge, and confidence required (Helps et al., 1999; Lazar & Slostad, 1999; Peters, 2000; Scheuermann et al., 2003).

For instance, today's educators rarely receive education about ASD itself. Helps and her colleagues (1999) demonstrated that most teachers lacked a basic theoretical understanding of autism, and many had outdated beliefs about the disorder. Even special education teachers of students with ASD receive little training in how to work effectively with these individuals (Helps et al., 1999; Stone, 1988). Teacher training programs

simply do not have to include information on autism because the Council for Exceptional Children has not yet designed teaching standards in this area (Scheuermann et al., 2003).

Additionally, educators receive limited information on how to collaborate with parents of children with ASD (Lazar & Slostad, 1999). Spann et al. (2003) designed a study to assess the nature of parent-teacher relationships when a child with autism is involved. Parents of 45 children with ASD were interviewed about their communication with school personnel, their involvement in the IEP process, and their perceptions of the educational services their children receive. The researchers found that 73% of the children were spending at least part of the school day in general education classrooms, but 44% of their parents indicated that schools and teachers were doing nothing to address their most pressing needs. During one interview, a parent expressed an explicit belief in the importance of teacher training in ASD and collaboration: "The staff needs to be educated on autism and how to teach these children (p. 234)."

Training in collaboration is also necessary for the cooperation among professionals, which is especially important for the sake of children with ASD whose IEPs often call for input from general education teachers, special education teachers, speech therapists, physical therapists, occupational therapists, psychologists, and personal assistants (Marcus, Kuncze, & Schopler, in press). Yet the Study of Personnel Needs in Special Education reported that 47% of special education teachers received no information regarding collaboration among education professionals in their pre-service courses (Scheuermann et al., 2003). Given such failures in teacher preparatory programs, it is particularly vital to provide educators with supplementary training in collaboration.

This training could be added to the general curriculum for undergraduates who plan to teach. For example, Morris and Taylor (1998) implemented a course for education majors with the following underlying assumptions: (1) parental involvement is essential to child success, (2) parents and teachers are equal partners in the educational process, (3) teachers who feel confident in their abilities to collaborate will be more likely to reach out to parents, and (4) teachers must take responsibility for engaging families. Assignments included conducting parent-teacher interviews, developing an education plan to encourage parent involvement over a period of one school year, keeping a parent involvement notebook, and planning and implementing a parent workshop. Enrolled students completed pre- and post-intervention measures to assess their knowledge of and comfort with parent-teacher collaboration. Results indicated that students felt significantly more knowledgeable and comfortable at the end of the course. Furthermore, qualitative essays demonstrated that students perceived themselves as being more knowledgeable and comfortable. Regarding the required parent-teacher interview, one student wrote, "I feel more comfortable talking to parents now. I feel like I know how to handle parents when I talk to them. This assignment made me feel more comfortable around parents because I learned how to communicate with them (p. 226)."

A similar course or professional workshop might also be effective in teaching educators about autism as well as parent-teacher collaboration (Scheuermann et al., 2003; Tissot, 2001), but this has not yet been tested. The present study attempted to fill this gap in the existing literature. We were interested in the ability of an intervention to provide educators with a basic theoretical understanding of autism, a general rationale for parent-teacher collaboration, and specific instruction on how to use a semi-structured interview

to gather information from parents of children with ASD. Our hypotheses were two-fold. First, after completing the training program, participants would report (a) more positive attitudes toward parent-teacher collaboration, (b) increased knowledge about autism, and (c) increased comfort, competence, and confidence in their abilities to work with parents of children with ASD. Second, effects would be even more significant for experimental participants who received training in the semi-structured parent interview than for alternative treatment participants who received information on facilitated communication and other discounted treatments.

Method

Participants

Participants were 30 college students at a small, midwestern liberal arts college. Of these, 17 were elementary education majors, 10 were secondary education majors, 1 was a music education major, and 1 was an English major. As all participants planned to pursue teaching or related positions, they were likely to work with students with ASD and their parents in the future. Three participants were male, and 27 were female, which reflects the entire population of education students fairly accurately. Ages ranged from 18 to 22 ($M = 19.93$, $SD = 1.33$). More demographic information can be found in Table 1.

Participants were recruited through announcements in educational studies courses, e-mail fliers, and by word of mouth. Informed consent forms stated clearly that their participation was completely voluntary and that they could withdraw from the study at any time without penalty. To compensate for their time, participants were allowed to select from a menu of thank-you gifts.

Materials

The primary materials for this study were the videotaped lectures used in the intervention. Lectures on autism, shown in both training conditions, and on the parent-teacher interview, shown in the experimental condition, were given by the same individual, a professor of clinical psychology with an area of interest in ASD. The speaker used PowerPoint presentations to supplement lecture materials. Information about facilitated communication and other discounted treatments, shown in the alternative treatment condition, was supplied by a recording of Frontline: Prisoners of Silence. Videotapes were the same length in both conditions.

Measures

Parent-Teacher Responsibility Questionnaire (PTRQ; Kuncie & Doepke, 2001).

This measure was developed to assess general beliefs about parent-teacher collaboration. Sample items included “Helping the child learn social skills” and “Initiating home-school communication.” Participants rated 14 such tasks on a seven-point scale, placing primary responsibility for each task on the teacher (1) or the parent (7). Middle ratings indicated shared responsibility for teachers and parents, thereby indirectly demonstrating positive attitudes toward collaboration. Before running analyses, items were recoded. Final scores of zero, or close to zero, indicated that the participant emphasized shared parent-teacher responsibility, and ratings closer to three indicated that the participant perceived either the teacher or the parent as being more responsible.

Autism Survey (Stone, 1987; Helps, Newsom-Davis, & Callias, 1999). This instrument is composed of 15 statements about the cognitive, emotional, descriptive, and educational aspects of ASD (e.g., “Autism is a developmental disorder,” “Children with

autism need to be directed explicitly to what they are expected to do in the classroom.”). Participants indicated the degree to which they agreed with each statement on a six-point likert scale. Select items were recoded such that correct answers received scores of six and incorrect answers received scores of one. The measure was used in this study to assess the effectiveness of the intervention in increasing participants’ knowledge about ASD.

Confidence Thermometer Scale. This measure evaluated the ability of the intervention to increase comfort, competence, and confidence in working with the parents of children with ASD. Three items were adapted from a questionnaire developed by Morris and Taylor (1997): “How confident are you that you can conduct a conference with a parent of a child with ASD,” “How knowledgeable are you about the elements of an effective conference or interview with parents of children with ASD,” and “How comfortable are you with the process of developing positive relationships with parents of children with ASD.” Five additional items were written for this study. These statements were rated on a 100-point thermometer scale (e.g., Haddock, Zanna, & Esses, 1993), with higher ratings designating higher agreement with the statements.

Procedure

The study followed an experimental design in which participants were randomly assigned to one of two conditions: the experimental Collaboration Training condition or the alternative treatment Autism Information condition. In each condition, participants attended a video-based seminar lasting for two hours. The material presented in the first hour was identical across conditions, and included the characteristics of ASD,

implications for educational intervention, and a basic rationale for parent-teacher collaboration.

The second hour differed across conditions. Participants in the Autism Information condition viewed a video about facilitated communication and other discounted treatments, but they did not receive specific instruction on working with parents. In contrast, participants in the Collaboration Training condition were taught how to use a structured parent-teacher discussion guide. That is, participants learned how to interview parents with regard to ten areas critical to the education of children with ASD: likes and interests, receptive and expressive communication, social behavior, leisure and recreation skills, routines and repetitive behaviors, sensory preferences and reactions, movement and motor skills, daily living and job skills, academic strengths and weaknesses, and challenging behaviors and emotions. During Collaboration Training, participants were asked to role-play with each other as practice for a parent-teacher conference.

Data collection for all participants occurred immediately before and after the intervention. Prior to viewing the first lecture video, participants completed a packet of questionnaires to gauge initial attitudes toward collaboration, knowledge about ASD, and confidence with regard to working with parents. After viewing the second video, participants completed the same measures a second time so that their responses could be compared.

Results

Research Design and Analyses

We measured three dependent variables in this study: attitudes toward parent-teacher collaboration, knowledge about autism, and confidence with regard to working with parents. Each was assessed separately using a 2(time) x 2(condition) analysis of variance. Time served as a within-subjects factor because each participant completed measures before and after the intervention. Condition was a between-groups factor because it divided the sample into two subgroups: the Autism Information intervention and the Collaboration Training intervention. Table 2 displays group means and standard deviations for each dependent variable. Post-hoc analyses revealed no significant difference between conditions on any of these three variables at pre-test.

Attitudes toward Parent-Teacher Collaboration

This variable was assessed with the Parent-Teacher Responsibility Questionnaire, on which scores closer to zero indicated a belief in shared responsibility and scores closer to three indicated a belief that either parents or teachers should have greater responsibility.

A significant within-subjects effect supported our first hypothesis, $F(1,28) = 12.18, p = .002$. In other words, all participants indicated that responsibility should be shared more equally between teachers and parents after the intervention ($M = .63, SD = .32$) than they did before the intervention ($M = .83, SD = .33$). No significant interaction effect was found, but post-hoc analyses revealed that the decrease was significant only for the experimental condition, and not the control condition. Figure 1 displays the mean scores for each condition at both pre- and post-test.

Knowledge about Autism

This variable was assessed with the Autism Survey, on which correct answers received scores of six and incorrect answers received scores of one. The first of our hypotheses was supported for this variable (see Figure 2). That is, we found a significant within-subjects effect, $F(1,28) = 35.16, p < .001$; all participants scored higher on the Autism Survey after training ($M = 4.21, SD = .38$) than they did before training ($M = 3.73, SD = .40$). There was a significant interaction effect, $F(1,28) = 4.66, p < .05$, demonstrating that participants in the Autism Information condition learned more about autism across the pre- and post-assessments ($M = 3.67$ to $M = 4.32$) than did participants in the Collaboration Training condition ($M = 3.80$ to $M = 4.10$). Post-hoc analyses, however, did not indicate a significant difference between conditions at either pre- or post-test.

Confidence in Working with Parents

Comfort, competence, and confidence with regard to working with parents of children with ASD were assessed as a whole with the Confidence Thermometer Scale, on which scores closer to 100 indicated greater levels of confidence.

Both hypotheses were supported for this variable (see Figure 3). First, there was a significant within-subjects effect, $F(1,28) = 83.94, p < .001$. That is, all participants scored higher on the Confidence Scale after training ($M = 60.08, SD = 19.56$) than they did before training ($M = 28.68, SD = 18.40$). As hypothesized, the ANOVA yielded a significant interaction effect, $F(1,28) = 4.70, p < .05$, with the confidence of participants in the Collaboration Training condition increasing more between pre- and post-assessments ($M = 31.54$ to $M = 70.34$) than that of participants in the Autism Information

condition ($M = 25.84$ to $M = 35.84$). Post-hoc analyses revealed a significant difference between groups after the intervention, but not before.

Discussion

The purpose of this study was to examine the role of teacher training in parent-teacher collaboration. We evaluated an intervention for prospective teachers designed to enhance three variables: attitudes toward collaboration, knowledge about ASD, and self-confidence in the ability to work with parents of children with ASD. We hypothesized that participants would report significant increases in each variable after training. We also hypothesized that participants who received specific training in the use of a parent-teacher interview would report greater increases across time than participants who received information about discounted treatments of ASD.

Our first hypothesis was supported for all three variables. That we found a significant within-subjects effect for each variable seems to support the premise that training can increase pre-professional attitudes toward collaboration, knowledge about ASD, and comfort, competence, and confidence levels with regard to working with parents of children with ASD.

Our second hypothesis was supported for only one variable. Specific training in the semi-structured parent-teacher interview appeared to be especially effective in helping participants to feel more confident in their abilities to collaborate with parents. However, for knowledge about ASD, results opposed our hypothesis. We had thought that participants in the Collaboration Training condition would report more knowledge of autism because they received information on ten critical areas of child functioning. Instead, participants in the alternative treatment condition learned more about autism

across time than did participants in the experimental condition. This may have been because the video on facilitated communication covered more of the items on the Autism Survey. In any case, these results suggest to us that simply knowing about autism is not enough to help educators feel confident in their abilities to work with parents of children with ASD. Both types of training are needed.

While effective collaborative relationships are valuable in boosting academic success for all students, they are crucial to the achievement of students with autism spectrum disorders. In spite of this, many teachers have a limited understanding of autism and how to collaborate with families of children with ASD. Given this need, the present study is important because it demonstrates that training in these areas is useful. That is, we found significant increases in three tested variables. Since our intervention was relatively time-efficient and rather inexpensive, similar training programs could easily be implemented in existing teacher preparatory courses. Since participants in this study elected to devote time outside of class with minimal compensation in order to receive training, we can see that there is an interest in learning this material.

A major strength of the present study lies in its experimental design where participants were randomly assigned to either an experimental condition or an alternative treatment condition. This is fairly conservative when compared to a traditional experimental vs. no treatment design. With a larger sample, the third “no treatment” group could be included in future research. In this condition, participants could receive general information on educating children with disabilities, including, but not limited to, ASD.

In this study, we chose to examine what we thought were the three most important dependent variables. First, we assessed attitudes toward collaboration because it is more likely that teachers will reach out to parents if they hold a positive attitude toward collaboration than if they hold a negative one. Second, we assessed knowledge about autism because research has demonstrated that teachers will be less likely to reach out to parents if they hold different beliefs about the disorder (e.g., Helps, Newsom-Davis, & Callias, 1999). Third, we assessed confidence levels with regard to working with parents because research has demonstrated that teachers who are more confident in their ability to collaborate with parents are more likely to do so (e.g., Hoover-Dempsey, Bassler, & Brissie, 1987). However, it might be valuable to study other dependent variables. Thus, future researchers may choose to include the usefulness of the training program to teachers' future careers or the willingness of teachers to have a child with ASD in their classrooms.

One limitation of this study is the presence of a self-selection bias. That is, all participants elected to attend training. There may be a difference between the type of education student that would choose to participate and one who would choose not to participate. Thus, our sample may not be representative of the entire population of education students. To eliminate bias, future studies should be done where students are required to attend training through undergraduate courses. Students could then opt to participate in the research study in place of a similar course assignment.

A second limitation of this study is that we have not identified any long-term or lasting effects of the intervention. We do not have evidence that participants will actually use their attitudes, knowledge, and confidence to collaborate with parents when they

become teachers. Thus, future research should follow-up on participants after they have entered the workforce to determine whether training made an impact on their practices.

Another major limitation of the study is its reliance on self-report data. This is a problem for three reasons. First, participants may not have been completely honest when they completed the measures. Second, there may have been an expectancy bias. That is, participants might have “guessed” the results that researchers were expecting and responded accordingly. Finally, the data does not support the idea that participants will be able to apply their new knowledge and training to collaborate with parents. We plan to address this limitation in an ongoing study. Participants in both training conditions will conduct a 45-minute, video-recorded discussion with a parent of a child with ASD. Approximately 15 parents will be recruited from the local autism community and by word of mouth. Each parent will complete at least two discussions, serving as the interviewee for one teacher from each training condition. Participants and parents will separately complete a packet of measures immediately after the discussion to evaluate discussion quality. Should parents evaluate participants in the experimental condition higher than those in the alternative treatment condition, we will have objective data in support of the semi-structured interview training.

We believe that this study has important implications for the education of children with ASD. Since the training program appears to be effective, we would hope that with repeated experiences over time, teachers and parents of children with ASD would be able to work more effectively with each other. This, in turn, is likely to improve the education of children with ASD. Our long-term goal is not to “cure” autism, but to help maximize the potential for child success in school and in life.

Table 1

Demographic Data: Number (and Percent) of Participants in Each Condition

Variable	Collaboration Training	AutismInformation
Ethnicity		
Caucasian	13 (43)	13 (43)
African American	1 (3)	0 (0)
Hispanic	1 (3)	0 (0)
Other	0 (0)	0 (0)
Gender		
Male	3 (10)	0 (0)
Female	12 (40)	15 (50)
Year in School		
Freshman	7 (23)	6 (20)
Sophomore	0 (0)	1 (3)
Junior	4 (13)	5 (17)
Senior	4 (13)	3 (10)
Academic Major		
Elementary Education	10 (33)	7 (23)
Secondary Education	5 (17)	5 (17)
Music Education	0 (0)	1 (3)
Other	0 (0)	1 (3)

Table 2

Means and Standard Deviations for Dependent Measures across Two Groups and Two Time Periods

<u>Variable</u>	<u>Collaboration Training</u>		<u>Autism Information</u>	
	<u>Pre</u>	<u>Post</u>	<u>Pre</u>	<u>Post</u>
Parent-Teacher Responsibility				
Mean	.87	.61	.79	.63
Standard Deviation	.28	.26	.37	.38
Autism Knowledge				
Mean	3.80	4.10	3.67	4.32
Standard Deviation	.45	.29	.35	.44
Confidence Level				
Mean	31.51	70.34	25.84	49.82
Standard Deviation	20.09	17.56	16.75	16.07

Figure 1: Parent vs. Teacher Responsibility by Group

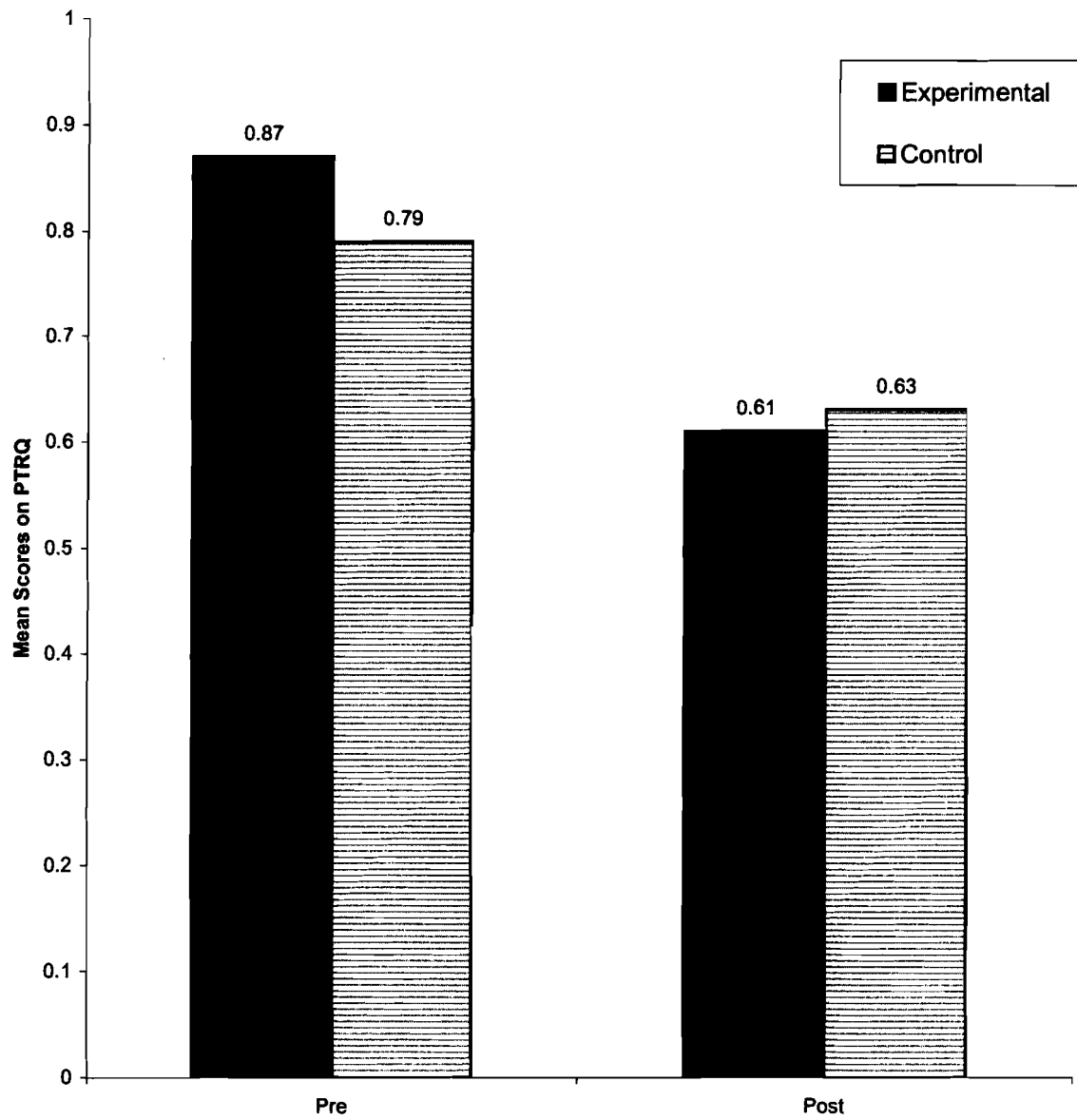


Figure 2: Knowledge about Autism by Group

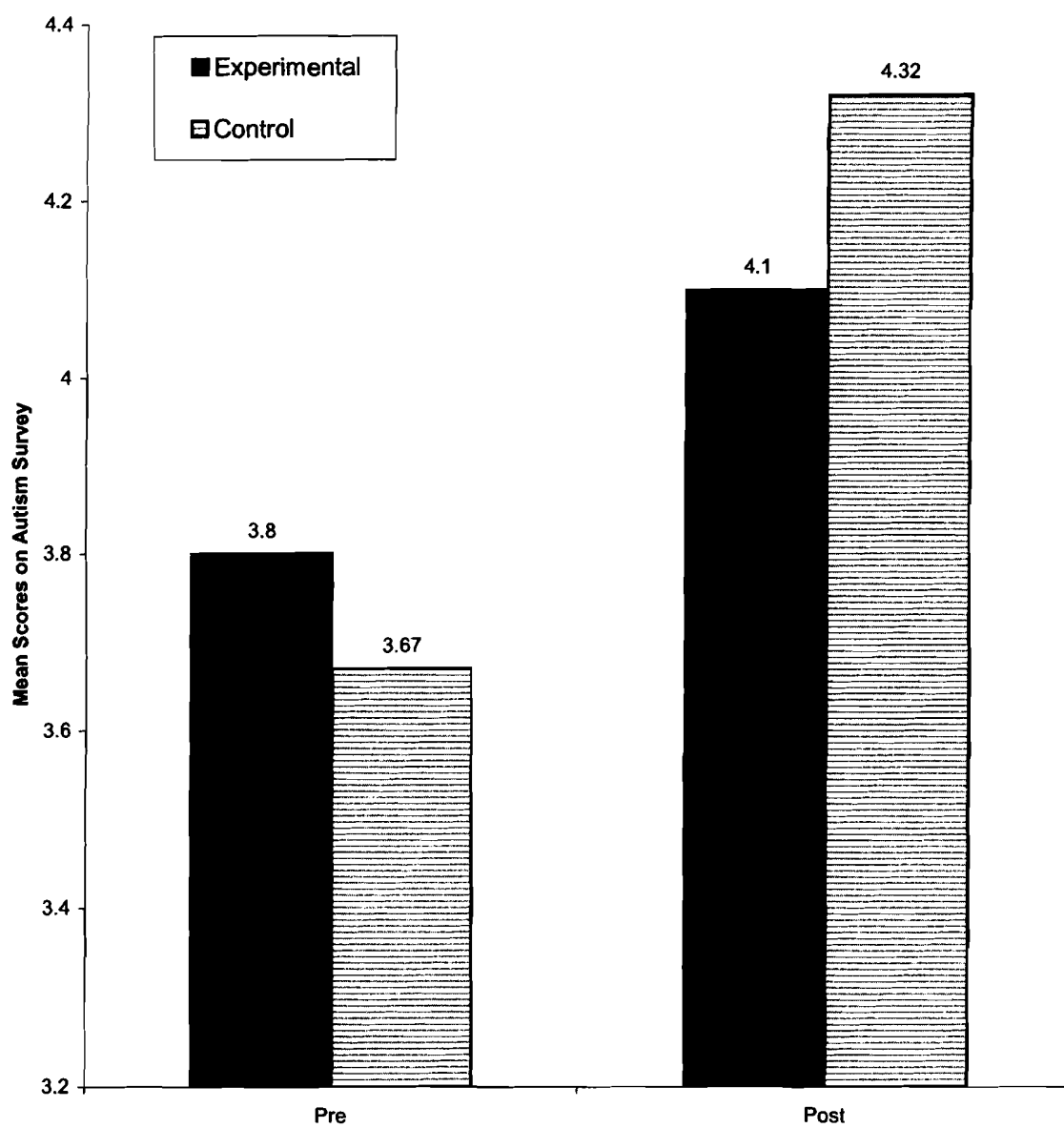
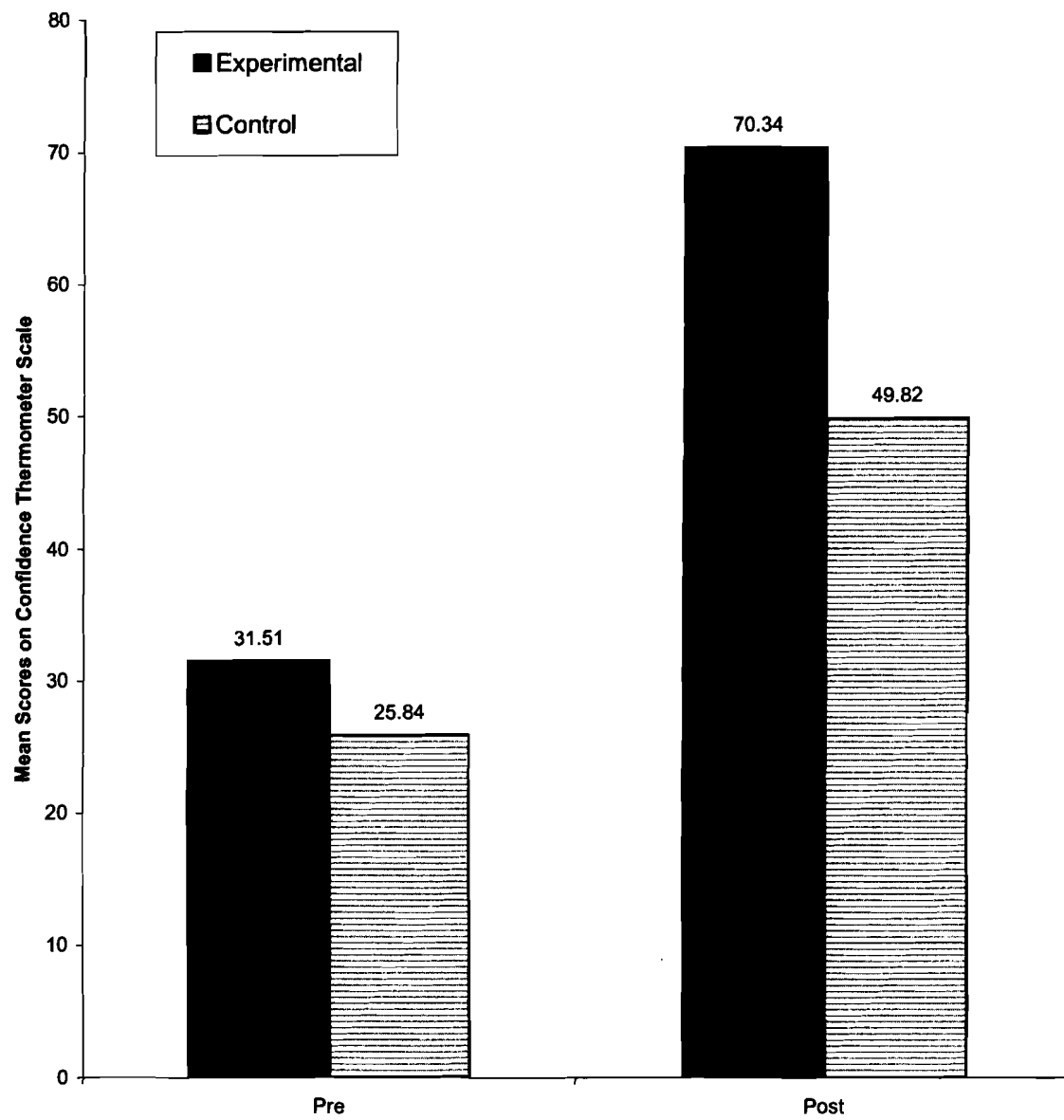


Figure 3: Confidence Levels by Group



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