

Annotated Bibliography: Parent Training in ASD

(as of 5-31-10)

Anan, R. M., Warner, L. J., McGillivray, J. E., Chong, I. M., & Hines, S. J. (2009).

Group Intensive Family Training (GIFT) for preschoolers with autism spectrum disorders. *Behavioral Interventions*, 23 (3), 165-180.

DISCUSS: Group Intensive Family Training (GIFT) used a preschool-like dynamic, where parents and their children with autism came in to a 3 hour per day, 5 days per week program to learn skills to increase their child's motivation. Such advances were made using clear instructions, successive conditional discriminations, and self-management skills. Seventy-two parent-child dyads entered the program, between the ages of 2.1 and 5.8 years. Participants had staggered entry into the program so that parents who had been there longer could assist newcomers. Upon entry, an informal assessment was done to allow parents to prioritize skill acquisition for the development of a treatment protocol. Sessions included one-on-one training, as well as various groupings of the children into peer groups to work on peer communication. Parents were encouraged to employ their skills at home for a minimum of five hours per week, a sample of which was videotaped and reviewed for constructive feedback. Using the Mullen Scales of Early Learning and the Vineland Adaptive Behavior Scales, results showed an average developmental gain of 8.2 and 5.7 months (respectively). All findings were statistically significant.

INTERPRET: This program is very multifaceted and intense. It is geared towards working on the priorities of each parent, so each child's plan is individualized accordingly. Having facilitators work with parents and children on a daily basis is sure to emphasize the skills learned and situations in which to employ them. Having parents or children with autism working within the same facility, particularly in a staggered way, will allow for connections and support systems to form as one parent helps another through the process. The children are sure to benefit in this group setting that is designed to assist them in engaging in peer interactions.

EVALUATE: While this program had numerous benefits, it is very time consuming for parents and children. While parents may use the amount of time that the program takes as a family medical leave benefit, such a leave remains unpaid. Therefore, this may make it unattainable for people from low-income backgrounds. The program is expensive to implement; many start-up costs would be necessary for a program of this magnitude. Additionally, while parents from rural areas stated that this program was beneficial because of a lack of assistance in their areas, they had to stay away from home for the duration of the program in order to be trained. This may not be feasible for all people from rural areas, and thus may not be practical. The age-range of the children is mildly concerning, as well. For children who are trying to learn adaptive social skills, the best match may be to group children to peers who are close in age. The dynamic between a two-year-old and a five-year-old may be very different than between two five-year-olds.

Becker-Cottrill, B., McFarland, J., & Anderson, V. (2003). A model of positive behavioral support for individuals with autism and their families: The family focus process. *Focus on Autism and Other Developmental Disabilities*, 18(2), 113-123.

DISCUSS: This study was designed to assess child outcomes when parents were involved in a child's training regimen. The model used was called Positive Behavioral Support (PBS), which is focused on making changes that are meaningful to enhance quality of life. Another theme in PBS is to use adaptive behavioral skills that target children will be able to generalize and use across other behaviors. This study had the addition of being focused on the family and the family's needs. Parents were trained in PBS during a series of lectures (focused on teaching alternative, replacement, and coping skills). Teams, who meet monthly, center their goals on the dreams that the parents have for their child. Parents are an integral part of the process, as working within family life is an important part of PBS. A case study was used to test the effectiveness of this strategy. The child in the research was male, ages 4 years and 8 months, who had a diagnosis of autism (no other known medical conditions). The family was followed for one year prior to initial training. Results indicated considerable improvements in independence, ability to follow directions, and a decrease in outbursts.

INTERPRET: Many people who were on the child's team noted that they found that there were far fewer and less severe challenging behaviors displayed. In the case of this child, his mother was able to stop going to his classroom every day, a prior requirement due to the level of challenge he provided. The significance of the results are best understood when all-around quality of life is considered: for this mother, it meant fewer late nights at her full-time job. For the teachers, it meant less disruption. For the child with autism, it meant that he was learning the skills he needed to help family and school life run more smoothly, as well as to become more integrated into his classroom.

EVALUATE: This research used a case study, with results relying on a single participant's outcomes. While using PBS, including the family in the training and implementation of the program, and using teams all seem to have working well in this case, additional research would need to be done in order to truly inform practice. An additional caveat is that a program of this nature, which relies heavily on a sizeable team, may be difficult to implement in rural areas.

Brookman-Fraze, L., & Koegel, R.L. (2004). Using Parent/clinician partnerships in parent education programs for children with autism. *Journal of Positive Behavior Interventions*, 6, 195-213.

DISCUSS: The purpose of this study was to extend current research on parent education programs by assessing parent education techniques that incorporate partnership concepts suggested in the parent empowerment and ecocultural literature. Two parent education conditions, both utilizing Pivotal Response Training (PRT) techniques, were compared. The researchers examined what effect a parent/clinician partnership model had on observed parent stress and confidence, observed child affect, and child responding and engagement versus a clinician directed model. A repeated reversal design was used, shifting between the two conditions for each parent, depending on the session. Three boys with autism and their mothers participated in this study; they had similar profiles for daily living skills and communication functioning. Training took place in the home; one family also attended sessions at a university research clinic setting. For the two conditions, the parent educator incorporated subtle differences into wording (i.e., encouraging input from the parents, or just placing demands on them). Results indicated that during the P (participation) condition, parent stress decreased and confidence remained similar or increased, and children's positive affect increased. Higher levels of engagement and responding occurred for children in the CD (clinician-directed) condition.

INTERPRET: This study has implications for professional practice; parents need to be treated as valuable

members of the educational team that have unique expertise. It makes sense that parents would exhibit less stress consistently when they felt as if the interventions were suggestions, and not demands. The study suggests that *how* a technique is presented is very important to its level of success. Success with parent training in PRT has been reported in previous studies; however, they did not distinguish between whether the intervention addressed parent input or was clinician directed.

EVALUATE: The relatively small sample size was a limiting factor, but not one that would inhibit use of the information. Further empirical research should be done in this area to strengthen the research.

Crockett, J. L., Fleming, R. K., Doepke, K. J., & Stevens, J. S. (2007). Parent training: Acquisition and generalization of discrete trials teaching skills with parents of children with autism. *Research in Developmental Disabilities, 28(1)*, 23-36.

DISCUSS: The purpose of this study was to analyze the extent to which training parents in the use of discreet trial training (DTT) procedures, with training applied sequentially to one or more child skills, was sufficient to produce generalization of correct parent teaching to untrained child skills. Since the use of two or more stimulus exemplars has been shown to have a positive effect on generalization, the authors incorporated this strategy. The design used was a variation of a multiple baseline across child skills design. The sequence of the child skills to which training was applied was not predetermined, but based on parent responses during the pre-assessment. Participants were 2, four year old boys and their mothers. Both were diagnosed with ASD; one child also had a learning impairment. Both children had deficits in communication and language skills. Parents and children participated in 6-9, two hour training sessions, once a week. These consisted of trainer led instruction and independent practice. During independent practice parents worked on four different child skills, each skill having 25 trials and taking about 10 minutes to complete. Major findings of the study were that parents could learn DTT procedures and generalize across similar and dissimilar behaviors within two to four sessions.

INTERPRET: Although parents were able to generalize the skills learned during intervention, only a slight improvement in skill acquisition for both children was reported. Parents also noticed a small improvement in the child's behavior. Had the intervention phase lasted longer there may have been more substantial gains.

EVALUATE: More naturalistic vs. more behaviorist approaches may be better suited for generalization of skills, particularly when considering parent training. The small sample size and relatively short intervention time is problematic; prior research discussed in the article showed that many of these techniques take up to two years for children to acquire successfully. It also is difficult to assign one 'correct' response for a particular skill, especially when it comes to things like choosing and ball play (two skill areas the children worked on in this study).

Drew, A., Baird, G., Baron-Cohen, S., Cox, A., Slonims, V., Wheelwright, S., Swettenham, J., Berry, B., & Charman, T. (2002). A pilot randomised control trial of a parent training intervention for pre-school children with autism: Preliminary findings and methodological challenges. *European Child & Adolescent Psychiatry, 11(6)*, 266-272.

DISCUSS: This study was a randomized control trial comparing a parent training intervention with a group that received local services only. Participants were very young children who had not yet been diagnosed with

autism. Screening tools were used to identify possible instances of autism. The Social-Pragmatic Joint Attention Focused Parent Training Programme was used, which consisted of advice to parents to promote compliance and behavioral management (using reinforcers), and teaching the child alternative behaviors by occupying the child with joint action routines. The program also supported holistic language learning, and incorporating skills into an everyday routine. The local services group used speech and language therapists, physical therapists, and occupational therapists. Twenty-four participants were included in this study; 12 were in each group. Results indicated that children in the parent training group understood marginally more words and were slightly more likely to move from non-verbal to having a small number of words. At one-year follow-up, the parent training group had made marginal increases over the local services group in language development.

INTERPRET: This study identified children who were yet undiagnosed and put them into randomized groups. A study of this sort is highly unusual in this field. While there were no large effects between the two groups, early identification of autism is a significant benefit.

EVALUATE: While the early identification procedure was used so that none of the children would have already been receiving local services, there is benefit to early intervention services. Perhaps the benefits of these services lead to the best outcomes with the addition of parent training, but since the groups were exclusively receiving one or the other, the additive effects were not studied. Another possibility is that low effect sizes were found in the parent training groups because parents had not had much time to work through feelings of having a child diagnosed with autism, which may have affected their ability to be effective interventionists.

Hume, K., Bellini, S., & Pratt, C. (2005). The usage and perceived outcomes of early intervention and early childhood programs for young children with autism spectrum disorder. *Topics in Early Childhood Special Education, 25*(4), 195-207.

DISCUSS: This study was designed to examine the services and number of hours in services for children with ASD, perceived impact of the services on developmental growth, the link between developmental growth and services utilized, and the link between developmental growth and method of service implementation. 195 parents of 2- to 8-year-old children with autism, PDD, or Asperger's were included in this study. Questionnaires assessed needs, parents' perceptions of their child's autism development, and family satisfaction. Families indicated that Discrete Trial Training was used more hours per week than any other program. 78.8% of respondents strongly agreed that parent training was effective and had contributed to the child's growth (18.2% agreed, 3.6% disagreed), making it the most highly rated of all intervention strategies.

INTERPRET: This study stresses the importance of incorporating family training into a child with autism's developmental plan. Parents who had received training reported happier interactions, more positive communication, and lower stress. Family training was the most highly rated intervention strategy, highlighting the importance of both helping parents feel more competent in strategies involving their children, thereby helping children work through the learning process more effectively.

EVALUATE: This study did not compare which types of parent training programs were most effective. Particularly for those families who disagreed when asked if parent training was effective, it should have been noted if it was a particularly unpopular program that was driving the effect. This study was not implementing

an intervention and therefore, all participants likely had very different experiences. While it is safe to say that parent training programs are an effective strategy for parents of children with autism, it remains unknown if one program is more effective than another.

Ingersoll, B., & Dvortcsak, A. (2006). Including parent training in the early childhood special education curriculum for children with autism spectrum disorders. *Topics in Early Childhood Special Education, 26*(3), 179-187.

DISCUSS: The purpose of this study was to explore the effectiveness of a pilot parent training program for families of preschool children with ASD designed for use in public ECSE classrooms. Nine families from several regions throughout Oregon participated in the study, implemented by the Oregon Statewide Regional Program Autism Training Sites (RPATS). The researchers assessed parent knowledge, parent satisfaction and teacher satisfaction with the intervention. Parents underwent intensive training; the curriculum focused on naturalistic intervention techniques to increase social communication skills during daily activities and routines. Specifically, the authors used direct and indirect teaching strategies, which have been shown to be effective for teaching social communication skills to children with autism in a parent training context. The parent training took place over nine weeks and consisted of six group sessions and three individual sessions; the authors, parents, and classroom teachers were all involved. Teacher training also occurred concurrently with parent training, so in the future those teachers would be able to teach the techniques to parents. Major findings were that parent knowledge increased significantly on pre- versus post-test measures. Parents and teachers also reported high levels of satisfaction with the program.

INTERPRET: Including parent training in special education programs makes it more accessible to the public at large. Teaching special education teachers the strategies that parents are learning will not only reinforce the skills by having them be used in the classroom, but will also make it more likely that parents of children with autism are able to receive training themselves. Incorporating parent training into the special education curriculum may make it be more likely to be accessed by parents who may otherwise not take advantage of it, simply because it seems like it is a part of the curriculum. Parent knowledge of the techniques taught increased throughout intervention; both parents and teachers were very positive about participating in the training. The trainings also included evidence-based interventions including Pivotal Response Training (PRT) and Floortime. The state department of education supported the program giving the teachers 'in-service' days where they were not responsible for instruction and could learn the techniques during normal school hours with the parents.

EVALUATE: The greatest advantage and caveat in this research is the use of teachers. Special education teachers are already a strained resource, and having them become the trainers of future parents further restricts them. Additionally, the outcome measure used in this study were imprecise, as parents were asked to rate the improvements of their children and no information from outside sources was considered. A more in depth study is needed to examine the effect that the interventions had on specific students skills as well as a comparison of baseline, intervention and maintenance data. The parents' ability to generalize the information learned requires further investigation, but there were limitations in completing home visits because of a lack of external resources.

Ingersoll, B., & Gergans, S. (2007). The effect of a parent implemented imitation intervention on spontaneous imitation skills in young children with autism. *Research in*

DISCUSS: The purpose of this study was to assess whether parents could be taught to implement intervention strategies with their child with autism, and if this could be used to increase spontaneous object and gesture imitation in their children. The authors used a single-subject multiple baseline design across participants and behaviors for one child. The participants were three children with ASD and their mothers. After a 2, 4 or 6 week baseline (assigned randomly), parents participated in 10 weeks of parent training. These consisted of 30-40 minute weekly sessions with the parent, child, and therapist. As the intervention progressed, training was faded and more time was spent giving direct feedback to the parent. The training was carried out in three phases: Phase I focused on increasing social reciprocity, Phase II taught object imitation strategies and was introduced after one week. One parent-child dyad participated in Phase III, which taught strategies for teaching gesture imitation concurrently with object imitation after four weeks of instruction. Generalization probes were also conducted; two times during baseline, once at the end of training, and once as a follow-up assessment one month after the intervention had ended. All the parents that participated in the study increased their use of trained intervention strategies, including contingent imitation and linguistic mapping. All three parents also successfully generalized these strategies to the home environment. All three children increased their level of spontaneous object imitation, and generalized these skills to the home environment. The one parent-child team given gesture imitation training increased the use of gesture imitation, but the child was unable to exhibit these skills during the one month follow up assessment.

INTERPRET: This study is important because it provides support for parent interventions that target non-verbal social communication skills. Imitation is a critical skill for social engagement, especially at a young age. The parents in this study reported positive changes in social engagement, play skills, and communication. The fact that both groups were able to generalize into the home environment is compelling.

EVALUATE: The study's results must be interpreted with caution with such a small sample size and only one family participated in Phase III, which limits conclusions regarding the increase in gesture imitation. Findings were also not statistically significance, so future research is needed.

Koegel, R.L., & Bimbela, A. (1996). Collateral effects of parent training on family interactions. *Journal of Autism and Developmental Disabilities, 26*(3), 347-360.

DISCUSS: The purpose of this study was to assess whether parents' style of interaction during unstructured home activities might be differentially affected by two different types of parent training interventions. Two groups of families were randomly assigned to each of the parent training conditions. The participants were 17 children and their families, all with similar demographics. All children were in the preschool to early elementary range and represented both boys and girls. Most parents fell into the middle class; however, the full range of socio-economic status was represented. One group was trained in Pivotal Response Training (PRT) designed to increase motivation and responsivity to multiple cues. The other group was trained in conducting treatment on individual target behaviors (ITB). The results suggested that different parent training approaches to treatment may result in different expressive affect associated with parent-child interaction patterns, even though affect is not targeted in either parent training paradigm. The ITB condition did not appear to have any significant or notable impact on the parents' interactional style between pre-training and post-training measures. Parents in the PRT condition appeared to be happier, more interested, exhibited lower levels of stress, and engaged in a more pleasant type of communication interaction with their child.

INTERPRET: This study was very valuable in that it compared two different methods of parent training and the effects intervention had on parent-child interactions. It is important for researchers to distinguish between effective and ineffective parent training interventions. It would seem that based on the results of this study, a social pragmatic approach (PRT) is more appropriate for improving the affect of parents and children than a strictly behavioral approach.

EVALUATE: Further research is needed to examine the impact of different types of parent training interventions. A control group would be useful, as well as matching the children on behavior, cognitive ability, and severity of autism.

Koegel, R. L., Symon, J. B., & Kern Koegel, L. (2002). Parent education for families of children with autism living in geographically distant areas. *Journal of Positive Behavior Interventions*, 4(2), 88-103.

DISCUSS: This study employed Pivotal Response Training (PRT; used to improve motivation through child choice, reinforcing attempts, task variation, and natural consequences) for families in rural areas who otherwise lacked easy access to intervention opportunities. Families participated in week-long training sessions on the methods of PRT. Five families participated in this research. All children had received a diagnosis of ASD. Children ranged in age from 3 years, 10 months to 5 years, 7 months. Data was collected at baseline, during the intervention, and at follow-up. Follow-ups ranged from 4 months to 11 months post-training. Parents were given a manual (*How to Teach Pivotal Behaviors to Children with Autism: A Training Manual*, R.L. Koegel et al., 1989), which reinforced six motivational techniques: Clear, uninterrupted instructions; varied instructions and maintenance tasks to reinforce learned behaviors; child input in toy selection; immediate rewards; reinforcement related to response; and reinforcement given for attempted response. Results indicated that parents increased use of PR techniques following the program. Parents were rated as having more positive affect during interactions with their children, and children were rated as increasing expressive verbalizations.

INTERPRET: This study showed that an intense, week-long training session can provide sufficient information to enable parents to implement a behavioral protocol at home. This is especially important for the target population, which was families from rural areas, where resources for children with autism are scarce. While training was intensive, parents were given a manual as a refresher to the skills taught once the training program had ended. This is a useful feature for parents from rural areas, to keep them on top of their skills while reducing the need to travel to meet with an intervention expert.

EVALUATE: One significant caveat of this study is that families had to travel out-of-state to receive the training. All families included in the study were from middle- to upper-class families where the expense of travel was feasible. This may not be feasible for a family with less financial resources or other family responsibilities.

McConachie, H., Randal, V., Hammal, D., & Couteur, A.L. (2005). A controlled trial of a training course for parents of children with suspected autism spectrum disorder. *Journal of Pediatrics* 147, p. 335-340).

DISCUSS: The purpose of this study was to evaluate a training course for parents, *More Than Words*, and to help parents encourage communication in their young child with suspected autism spectrum disorder. There

were 51 preschool aged children (between 24 and 48 months) who participated in the study as well as 49 mothers and 2 fathers. Weekly sessions and periodic home visits with videotape review characterized the parent training intervention. The Autism Diagnostic Observation Schedule and the Autism Diagnostic Interview were administered. Measures were taken at the beginning of the course and then 7 months later. There was wait list of children and their primary caregivers who served as a control group. A checklist of words assessment was used with parents to determine the vocabulary their children understood and produced. The parents were rated on a *Joy and Fun Assessment Scale* through their videotaped interaction; they also completed three other questionnaires regarding behavior.

INTERPRET: Significant differences were not found between those children in the control group and those children whose parents were receiving intervention. Time 2 (which occurred 7 months after Time 1), did show, however, a significant increase in vocabulary. The intervention group had roughly 50 words more than the control group at Time 2.

EVALUATE: The important findings in this study were that parents can be effective facilitators of communication development. Results also indicated that vocabulary improvement occurred over time for those children whose parents participated in the More Than Words training. It will be important to replicate the study to ensure the comparison groups were similar and that observed results are maintained.

Nietfeld, J. P., Kaiser, A., & Hancock, T. B. (2000). The effects of parent-implemented enhanced milieu teaching on the social communication of children who have autism. *Early Education and Development, 11*(4), 423-446.

DISCUSS: The purpose of this study was to examine the effects of parent-implemented enhanced milieu teaching (EMT) strategies on the language performance of preschool children with autism. More specifically, the authors focused on the ability of parents to effectively learn the strategies, and changes in child language targets, social communication skills, and language development. The research also focused on parents' and children's generalization and maintenance of skills. Participants were six children and their mothers. Children were between two and five years of age, and had been diagnosed with autism, Aspergers or PDD. All of the children were boys, and had a six month delay in expressive language and a vocabulary of ten or more words. The study design was a single-subject, multiple baseline design used across parent-child dyads. Dyads were assigned randomly and equally to 5, 6, or 7 week baselines. Intervention took place in a university based clinic setting two times a week for 45 minutes; there were 24 sessions total. Training consisted of providing new information and strategies, guided practice with the parent, child, and parent educator, and feedback and planning for the next session. Follow-up assessments were conducted once a month for six months after intervention to assess maintenance. Nine in home assessments (3 at the end of baseline, 3 at the end of intervention, 3 at the end of six months) were conducted to assess generalization and maintenance of skills. The major findings of this study were that parents can learn EMT procedures, and generalize and maintain their use across setting and time. Children demonstrated positive changes in social communication across settings and measures.

INTERPRET: A value of this study was that it was a successful contemporary behaviorist approach; utilizing naturalistic and behavioral strategies. This is important as the integrity of data collection from behaviorist strategies is maintained, while also teaching a child in a more natural environment. The fact that the children and parents were able to generalize and maintain skills over a period of six months is compelling evidence that this type of intervention can have a great effect on children with ASD. When parent training strategies are used in correspondence with participation in a regular day program, opportunities for natural

teaching moments by parents are greatly increased. This can have a very positive effect on the social functioning of children with ASD.

EVALUATE: There were a few limitations to this study; mainly that it did not have a control group and used a relatively small sample size. Participants were not well matched on severity of ASD; future research should study the population that benefits the most from this type of intervention. The results indicate that parents are capable of being taught intervention strategies to be incorporated naturally at the home setting.

Ozonoff, S., & Cathcart, K. (1998). Effectiveness of a home program intervention for young children with autism. *Journal of Autism and Developmental Disabilities*, 28(1), 25-32.

DISCUSS: The purpose of this program was to evaluate the effectiveness of the TEACCH home intervention model, a model in which parents are taught to serve as their child's 'co-therapist', implementing treatment in the home setting. Although the effectiveness had been evaluated in previous studies, the authors focused on strengthening previous research using a control group, and matching children based on age, intellectual and communicative functioning, and severity of autism to determine what subgroups benefit the most from this type of treatment. They also wanted to determine the potential effects of using different teaching techniques in home and school settings, and examined the impact of home programs on participants' cognitive functioning. The study included 22 children ranging in age from 2-6 years and their families. The children were assigned to two groups of 11: control and treatment. Parents received training in TEACCH home based program services on average once a week, for 10 weeks. The researchers also conducted home visits, and one visit to the day treatment center for each child. Children in the control group on average showed significant gains in imitation, fine motor skills, gross motor skills, cognitive performance, and total PEP-R score. Although they did not show significant gains in the perception and cognitive verbal subtests, they still performed on average two to three times better than those in the control group. The researchers also found that children with higher initial abilities demonstrated more improvement; suggesting that mild autism and good language skills predicted better progress in this home intervention.

INTERPRET: This study served to further strengthen previous research on the TEACCH model. The results suggest that this intervention may be better suited to families of children with less severe forms of autism. On average, children made developmental gains of 9.6 months during a 4-month intervention; this is compelling information that only furthers the need for more availability of parent training for families of children with ASD.

EVALUATE: Children were not assigned randomly to the groups, which may limit the generalizability of the results as the groups may have differed in composition. The researchers conducted all the testing, and were not blind to group assignment. No maintenance data was collected. Future research should also address the effects of other variables, such as IQ, visual-spatial ability and behavior problems.

Research Units on Pediatric Psychopharmacology Autism Network. (2007). Parent training for children with pervasive developmental disorders: A multi-site feasibility trial. *Behavioral Interventions*, 22, 179-199.

DISCUSS: This study combined pre-existing use of pharmacotherapy (in this case, Risperidone) and parent training. The parent training protocol was based on Applied Behavior Analysis (ABA). Sessions included

clinician-taught curriculum using scripts, video vignettes showing target parent behaviors, worksheets, and handouts. Home visits were conducted by the clinical to evaluate the success of implementation of the parent training skills; clinicians offered further guidance as needed. Participants included 17 parent-child pairs, with children's ages ranging from 4 to 13. Diagnoses varied between autism, Asperger's, and PDD-NOS. All children in the study were on stable doses of Risperidone. Results indicated that parents had high levels of satisfaction with the program. Child outcomes showed significant global improvements in 53% of the sample, and minimal improvement in 30%. There were significant increases in age equivalency, as rated through the Vineland Daily Living Skills. Children displayed a 19.2% increase in adaptive skills. There was also a significant decrease in parenting stress.

INTERPRET: This was a multi-site research study, which employed a very structured, easily repeatable training procedure. The fact that the protocol was able to be reproduced in several sites is a good indication of its reliability.

EVALUATE: All children in this study were on a medication that was meant to manage their behavioral noncompliance. It is difficult to generalize to populations who are not on this medication. Additionally, the scripts used in the parent training protocol may not be age-appropriate for all children in the study. Having a strict script is not always a useful tool when all children are different.

Seung, H.K., Ashwell, S., Elder, J.H., & Valcante, G. (2006). Verbal communication outcomes in children with autism after in-home father training. *Journal of Intellectual Disability Research*, 50(2), 139-150.

DISCUSS: The study explored the effectiveness of father training on social interaction and if fathers and mothers differ in their learning of social reciprocity. The study also explored whether children with ASD made gains in verbal communication outcomes after their parents received in-home training. The design was a retrospective analysis that analyzed 15 minute videotaped play sessions with both parents and the child with autism. Eight children with mild to moderate autism and their families participated in the study. All of the children were between four and seven years of age; there were six boys and two girls. Each father underwent training in two techniques designed to promote social reciprocity: expectant waiting and imitating with animation (exaggerated affect). Major findings showed that parent training designed to promote expectant waiting and imitation with animation was efficacious as measured by the ratio of parent to child utterances produced during play as well as the number of verbal imitations of the parents. It was also found that fathers and mothers showed no differences in their ability to learn the skills, and communication outcomes of the children showed increases in one-word utterances and variety of different words produced. Statistically however, the children's verbal communication outcomes were not different.

INTERPRET: Although there was no statistical effect on the children's verbal communication outcomes, the authors attribute this to the large variability in the data. The research was clear, though, that fathers play an extremely important role in a child's life, and many positive gains are associated with their involvement.

EVALUATE: The most important limitation to this study is the fact that six of the eight children were undergoing speech language intervention at the time of the study. The article did not mention the intensity of this intervention, but increases in one-word utterances and variety of speech could be linked to those services. The fact that this was a retrospective analysis of previously collected data is a limitation; the authors address this by explaining that the study was an exploratory examination for a more rigorously designed study in the future. The authors also suggest a possible sampling bias in that the parents who allowed the researchers to conduct a retrospective analysis may be more invested in the process, and thus more proficient with the skills

than families that did not respond to requests to conduct the secondary analysis.

Siller, M., & Sigman, M. (2002). The Behaviors of parents of children with autism predict the subsequent development of their children's communication. *Journal of Autism and Developmental Disabilities, 32*(2), 77-89.

DISCUSS: This study investigated whether caregivers of children with autism attempt to adopt the child's focus of attention and toy engagement in an equal manner as parents of typically developing and developmentally delayed children who are at a similar stage of language development. The authors' hypothesis was that caregivers of children with autism who spend a higher proportion of play engagement targeting objects that are already the focus of the child's attention, trying to maintain the child's ongoing activity, will have children with superior communication skills at later ages. This was a longitudinal study that took place across over 16 years, with a sample size of 51 children and their mothers. Of the 51, 25 had a diagnosis of autism, 18 were developmentally delayed, and 18 were typically developing. No significant differences were found in ANOVAs conducted based on language age, mental age, or years of maternal education. Participants were recruited and given a battery of tests to determine developmental abilities and language skills. The mothers were also filmed for ten minute segments playing with their children, and the authors used an intensive computer based coding system to measure the parent and child behaviors. Parent behaviors measured were indicating behaviors and verbal behaviors. Verbal behaviors were split into two categories: demanding and undemanding. Children behaviors observed were when a child stopped or started gaze at an object. A follow-up assessment was conducted three more times: after one year, after 10 years, and after 16 years to determine language skills. There were two major findings to the study; 1) caregivers of children with autism synchronize their behaviors to their children's attention and activities as much as caregivers of children with developmental delay or typical development; 2) caregivers of children with autism who showed higher levels of synchronization during initial play interactions had children who developed superior language skills over a period of 1, 10, and 16 years compared with children of caregivers who showed lower levels of synchronization initially.

INTERPRET: This was a controversial topic as the authors were suggesting that a particular parenting style can inhibit or encourage language development in their children; however, it was an important longitudinal study. The study results raised important points about the relationship between joint attention and language development. On average, parents whose interactions were better synchronized to their child's had children with superior language skills at 1, 10 and 16 years, across groups. This calls for more research into this area, as well as targeted interventions and parent trainings that teach the parent to be responsive and flexible to the needs of their child.

EVALUATE: The problem with a longitudinal study is the changing group and the number of other factors that may have contributed to language development over the time period. The authors offered some speculations about the advances in language development that were observed, which should be interpreted with caution noting the potential of other factors influencing the changes observed.

Singh, N. N., Lancioni, G. E., Winton, A. S. W., Fisher, B. C., Wahler, R. G., McAleavey, K., Singh, J., & Sabaawi, M. (2006). Mindful parenting decreases aggression, noncompliance, and self-injury in children with autism. *Journal of Emotional and Behavioral Disorders, 14*(3), 169-177.

DISCUSS: Children with autism are more likely than typically developing children to exhibit problematic externalizing behaviors, such as aggression, noncompliance, and self-injury. This study used mindfulness techniques to help reduce parental stress and improve mental health, to determine if that would, in turn, reduce problematic child behaviors. Mindfulness is described as being clear and calm, as well as viewing

each moment in a non-judgmental way. A mindful person may be more likely to consider alternative perceptions and responses to a situation that may not have been previously considered. This study included three mother-child dyads; children were between the ages of 4 and 6 and had received a prior ASD diagnosis. All mothers in the study had received other parent training, and stayed home with their children full time. Target child behaviors were aggression (all three children), noncompliance (2 children), and self-injury (1 child). Mothers were trained in Mindfulness practices every 3 weeks for 12 weeks, and mothers recorded data via Palmpilot during all waking hours spent together, for a period of 52 weeks. Fathers also collected data on a separate Palmpilot. Results indicated that all three children decreased their aggression and other maladaptive behaviors when their mothers were engaging in Mindfulness techniques. By the end of the study, each child expressed few, if any, instances of aggression. Noncompliance and self-injury also showed marked decreases.

INTERPRET: Mindfulness stresses the need for a person to be unconditionally accepting and nonjudgmental. In redirecting the focus from specific problem behaviors, more general positive changes can be focused upon. The premise is that when mother and child are no longer in conflict with one another, changes are more likely to occur.

EVALUATE: All of the mothers in this study had been taught other training skills for their child, and the skill areas varied between mothers. While the results were found in spite of this variation, a more controlled study would need to be done to rule out the effects of those training sessions. Additionally, the low number of participants in a study such as this, where the idea of teaching Mindfulness to parents of children with autism is fairly new, suggests that more research is needed a results must be interpreted with caution.

Solomon, R., Necheles, J., Ferch, C., & Bruckman, D. (2007). Pilot study of a parent training program for young children with autism: The PLAY Project Home Consultation program. *Autism, 11*(3), 205-224.

DISCUSS: This study used the PLAY (Play and Language for Autistic Youngsters) Project Home Consultation program to teach parents the skills they needed to become their child with autism's teacher. The framework was developed using the developmental, individualized, and relationship-oriented (DIR) model, which focuses on social interaction and functional communication. Sixty-eight families participated in this study. A research assistant attended the homes of each family once per month to teach the skills necessary for the intensive play-based interactions. Parents were also given a PLAY Project training manual and attended a 1-day workshop. Parents were asked to attempt to engage their child in a minimum of 15 hours per week using the skills taught. Using the Functional Emotional Assessment Scale as a measure of child's functional development, results indicated a statistically significant increase in scores over 12 months. Functional developmental levels were assessed by clinicians; 66% of participants demonstrated either "good" or "very good" clinical progress over the study period.

INTERPRET: This program is a cost-effect way of teaching parents the skills they need to provide an increase in functional development for the child with autism. The program ran with a high number of participants because each family was only visited once monthly. Additionally, the monthly visits were supplemented with a written manual and a full day workshop, both of which are cost efficient ways of teaching parents. This would also be a good program to implement in rural areas, as the facilitator would only need to travel distances once per month, and parents may become less reliant on outside services as they

begin to manage their child's intervention primarily in the home.

EVALUATE: The number of hours that parents were asked to use the skills that were taught may have been a lot in the beginning when the skills were very new and families had only had one visit from the research team. As parents became more comfortable with the skills they learned, it would get easier to implement the skills, but a more intensive program may be required to initiate intervention with parents. This may have contributed to why not all children made significant increases throughout the length of the study; the researchers reported that there were some parents who were unable to implement the full number of hours specified to use the skills taught.

Symon, J. B. (2005). Expanding interventions for children with autism: Parents as trainers. *Journal of Positive Behavior Interventions*, 7(3), 159-173.

DISCUSS: This study trained parents using Pivotal Response Training (PRT), and expanded upon what the parents learned by having the parents then train other parents of children with autism in the skills that they had learned. Programs such as Parent-to-Parent, where families are matched, with one family expressing need for assistance and another family willing to act as supportive mentor, have been beneficial to many families, and this study expanded upon the mentor role to a training role. Three families were included in the initial, week-long training program. Ages of the children were 2 years and 10 months, 3 years and 2 months, and 5 years and 4 months. The parent educator began the first day by modeling the use of Pivotal Response techniques, and gradually included the parent in the techniques. The educator provided immediate feedback to the parent during the intervention. Primary caregivers (all mothers, in this case) were then asked to teach the skills they learned to a second significant caregiver in the child's life. Videotaped sessions were used to evaluate the primary caregiver, significant caregiver, and child improvements. Results indicated that primary caregivers successfully taught the skills of PRT to the significant caregiver. The gains displayed in verbal communication behaviors of the children in the study transferred to significant caregivers. Each child showed marked changes in appropriate behaviors and communication skills.

INTERPRET: This study is unique in that it identifies parents who are in need of assistance, trains them to a level of high competence and success with their own child, and then asks them to bring their knowledge and experience back to their own community. For families who are unable to afford a week-long stay at a training center, they are able to use a trained community parent to teach skills that the family may then incorporate into their child's intervention. Additionally, children who have more than one person in the home who is trained in PRT receives more intervention hours than they would if only one parent were trained.

EVALUATE: One caveat of this study is that primary caregivers were teaching the skills to other caregivers within the home. Simply because of the time spent together, caregivers who live together are likely to pick up on techniques used more quickly than another parent of a child with autism would (assuming the trainer and trainee were only able to spend a few hours a week together). The results must take into consideration that a practical amount of time that a person would be able to spend in training may be less than optimal for this program. However, if an untrained parent were able to spend many hours in the home of the trained parent and was able to observe the skills of the trained parent in action, similar outcomes may be achieved.

Wang, S. (2008). Effects of a parent training program on the interactive skills of parents of children with autism in china. *Journal of Policy and Practice in Intellectual Disabilities*, 5(2), 96-104.

DISCUSS: The purpose of this study was to implement and evaluate the impact of a comprehensive parent-training program for teaching children with autism in the People's Republic of China. Specifically, this study examined the effects of parent training on parents' interactive skills. The study was designed with randomized assignment to treatment and control groups. Twenty-seven children from Northeastern China with an average age of five and a half years and one parent (in the majority of cases, the mother) participated in the study; 15 were in the treatment group and 12 in the control group. Both groups were comparable in terms of demographics, CARS and PEP-R scores. The intervention was based largely around Applied Behavior Analysis (ABA) principles, but did include one session that focused on naturalistic intervention strategies. Training of the parent took place over four weeks; with four sessions, once a week, for four hours. A home visit was also conducted by the researcher once a week for one to two hours to observe and assist parents. All in-home observations were videotaped, and parent interactive skills were coded using the Maternal Behavior Rating Scale (MBRS) in the areas of responsiveness, affect, achievement orientation, and directiveness. The intervention produced meaningful differences in affect and responsiveness in parents in the treatment group; they scored significantly higher than parents in the control group. No significant differences were found in achievement orientation or directiveness between the two groups.

INTERPRET: Although this study did not research the effects that parent interactions have on the response of the child, the research is still important. Other research has found a correlation between parent responsiveness and many different factors of development for children with ASD, including joint attention, language development, and social skills. It makes sense that an increase in affect and responsiveness would lessen the multiple stressors usually found in families of children with autism, and help parents to build a stronger relationship with their child.

EVALUATE: Although the author used methods that are Western based, they have been proven to be effective in developed countries. Results indicate that this parent training intervention may have benefitted from extended implementation beyond the identified 4 weeks. Also, the researcher only used two, five-minute videotapes to determine the results, suggesting much of the obtained data was not considered.