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EVALUATION OF AN OUTPATIENT PARENT TRAINING SERVICE FOR CHILDREN WITH AUTISM SPECTRUM DISORDERS AND THEIR FAMILIES

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Western Michigan University, 2007

Autism spectrum disorders have a substantial impact on the lives of families and can result in a variety of enrichments to the family environment as well as certain specific stressors (Hecimovic & Gregory, 2005; Tidmarsh & Volkmar, 2003). One service that has proven effective for treatment of individuals with autism spectrum disorders as well as improvement in family dynamics is parent training (Schreibman, 1988). The current study examined 46 individual client files from an outpatient parent-training clinic serving children with autism spectrum disorders. Parents were taught to implement interventions for skill acquisition with their children using a behavioral skills training model (BST). The most common skill targets identified collaboratively by parents and clinicians were social skills targets, communication targets, and incontinence. Multiple intervention strategies were recommended by clinicians and learned by parents including BST, chaining, token economy, discrete trial teaching techniques, intensive toilet training procedures, PECS training, mand training techniques, natural language paradigm (NLP). Parents were able to demonstrate mastery across the variety of instructional strategies and demonstrated high rates of procedural integrity across all interventions.

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INTRODUCTION

Autism Spectrum Disorders (ASDs) refer to those disorders that involve a substantial and pervasive social impairment and are subsumed under the DSM-IV heading of Pervasive Developmental Disorders. They consist of autistic disorder, Asperger's disorder, and pervasive developmental disorder not otherwise specified (PDD-NOS) (American Psychiatric Association [APA], 2000; Volkmar & Klin, 2005) which are considered representative of a spectrum of dysfunction along similar variables. Two other PDDs, Childhood Disintegrative Disorder and Rett's Syndrome are generally not considered part of the spectrum (Volkmar & Klin). The ASDs are each characterized by deficits that impact all spheres of an individual's life ranging from social contexts, to academic contexts, or occupational contexts (Tidmarsh & Volkmar, 2003). While each of the disorders consists of similarities that led to the grouping of the disorders along a spectrum they also consist of characteristics and diagnostic criteria that set them apart from one another.

Overview of ASDs

Sometimes referred to as "classical autism," autism is the most clearly defined of the ASDs (Tidmarsh & Volkmar, 2003). Autism is characterized by marked impairments in three domains: communication, social interactions, and restricted and repetitive behaviors (Tidmarsh & Volkmar). Communication deficits may consist of delay or lack of spoken communication without any compensation for communication (e.g., signs, gestures), impaired conversation ability, stereotyped language use, and delays or lack of imaginative play (Volkmar & Klin, 2005). Social impairments are evident in grossly delayed peer interactions, lack of reciprocal social skills, lack of shared enjoyment and social-emotional reciprocity (Volkmar & Klin). Restricted and

repetitive behaviors refer to: preoccupations that are abnormal in intensity or focus, adherence to routines or rituals, stereotyped motor movements, persistent preoccupation with parts (Volkmar & Klin).

Asperger's disorder (AD) was first identified by Hans Asperger in 1944 when he described a group of individuals who exhibited social peculiarities and social isolation despite having average cognitive and language abilities (Myles & Simpson, 2002). Asperger's disorder was added to the DSM-IV in 1994 (Myles & Simpson). Asperger's disorder is generally apparent at a later stage of development and presents as substantial social impairment and restricted interests in spite of language and cognitive strengths (Tidmarsh & Volkmar, 2003). Difficulties are often evident at a later age as children transition to a school setting. Once in this setting, children are exposed to more social contexts that set them apart from their peers. Many individuals with AD desire to engage socially with others, but have difficulty understanding social norms such as eye contact, use of gestures, proximity to others, difficulty understanding feelings and thoughts of others, and conversational cues (Myles & Simpson). Some suggest that AD is best thought of as a milder form of autism (Volkmar & Klin, 2005) while others suggest that AD is quite different due to the strong desire for social contact experienced by these individuals, in spite of a lack of understanding of appropriate social rules and norms and awareness of the social differences between themselves and their peers (Myles & Simpson).

Pervasive disorder not otherwise specified (PDD-NOS) or "atypical autism" is a sub-threshold diagnostic category and is also sometimes considered a milder form of autism (Tidmarsh & Volkmar, 2003; Volkmar & Klin, 2005). Individuals diagnosed with PDD-NOS do not meet criteria for autism or Asperger's Disorder for a variety of

reasons such as a later age of onset, atypical symptoms, or less severe presentation of symptoms (APA, 2000). The diagnostic category of PDD-NOS is open to interpretation, therefore leading to increased variability across individuals with this diagnosis (Tidmarsh & Volkmar). Although this diagnostic category receives considerable clinical use, few studies have examined PDD-NOS at this point, and this category is just now beginning to be recognized and addressed in the research (Volkmar & Klin).

Other common features of ASDs that are not explicit in diagnostic criteria are uneven cognitive performance profiles (e.g., learning disabilities interspersed with exceptional splinter skills), under performance in the area of adaptive behavior compared to intellectual functioning, and frequent occurrence of problematic and disruptive behaviors (Myles & Simpson, 2002; Volkmar & Klin, 2005). Children with ASDs can have difficulty generalizing skills from one setting to another; therefore, supports in all settings are needed to encourage skill growth (Harris, Wolchik, & Weitz, 1981).

Discussions of the incidence and prevalence rates of ASDs, specifically autism, have flourished in recent years (Fombonne, 2005). Incidence refers to the number of new cases occurring over a specified period of time, while prevalence deals with the proportion of individuals in a given population who suffer from a disorder at the specific time of assessment (Fombonne). The prevalence of a given disorder can increase without the incidence increasing due to changes in method of diagnosing (Fombonne). The most current data report that the prevalence rates of parent-reported rates of autism are 5.5 per 1,000 children, with a male to female ratio of 3.7:1 (Centers for Disease Control [CDC], 2006) and distribution across all socioeconomic statuses.

In a review of the prevalence literature and studies, Fombonne (2005) found an increasing trend in the prevalence rates of ASDs. The author suggests that the numbers and studies indicate that although prevalence appears to have gone up over the past years, this change most likely represents changes in the concepts, definitions, service availability, and awareness of ASDs in both the general public as well as professional realm (Fombonne, 2005). Regardless of the cause of the increase, the increase in prevalence creates an increasing need for a variety of service providers to fit with individuals' and families' needs (Koegel, Symons, & Koegel, 2002).

Impact on the Family

A child with a developmental disability, including an ASD, typically has a substantial impact on the lives of the other members of the family, including parents, siblings, and grandparents (Tidmarsh & Volkmar, 2003). There can be substantial stressors for the family associated with the need for specialized care along with the everyday life difficulties associated with an ASD. The individual with ASD often needs a complex set of supports including specialized behavioral, medical, and educational services that require extensive management and efforts on the part of the families (Elder, Valcante, Yarandi, White, & Elder, 2005). Several common groups of stressors have been identified for parents of children with autism despite differing family and child variables (Dumas, Wolf, Fisman, & Culligan, 1991; Koegel et al., 1992; Sanders & Morgan, 1997). The most commonly identified areas of impact are emotional, family financial and other resources, and lifelong stressors about the future of the affected child.

The first substantial stressor that can create a negative emotional impact is the initial diagnosis of autism, Asperger's, or PDD-NOS (Hecimovic & Gregory, 2005;

Marcus et al., 2005). Parents may experience stress and frustration due to the time and energy involved in pursuing and obtaining an accurate diagnosis, followed by a myriad of emotions including relief, sadness, and fear about the child's and family's future (Marcus et al.). Following the initial stressors of the diagnosis, emotional stressors may include but are not limited to the care of the child, new parenting roles which are unique to parenting a child with an ASD, and difficulties in interacting with the child due to communication and social abnormalities (Dumas et al., 1991; Marcus et al.; Seung, Ashwell, Elder, & Valcante, 2006). Isolation from social surroundings can also occur (Hecimovic & Gregory) as parents attempt to avoid social outings and situations that might occasion problem behaviors or reveal their child's deficits (e.g., unresponsiveness, communication deficits) (Koegel, Koegel, & Schreibman, 1991; Koegel et al., 1992; Marcus et al.; Plienis, Robbins, & Dunlap, 1988).

Family resources can become another source of stress in families with children with autism as interventions and therapies demand substantial monetary and time investment. The costs can be direct (e.g., time and money spent on delivery of services) or indirect (e.g., moving to obtain services, emotional energy) (Marcus et al., 2005). The task of finding and providing appropriate intervention services can be highly stressful for families (Seung et al., 2006). Determining which treatments to select can be taxing for a family, especially if they are unfamiliar with the concept of empirically supported treatments (Marcus et al.). Shopping for services is encouraged and advocated by many service providers, but service shopping can create emotional stressors in the face of urgency to obtain early intervention as soon as possible (Hecimovic & Gregory, 2005). There may be additional stress for families with children diagnosed with AD as there are no clear definitive answers about what

treatments will be effective for building appropriate behaviors due to the complex nature of the social deficits for individuals with this diagnosis (Myles & Simpson, 2002). Once interventions have been initiated, managing time and professional relationships across therapies can become a stressor as well with the average family of a child with autism engaged with 7 interventions simultaneously (Marcus et al.).

The caretaking role of parents who have a child with autism can be an ongoing one that does not end with childhood or adolescence (Koegel et al., 1991). Concerns are common regarding what the lifelong status of a child diagnosed with autism will be. Thus lifespan care is another commonly reported area of stress for parents of children with autism (Schreibman & Koegel, 1996). Parents are often concerned for the future of the child after parents are unable to care for them, especially with regards to independent functioning and quality of life for the individual (Koegel et al., 1992). There is a need for transition planning, estate and financial planning for future of child, all of which can be stressors for a family (Hecimovic & Gregory, 2005).

While there are many stressors in the life of a family with a child diagnosed with ASDs, research has shown that these stressors can be somewhat alleviated by means of parent training (Elder et al., 2005; Schreibman & Koegel, 1996, 2005; Schreibman, 1983; Seung et al., 2006; Tonge, et al., 2006). Parent training appears to provide several benefits to family life in general (Schreibman). Parent training has been reported to lead to an improved quality of life for families by decreasing parental stress (Schreibman & Koegel). This effect could be due to increased parent optimism about their ability to influence their child's development and learning (Schreibman & Koegel; Seung et al.). Elder et al. (2005) found that fathers reported increased feelings of parental competence and marital satisfaction following training. Koegel et al. (2002) reported that parents

appeared happier, less stressed, and more interested during interactions with their children following parent training. Tonge et al. (2006) found that parents reported less anxiety, insomnia, somatic symptoms, and depression following parent training. Parent training can also lead to a greater commitment to providing treatment to their children (Schreibman).

Parent training in instructional strategies or behavioral management strategies is one of the most effective and cost-efficient methods of treatment for children with ASDs (Robbins & Dunlap, 1992). Many benefits come out of training parents versus relying solely on other organizations to provide services for these families. First, parents are the primary person in their child's home and they can provide a 24-hour environment in which their child can learn (Schriebman, 1988). Second, parents are a constant in their child's life as opposed to therapists, tutors, consultants, or teachers who have a relatively brief relationship with the child. Parents will be present to support the child throughout his or her life, so providing them with skills to help teach their children is of paramount importance (McCabe & Huiping, 2001).

Another important benefit and motivation behind parent training is the positive effect on maintenance and generalization of skills (Lerman, Swiezy, Perkins-Parks, & Roane, 2000). Parents can help to prevent decline of skills learned in other settings by being trained on methods to continue those behaviors in the home environment (Smith, Groen, & Wynn, 2000). They can also work with their children naturalistically on a variety of skills throughout the day to build these skills. The strategies parents have learned for teaching one skill may generalize over to teaching other skills (Crockett, Fleming, Doepke, & Stevens, 2007). Finally, parent training provides an option for treatment for families living in areas where treatment would not otherwise be available

(e.g., families based in rural areas, families in cities where treatments are not abundant) (Koegel et al., 2002; Schreibman, 1988).

A substantial literature illustrates that when parents of children with ASDs participate in parent training, there are benefits to both the parents and their children (Charlop & Trasowech, 1991; Crockett et al., 2007; Laski, Charlop, & Schreibman, 1988; Seung et al., 2006). While no "best practice" for parent training has been specifically identified, several effective methods have been used to train parents to increase their child's appropriate skills. The majority of parent training studies have included mothers and their children as primary participants, but some studies have explicitly targeted fathers and demonstrated that fathers are equally able to learn techniques through similar parent training procedures (Charlop & Trasowech; Elder et al., 2006; Hunyen, Lutzker, Bigelow, Touchette, & Campbell, 1996; Neef, 1995). Many other studies have focused on training parents to minimize problem behavior but the focus of this review will be training in acquisition strategies.

Parent Training in Instructional Strategies

Procedures for parent training. The majority of studies examining parent training of acquisition skills for children with autism use similar procedures to train the parents though the content taught to the parents varies. These training procedures typically include the following components: manuals and/or instructions, demonstrations or modeling, role-play between a parent and therapist, and implementation/practice with their child with feedback from the trainer (Charlop & Trasowech, 1991; Hunyen et al., 1996; Koegel et al., 2002). This combination of instructions, modeling, rehearsal and feedback is referred to as Behavioral Skills Training (BST; Miltenberger, 2003). Although some studies have used only a subset of

these strategies (e.g., eliminating the rehearsal or role-play phase of training) to good effect (e.g., Ingersoll & Gergans, 2007; Laski et al., 1988), the majority of studies employ the full BST package suggesting that this methodology is appropriate for future research on parent training.

Harris et al. (1981) provide an illustrative example of BST procedures in a study in which parents were provided with reading materials that were then covered in lecture and discussions. Lectures were followed by demonstrations, videos, modeling, and feedback on parent performance to teach the skills to parents during the sessions. Each family also had a home visit every 2 weeks for application in the home of the techniques learned in the clinic during which, staff would model, observe the parents implementing the techniques, give suggestions and/or feedback, and answer any questions the parents had. Similarly, in a study by Crockett et al. (2007), parent training consisted of a 20-minute lecture on the skills, demonstrations via video models of both correct and incorrect use of procedures, role-play with a trainer with feedback, and practice and feedback while implementing procedures with their child.

Duration and intensity of training. Though the instructional components of parent training studies are generally quite similar, a number of other intervention aspects have varied. Training has been implemented over a brief period of time (e.g., multiple visits over 1-2 weeks) with good success (Charlop & Trasowech, 1991; Laski et al., 1988) while other studies employ a more extended model with a longer total span of intervention (e.g., visits over a 10-12 week period) (Harris et al., 1981; Smith et al., 2000). Both models have proven effective but the more extended model typically is used to target general parenting and behavior management strategies using a pre-set

curriculum while shorter term trainings typically target specific skills using an individualized approach (Crockett et al., 2007; Harris et al.).

Another variant is implementation of very intensive training over a short period of time. For example, Koegel et al. (2002) trained families for 25 hours within a one-week period and found an increase in parents' use of the techniques learned, an increase in the communication skills of their children, and an increase in positive affect of parents during interactions with their children. However, this level of intensity of training has rarely been studied experimentally.

Targets of parent training. Parents have been successfully taught to implement a variety of different behavioral instructional strategies. Some studies target general strategies or "models" of intervention that can be applied to a variety of different child skills and settings often without a particular child target in mind, which we will refer to as the general model (Crockett et al., 2007; Harris et al., 1981; Koegel et al., 2002; Neef, 1995; Tonge et al., 2006). The rationale for general model training is that children with ASDs have many behaviors that require treatment simultaneously; so targeting just one behavior can be impractical and lengthy (Koegel et al., 1991). As an example of general skill training, Harris et al. used a workshop model to train parents in basic behavior modification principles and skills to target communication. The topics included reinforcement, fading, prompting, shaping, generalization, and maintenance (Harris et al.). The children made gains in prespeech and speech skills and families reported progress in their use of the skills to help their children acquire speech; however some reported difficulty integrating the skills into their everyday lives. Follow-up surveys 4-to-7 years after training revealed that ratings for the workshops were high but formal behavior modification procedures were no longer being used by more than half

of the respondents (Harris, 1987). Parents reported that they were still using some procedures to manage problem behavior and that the mother's use of the procedures was generally correlated with an increased likelihood that the father would also use the procedures (Harris).

Koegel et al. (2002) reported on another general model for parent training referred to as pivotal response training (PRT). Parents of children with autism were trained to use a naturalistic teaching approach to interact with their children (Koegel & Schreibman, 1996). Pivotal skills that are generally targeted by parents during PRT training are motivation (i.e., willingness to interact), responsivity to multiple cues, and self-management skills. Koegel et al. evaluated an intensive week-long, center-based parent training education program teaching PRT procedures to increase social communication. Parents increased their use of PRT techniques, verbal communication of the target child increased, and there was an increase in positive affect of parents during interactions with their children (Koegel et al.). Follow-up probes were conducted for the families and varied from several months to one year, and both parent and child skills maintained at follow-up (Koegel et al.).

In contrast to training on general techniques, other studies have targeted parent acquisition of specific training targets used to change certain child behaviors (Charlop & Trasowech, 1991; Ingersoll & Gergans, 2007; Laski et al., 1988). For example, Charlop and Trasowech trained parents to use a graduated time-delay procedure in the natural environment (i.e., home and/or school) to increase spontaneous speech in their children. Parents readily mastered the implementation skills and the children quickly acquired and maintained spontaneous speech, although generalization of these skills across settings was limited. In another example, Ingersoll and Gergans taught parents to use

reciprocal imitation training (RIT) to increase spontaneous imitation skills in their children during play. Reciprocal imitation training consists of contingent imitation, linguistic mapping, and imitation training through modeling, prompting and reinforcement techniques. All parents were successfully taught to use RIT to target object imitation and one parent also targeted gesture imitation. All children's imitation behaviors increased following training. Social validity was assessed with regards to acceptance of the procedures and was very high for mothers participating in this study (Ingersoll & Gergans). These studies demonstrate the ease with which many parents can acquire specific instructional techniques and social validity assessments suggest that parents are pleased with this approach (Charlop & Trasowech; Ingersoll & Gergans; Koegel et al., 2002; Smith et al., 2000).

Training setting. Parent training has been conducted in the home of the family (Drew et al., 2002; Elder et al., 2005) as well as in a clinic setting for outpatient therapy (Crockett et al., 2007; Koegel et al., 2002). In-home training has been purported to improve maintenance because training occurs in the natural environment (Charlop & Trasowech, 1991), however, both methods have proven effective in increasing both parent skills and child behaviors (Crockett et al.). Drew et al. conducted a randomized control study evaluating the effects of parent training on social communication skills versus local services (i.e., community control). Parents received three hours of consultative services every six weeks in their homes, as well as phone consultations for support and advice throughout training (Drew et al.). Skills were taught in the context of everyday activities to promote generalization and maintenance. Families who received parent training services reported higher communication levels in their children than those who received local services only.

The effectiveness of outpatient services has also been demonstrated by increases in parent skills and appropriate child behaviors (Crockett et al., 2007; Koegel et al., 2002). Crockett et al. conducted training in an out-patient/research setting and taught parents discrete trial teaching techniques. Parents were able to learn the skills and generalize these skills across child behaviors after training on a few exemplars (Crockett, et al.). Another important aspect of outpatient services is that they create a feasible option for families for whom in-home training services are not available. Koegel et al. conducted training for families from distant locations in an outpatient clinic. Families demonstrated an increase in techniques learned during training and child communication skills increased, and both parent and child skills maintained at follow-up probes up to one-year (Koegel et al.). These studies suggest that interaction skills learned through an outpatient service setting can lead to generalization and maintenance of skills, which is important to the implementation of techniques within the home for parents.

In summary, parent training in instructional skills has proven to be an effective method of treatment for children with ASDs and their families that is cost-effective and that can help to reduce stress for families. In general, the training techniques employed have included instructions, modeling of the techniques by a trainer, rehearsal or role-play of the skills by the parent, and feedback given by the trainers to build the skills within the parents (Charlop & Trasowech, 1991; Harris et al., 1981; Ingersoll & Gergans, 2007; Laski et al., 1988; Neef, 1995). Both brief and extended protocols can be utilized for training and can lead to positive outcomes for families (Charlop & Trasowech, 1991; Harris et al.). Parents are able to learn the techniques to build skills in their children whether being taught general training techniques (Harris et al.; Koegel et

al., 2002) or specific techniques to use with a specific behavior (Charlop & Trasowech; Ingersoll & Gergans). Finally, training can be effective whether conducted in the home (Charlop & Trasowech; Seung et al, 2006) or in a clinic-based setting (Crockett et al., 2007; Koegel, et al.). Parent training presents a variety of options and can be incorporated into a variety of settings.

RATIONALE FOR THE CURRENT STUDY

Although several studies on parent training have generally demonstrated parent acquisition and child improvement, several questions remain about parent training with parents of children with ASDs. First, it is unclear from published studies whether parents sought training to address areas of great concern or whether they were recruited into ongoing protocols. Thus, it is not clear whether the skills learned targeted parents' primary concerns. Second, demographics of children, referral sources, and which parent(s)/caregiver(s) are seeking training services from an outpatient clinic have not been examined. Third, the level of specificity on acquisition of skills and integrity of implementation in studies is generally quite low with limited information about the parent/caregiver performance during training or the amount of training required for mastery. Fourth, few comparisons have been conducted between targeted acquisition strategies leaving us unable to determine if certain strategies are more challenging for parents to learn than others.

The purpose of this study was to examine individual client files from an outpatient clinic that serves children aged 2-12 with ASDs and their families using a specific model of parent training. Cases were reviewed to discern patterns in: target areas identified by parents and clinicians across families served, interventions or instructional strategies used to treat those target areas, and parents' performance during

training. The outpatient clinic examined provides parent-training services using instructions, modeling, rehearsal, and performance feedback (Miltenberger, 2003) followed by evaluation of skills with the child with ASD when possible. Parents are taught to implement skill acquisition strategies with their children to target skills deficits that are of greatest concern to them; however, the acquisition strategy could typically be used to target multiple related behavioral targets for their children. Parents and therapists collaborated to identify, prioritize, and operationally define target behaviors. The therapists then selected interventions/acquisition strategies based on the prioritized targets, the relevant research literature on teaching those skills, and the likelihood that parents could use their new skills to target other deficits (e.g., shaping can be applied to teach many skills). Parents were typically trained using BST as described above and when possible, an evaluation phase was completed following BST in which the parents implemented the intervention with their child and received performance feedback.

METHOD

Participant Variables

Forty-six cases were reviewed representing approximately two years worth of clients of a small, university-based outpatient training clinic in Michigan serving children aged 2 to 12 years who have been diagnosed with Autism, Asperger's syndrome, or PDD-NOS. Demographic information was coded in the following categories for child participants: diagnosis, age, and gender. Demographic information was coded for adult (i.e., caregiver) participants on the following categories: relationship to child and referral source.

Intervention Variables Coded

   Duration of services. Information was coded on several dimensions of the time spent in the clinic for services for each behavioral target/instructional strategy: number of sessions attended, cumulative minutes of therapy, and the overall span of service delivery measured by the start and end date of services.

   Behavioral targets. Specific behavioral targets were coded in one of several of the following categories: social skills, communication skills, daily living skills, play skills, incontinence/toileting skills, compliance, and other with specification.

   Instructional strategies. For each identified behavioral target, the instructional strategy selected to address that behavior was coded. Typical instructional strategies recommended for parents were: chaining, behavioral skills training (BST), standard intensive toilet training protocol (as described in LeBlanc, Carr, Crossett, Bennett, & Detweiler, 2005), token economy, natural language paradigm (NLP), picture exchange communication system (PECS), discrete trial teaching techniques, and mand training. There was also an option to code other instructional strategies with specific descriptions or titles.

   Training variables. Methods of parent training were coded for each instructional strategy for each case. Options included standard BST, instructions and modeling only, instruction and consultation only, full day intensive training for toileting, and an "other" designation with specific description of the methods. Time to mastery was coded by including cumulative minutes spent in instruction, modeling, and rehearsal. The evaluation phase was not included in the time to mastery as evaluation was not always included in the training sequence. The number of trials conducted was coded separately for rehearsal and evaluation (when conducted) phases.

Procedural integrity. Procedural integrity was coded by examining the raw data that were collected during rehearsal and evaluation training phases. To determine procedural integrity, the number of steps completed accurately was divided by the number of steps that were attempted and multiplied by 100. For instructional strategies that were conducted in a similar manner in four or more cases, procedural integrity or accuracy of implementation was evaluated in more detail. This only occurred with the instructional strategy of BST. Procedural data were coded for accuracy of each step within a given trial. The data are reported as the percentage accuracy for each step. Accuracy measures are reported separately for the rehearsal and evaluation phases.

Interobserver agreement (IOA). Coders recorded the percentage of training trials with IOA, and the agreement percentage. All IOA calculations were completed using a point-by-point agreement procedure (number of agreements divided by the number of agreements plus disagreements, multiplied by 100%) for each trial in which all steps needed to be scored the same to count as an agreement.

Child progress. During the evaluation phase of training, a number of the cases included data on the child's progress on a given behavioral target or skill area that was being addressed via the instructional strategy (N = 46). These data were examined to determine if child progress was evident during the evaluation phase of training with the parents. Child progress was considered an improvement if the data demonstrated one of the following: 1) at least a 10% improvement or better from baseline to evaluation or from the first half of evaluation to the second have of evaluation data collection, 2) a move through components, phases, or steps within a given skill (e.g., chaining steps, PECS phases), 3) 80-100% of a given skill was exhibited during the evaluation phase, or 4) at least a 40% success level of urinating in the toilet on the intensive toilet training

day.   Child progress was not considered an improvement if the data demonstrated one of the following: 1) less than 10% improvement from baseline to evaluation or from the first half of evaluation to the second half of evaluation, 2) less than 80% of a given skill was exhibited during the evaluation phase, 3) no evidence of the behavior occurring during the evaluation phase, or 4) less than 40% success urinating in the toilet on the intensive toilet training day.

Coding Procedure

All variables were coded by examining the individual records for each case. Behavioral targets were identified by looking through progress notes, protocols, treatment recommendations, and termination summaries. Raw data from the rehearsal and evaluation portions of training were examined for procedural integrity data. Raw data for the training portions of BST were examined and percentages for each step of training were coded to examine parents' treatment integrity for this instructional strategy to determine what areas of this training were most difficult for parents. See Appendix A for coding sheets.

Intercoder Agreement (ICA)

All variables were coded by a second independent observer agreement for 33% of cases. An agreement was defined as both independent coders having selected the same variables for those in which a selection was appropriate. An agreement for transcribed variables was defined as both independent coders having matching text. ICA was calculated for each variable using point-by-point agreement (number of agreements divided by the number of agreements plus disagreements, multiplied by 100%). Overall ICA for the different variables was: demographic variables - 96.3%, duration of services – 92.4%, behavioral target – 90.9%, instructional strategy –

86.36%, training variables – 88.8%, procedural integrity – 95.0%, and IOA – 78.6%.

ICA was 91.3% for total coding (range 78.6-100%). ICA was also calculated for the

steps within the instructional strategy that was further analyzed, BST. Of the 4 cases

that were examined, ICA was calculated on 50%, or 2 of the cases. ICA for BST cases

examined was 98.9% (range 95.6-100%).

RESULTS

Child participant diagnoses were autism (N = 35), Asperger's Disorder (N = 6),

PDD-NOS (N = 4), and diagnosis unspecified (N = 1). The average client age at

initiation of services was 6 years 9 months (81 months) with a range of 3 years 4 months

(40 months) to 12 years 5 months (149 months). Thirty-eight of the reviewed cases

were males (83%) and eight were female (17%), roughly matching the gender estimates

for the population with ASDs. The majority of the families were self-referred (N = 37)

and the remaining cases were referred by a variety of sources including pediatricians,

psychologists, school personnel, mental health supports coordinators, and family

friends. The mother participated in training in 40 of 46 (87%) cases and served as the

only participant in 20 (43%) of those instances. In 20 cases both parents participated in

training and in a few cases other individuals participated in training as well (e.g.,

siblings, classroom teacher, in-home therapist, father only, step-father, and boyfriend).

Families chose to work on a variety of targets with 26 cases receiving services for only

one target, 18 cases receiving services for two targets, and two cases receiving services

for three targets. The duration of services was on average 11 hours (range 2-30 hours)

delivered over an average span of 8.4 weeks. See Table 1 for full details.

Figure 1 depicts the aggregate data for behavioral targets or skills deficit areas

that were identified by the parents in collaboration with the professionals (e.g., graduate

therapists, supervising psychologists). This graph demonstrates a higher rate of cases identified in which the parents were interested in working on socials skills, communication skills, and urinary incontinence. Other targets that were less frequently identified were daily living skills (e.g., independent dressing skills, community safety skills), nocturnal enuresis, noncompliance, and a variety of other target skills (e.g., bowel control, attending skills, joint attention). When examining the differences between age levels and behavioral targets identified, for the younger half of the sample (ages 3 years 4 months to 8 years) toilet training skills were the most frequently identified, while for the older half of the sample (ages 8 years to 12 years 5 months) social skills were the most frequently identified.

Figure 2 depicts the aggregate data for type and frequency of the specific instructional strategies that clinic staff recommended and trained caregivers to implement. A few instructional strategies were recommended more frequently than others. Intensive toilet training strategies were recommended at the highest rate (N = 20), which matches the number of cases served in which the behavioral target identified was urinary incontinence. BST instructional strategies were the second most frequently recommended strategy (N = 9 cases) followed by token economy strategies (N = 7). Several other strategies were recommended 2-4 times: discrete trial training techniques, chaining, NLP, mand training, and PECS. There were a number of instructional strategies that were recommended one time and fell into the "other" category including: shaping with verbal feedback, live modeling, video modeling, a nocturnal enuresis treatment package, a bowel control treatment package, tactile prompting, behavioral momentum, mand-model, guided compliance, and activity schedules. This

demonstrates the wide variety of possible treatment strategies that can be recommended to address a variety of behavioral targets.

Training variables are depicted in Figures 3 and 4. Figure 3 depicts the average number of trials, collapsed across families, required to reach the established mastery criterion during the rehearsal phase for each instructional strategy as well as the average amount of time spent in training (instructions through rehearsal) for each instructional strategy that was implemented multiple times with parents. Figure 4 depicts the average number of trials and the average amount of time spent in training for those instructional strategies that were only implemented once. Parents were required to meet a specified mastery criterion prior to moving on from the rehearsal phase of training. The mastery criterion for families was set at parents performing at or above 90% correct for 2 consecutive sessions. By examining the number of trials to criterion, variability is evident across the different instructional strategies. The graph depicts the instructional strategies that were targeted more than once with an average number of trials during rehearsal and the number of trials for instructional strategies that were only conducted once. Trials conducted during the rehearsal portion of the training ranged from 4 trials (activity schedules) up to an average of 103 (discrete trial techniques), with an average of 31 trials conducted during rehearsal. There were multiple instructional strategies for which the number of trials conducted during rehearsal was quite a bit higher than the majority of the strategies. These included discrete trial techniques, PECS, and live modeling procedures. Similar variability can be seen in the time parents spent in training. The average time that was spent in training was 213.4 minutes with a range of 60 minutes for intraverbals training up to 360 minutes for live modeling. This demonstrates that different procedures may be more complicated to master than others,

or at least require more time to complete due to the number of components or steps required within a given instructional strategy.

Figure 5 depicts the overall procedural integrity during rehearsal and evaluation phases of training per instructional strategy. Procedural integrity is depicted as the percentage of steps that were implemented correctly by the parents in each of the phases across the instructional strategies. For strategies where data were available for multiple implementations, the data are averaged across those implementations. For strategies with only a single implementation, the data from the sole implementation are reported. Across all instructional strategies, parents were able to implement the steps with high procedural integrity both in the rehearsal phases and in the evaluation phases. The average percentage of steps implemented correctly was 93.3 for the rehearsal phase (range: 75.6–99.1%) and 94.2 (range: 86.7-97.9%) for the evaluation phase. This graph illustrates that parents conducted the procedures with a high degree of integrity, implementing all required steps accurately the majority of the time during both rehearsal and evaluation phases. No specific instructional strategy appears to have been more difficult than others for parents to implement. The lowest procedural integrity was observed with the receptive discrimination training strategy. This particular case involved treatment implementation by two siblings during the rehearsal and evaluation phases, which may have contributed to the somewhat lower levels of procedural integrity.

For the instructional strategy of BST, multiple implementations with very similar procedural steps were available. Thus, the percentage of trials implemented correctly is presented for each step to examine if there were any consistent areas of difficulty for parents when implementing this instructional strategy with their child.

Figure 6 depicts the steps for the various phases of parent implementation of BST (i.e., instructions, modeling, and rehearsal & feedback). This graph demonstrates that parents were able to complete the majority of the steps correctly with a few exceptions. The steps in rehearsal that the parents had the most difficulty with were: providing their children with a 'cheat sheet' of the rules they could use for a given skill that was being targeted (e.g., initiating a conversation with peers) and quizzing their child on the rules during the instructions portion and determining if their child had any questions during the modeling portion of the strategy. The graph also shows that parents were able to improve their accuracy level from rehearsal to evaluation phases in all areas except for determining if their child had any questions regarding the skills or strategies.

To determine whether or not children made progress in a given skill area or with a give behavioral target, child progress was examined in the cases where evaluation data were available. Data on child progress was available for 67.6% of the behavioral targets that were identified by parents and professionals (N = 46). Of these cases, 76% (N = 35) demonstrated an improvement based on the criterion described above.

IOA was reported on 32.4 % of the behavioral targets/instructional strategies learning trials. The average percentage of trials with IOA was 67% (range: 23-100% of trials). Average IOA for parent treatment integrity variables was 86% (range: 66-100%).

DISCUSSION

These results support previous literature which demonstrates that BST can be an effective method of training parents on skills that they can utilize to teach their children with ASDs (Charlop & Trasowech, 1991; Huynen et al., 1996; Koegel et al., 2002; Miltenberger, 2003). The cases described in this study help to further demonstrate

several specific findings for a relatively large group of parents of children with ASD. First, the demographics of the sample suggest that BST can be effective for teaching a range of families to use a wide range of strategies. Second, specific information was obtained about the duration of training required to teach caregivers to use instructional and motivational strategies for their children diagnosed with ASDs via a BST model. Third, information now exists regarding the presenting concerns of a sample of parents independent of the specific programs and targets that might be selected for individual studies.

BST was used to teach a variety of caregivers to use instructional strategies with children of various ability levels. Single parents, married parents, grandparents and siblings all participated successfully in training. Both mothers and fathers participated including a sole father who served as the primary intervention agent. Similar to the findings from the clinic, the majority of previous studies include either the mother only (Crockett et al., 2007; Hunyen et al., 1996; Ingersoll & Gergans, 2007), both parents or a combination of mothers and fathers (Charlop & Trasowech, 1991; Koegel et al., 2002; Laski et al., 1988; Neef, 1995), with a fewer number of studies focusing on fathers only (Elder, et al., 2005). Families served in the clinic had children who were diagnosed with all three ASDs, across a variety of ages, and with highly varied cognitive and functional abilities, and families ranged in socioeconomic status as evidenced by a number of families receiving a reduced rate for services (36%) demonstrating the usefulness of this type of training model for a heterogeneous group of families with children with ASDs. Previous literature on parent training with respect to ASDs has focused on children diagnosed with autism with an age range of 18 months to nine years

six months, with the majority focusing on children under the age of six (Crockett et al.; Drew et al., 2002; Harris et al., 1981; Koegel et al.).

The strategies that were taught to the parents were very specific skills, but were taught with the notion that they could be applied to several of their child's behavioral repertoires. This approach constitutes a blend between previous studies that have focused on training either a single specific skill (Charlop & Trasowech, 1991; Laski et al., 1988), or general teaching strategies (i.e., PRT) to be used across a variety of behaviors (Harris et al., 1981; Koegel et al., 2002) in that the strategy targeted was very specific but the impact on child behavior was designed to occur across multiple skill areas. This method can be beneficial in that it allows parents to choose to target the skills deficits that are most concerning to them and simultaneously teaches general strategies that they can utilize in numerous ways to build skills for their children. This adds to the literature by demonstrating that within an outpatient setting, BST as a model of parent training can be used for a variety of instructional strategies and a variety of demographic variables, thus presenting another treatment option for a population in need of services.

The version of parent training utilized in this clinic falls somewhere between the brief and extended models of parent training described earlier (Charlop & Trasowech, 1991; Smith et al., 2000). On average, parents and/or caregivers spent a total of 11 hours for the total duration of services (range: 2 - 30 hours). Total duration varied based on the number of targets identified (between one and three) and complexity of instructional strategies taught to parents. Parents were able to demonstrate their ability to implement the skills that they can use in the home in a relatively short amount of time as evidenced by time in training (i.e., time spent in instructions, modeling, and

rehearsal), which averaged 3.5 hours per instructional strategy. In over half of the cases, evaluation data are present regarding progress made by the child in the targeted skill area, and of these the majority of the cases showed child improvement while in the clinic, demonstrating that parents are able to make improvements in their children's skill level in a short amount of time.

Parents were required to implement the skills with a high degree of accuracy, and therapists often maintained phone contact with the families to ensure that problem solving could occur as the parents were implementing the procedures in the home, although data are not documented on the actual implementation in the home. Factors that led to variability in the duration of services other than complexity level of the instructional strategies that were being taught were length of time spent identifying and operationalizing behavioral targets, whether evaluation phases were conducted with the child, and whether parents requested further consultation following treatments. Similar training time has been cited by numerous other articles, suggesting that this is a typical amount of time spent in parent training (Crockett et al., 2007; Harris et al., 1981; Ingersoll & Gergans, 2007). Studies in which the training was briefer included training models during which parents participated in only a few sessions to complete training (Charlop & Trasowech, 1991; Laski et al., 1988) without a specific demonstration of mastery criterion or measures of procedural integrity. More extended training has mostly focused on the teaching of general strategies to be used to build child skills and include studies in which training consisted of more concentrated hours (e.g., 25 hours per week; Koegel et al., 2002) or training that has lasted for several months (e.g., 3-9 months with 2 hour visits per week; Smith et al., 2000).

The current findings are pertinent to the priorities of parents with regard to the identification of behavioral targets for skill acquisition. Unlike previous studies (Charlop & Trasowech, 1991; Crockett et al., 2007; Ingersoll & Gergans, 2007; Laski et al., 1988), a research agenda did not drive the selection of behavioral targets. Instead, parents collaborated with a clinician to determine which skills would produce the greatest impact on their families' lives and stress levels. In the cases reviewed here, the most frequently identified targets were toilet training, social skills, and communication targets. Interestingly, comparatively little research exists on toilet training (as opposed to language and social skills) among children with ASDs, though parents clearly want these services. Toilet training skills have been the target of only 12 studies in the literature (Cicero & Pfadt, 2002; LeBlanc et al., 2005) and of those, only one of the studies specifically examined directly training parents in the implementation of toilet training procedures (LeBlanc et al.). However, an informal search reveals that social skills and communication are frequently addressed in the literature focusing on children with ASDs, suggesting that researchers are attending to these highly prioritized targets.

Although the general research has addressed social skills, the majority of parent training studies among children with ASDs have focused on general categories of improvement and communication targets (Charlop & Trasowech, 1991; Elder et al., 2005; Harris et al., 1981; Laski et al., 1988; Seung et al., 2006) with only a few focused on socially directed targets such as RIT (Ingersoll & Gergans, 2007) and social communication targets (Koegel et al., 2002). Parent interest in targeting social skills suggests that more research should be directed at teaching parents to target these concerns with their children. The cases reviewed here suggest that there are a variety of instructional strategies that parents can learn to implement to target these social

concerns including: BST, shaping, behavioral momentum, and video and live modeling. Parents were able to demonstrate high procedural integrity across all the interventions as evidenced by the percentage of steps that were implemented correctly.

From a systems perspective, it may be important in the future to identify similar strategies or similar training steps for strategies to provide a more detailed analysis as was conducted with the BST instructional strategy. By looking more closely into similar training strategies, such as BST, identification of areas of difficulty for parents may be possible. With this knowledge, service providers can spend extra time preparing parents for the challenges they might face when learning these skills. For example, service providers may be able to tailor role-plays to highlight the need for certain skills within an instructional strategy and ensure that parents are aware of the importance of these skills.

The clinic described consists of an outpatient setting, and further supports the notion that parents are able to learn in this setting. Previous literature provides evidence that training in the home or natural environments as well as training conducted in an outpatient setting are efficacious (Charlop & Trasowech, 1991; Crockett et al, 2007). Parents and caregivers were able to demonstrate an ability to learn the skills while in the clinic, and children were shown to have improved on the targeted behavioral skill in 76% of those for which data were available. Previous literature supports the notion that parents are able to exhibit skills demonstrated in the outpatient setting in their home and community environments (Koegel et al., 2002).

In summary, the current study contributes to the literature in several ways. First, these results demonstrate that a self-referred outpatient sample of caregivers were readily able to learn a variety of instructional strategies to use with their children when

the BST model was used for parent training. These children varied in severity of characteristics of the autism spectrum, age, and ability level. Second, parents learned the skills in a relatively short amount of time for all instructional strategies. These findings suggest that teaching parents to use instructional strategies with their children can be a relatively cost-effective means of treatment delivery, as they were in the clinic on average for only 11 hours. The demonstration of a brief training sequence is of vital importance, knowing that the lives of families of children with ASDs are already stressed with regard to time and resources (Marcus et al., 2005). Third, the behavioral targets were identified as highly prioritized concerns of parents illustrating the span of concerns for a sample of 46 caregivers. These concerns are not necessarily the most frequently studied behavioral targets in the parent training literature. Parents' concerns should be taken into account when developing treatment plans for families of children with autism, not only to enhance the likelihood of treatment acceptability and implementation, but also to enhance the quality of life of the individual and their family. The literature clearly suggests that parent training is an important component for this population (Tonge et al., 2006). Further evaluations of populations seeking services and models of parent training should continue to be conducted to demonstrate the variety of effective alternatives for individuals diagnosed with ASDs and their families.

Not only does the information provided here suggest areas of further development within the literature, it also suggests areas of importance for graduate training programs. As demonstrated here, consultation and/or outpatient services are an important mode of service delivery for this population. Graduate training programs should emphasize the importance of a variety of skills that are highlighted in this examination of the clinic. Important skill areas for future clinicians include: a creative

and collaborative identification of priority target areas and operationally defining those targets, identification or selection of instructional strategies to directly address those targets, and developing appropriate means of tracking progress towards goals. With regard to graduate training focused on services for children with ASDs, importance should be placed on social skills training and toilet training services, as evidenced by the high priority parents have placed on these targets in the clinic described.

While the current case evaluation describes some important variables in the area of providing an outpatient training service to parents and caregivers of children with ASDs, there are also a number of limitations or areas for improvement. First, while parents demonstrated the skills in clinic, and children demonstrated improvements a large number of cases, follow-up information was not consistently provided to ensure that parents were able to implement the procedures once they returned home due to travel distance for many families and funding constraints on home visits and follow-up appointments. Lack of follow-up data also impedes the ability to determine if there were effects of this type of training on continued child progress in the identified target area. Second, no social validity or parent satisfaction measures have been returned at the time of this writing, though surveys were distributed to all families within six months of completion of services for the first 18 months of operation. However, it is important to note that of the 46 families; only two terminated services prior to the end of training, and each of these family's reasons for discharge were unrelated to the training procedures (e.g., medical concerns, family moving). Third, the high number of families seeking toilet training services from this clinic may be due to the statewide reputation the clinic has for these services and the relative lack of alternative supports for toilet training. While this anomaly may have led to inflated numbers of parents with this

concern, it does not diminish the findings that there is a substantial need and parent desire for toilet training services. Finally, the variety of instructional strategies taught to parents and the individualization of data collection strategies may have hindered the ability to analyze specific steps in which parents were encountering the most difficulty within a given instructional strategy. More consistency with recommended instructional strategies, steps within a given instructional strategy, and data collection for given instructional strategies could enhance the ability to evaluate specifics of parent training such as areas of difficulty within the strategies and/or comparisons between instructional strategies.

Based on the information provided here, there are a number of suggestions for future research. First, additional evaluations of outpatient clinics should be conducted to determine other methods of training for parents as well as parent concerns for their children. By examining parent concerns, future research can be directed at developing interventions or instructional strategies that address these concerns. The information provided by this clinic suggests that more attention should be paid to the most highly prioritized concerns such as incontinence and toilet training and social skills in the parent training literature. Second, more thorough analyses of parent implementation of procedures should be conducted. By examining steps within the procedures, identification of challenging components can be identified and enhance the training process across a variety of instructional strategies. Further investigations should also evaluate the effects of parent procedural integrity on child progress. It may be that parents only need to implement some degree of accuracy before a child begins to make progress. Children may progress even when parents are not implementing the procedures with 100% accuracy. Finally, continued evaluations of parent satisfaction

with parent training procedures and the impact of parent training on stress levels should be examined. This is especially important as families with ASDs report significant levels of stress, and parent training has been suggested as a means to alleviate those stressors (Tonge et al., 2006).

Table 1. Demographics of total sample

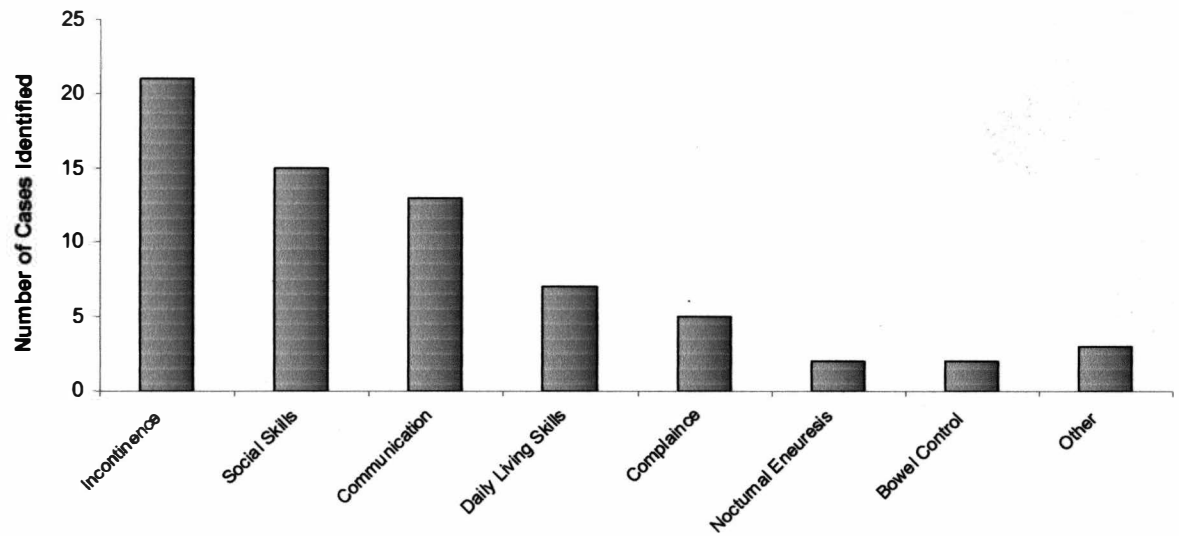| TABLE 1. Demographics of total sample	N = 46
Demographic Variable	**Sample Value**
Diagnosis	
Autism	34
Aspergers	6
PDD -NOS	4
Autistic Impairment (AI) - school classification	1
Unknown	1
Gender	
Male	83% (n = 38)
Female	17% (n- = 8)
Age Range, years and months	3y 4m – 12y 5m
	mean = 6y 9m
Referral Source	
Parent/Caregiver	37
Pediatrician	1
Psychologist/Psychiatrist	1
School	2
Supports Coordinator	1
Friend	2
Parent/Caregiver Receiving Training	
Both Parents	20
Mother only	20
Father only	1
Parent + other	5

Figure 1. Behavioral Targets Identified by Parents and Professionals

Figure 2. Instructional Strategies Targeted for Parent Training
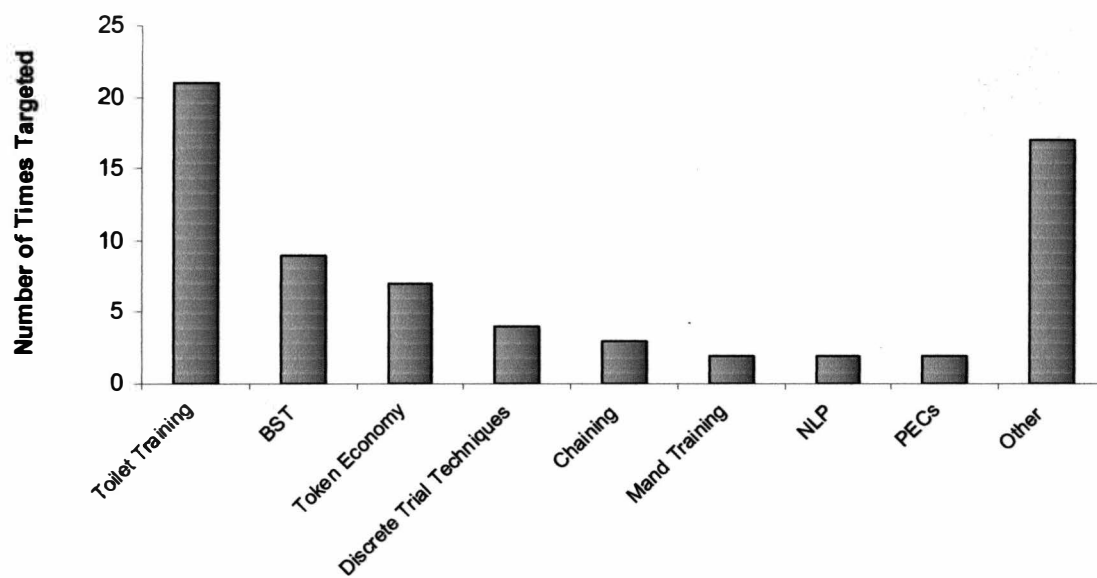
Figure 3. Average Trials to Criterion and Time Spent in Training (Instructions through Rehearsal) for Instructional Strategies with Multiple Implementations with Parents/Caregivers

Figure 4. Average Trials to Criterion and Time Spent in Training (Instructions through Rehearsal) for Instructional Strategies with Single Implementations with Parents/Caregivers

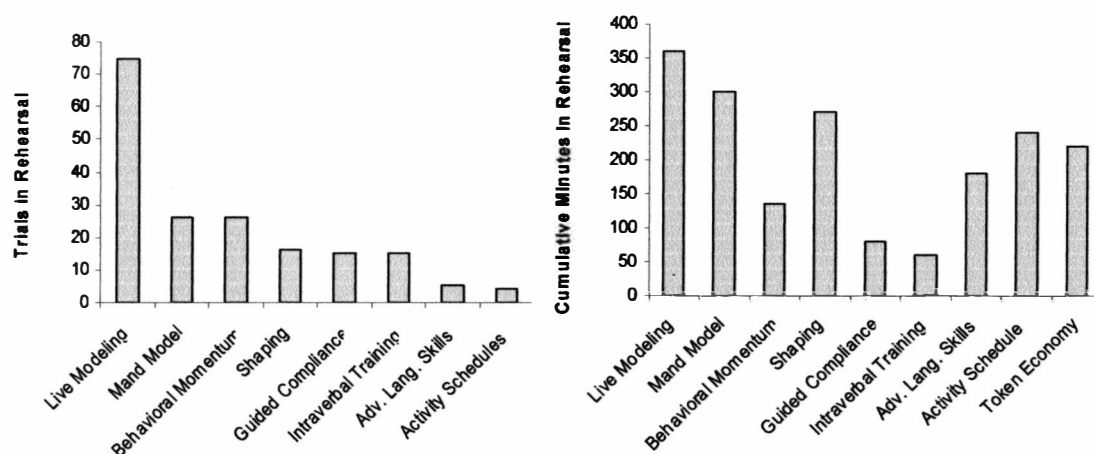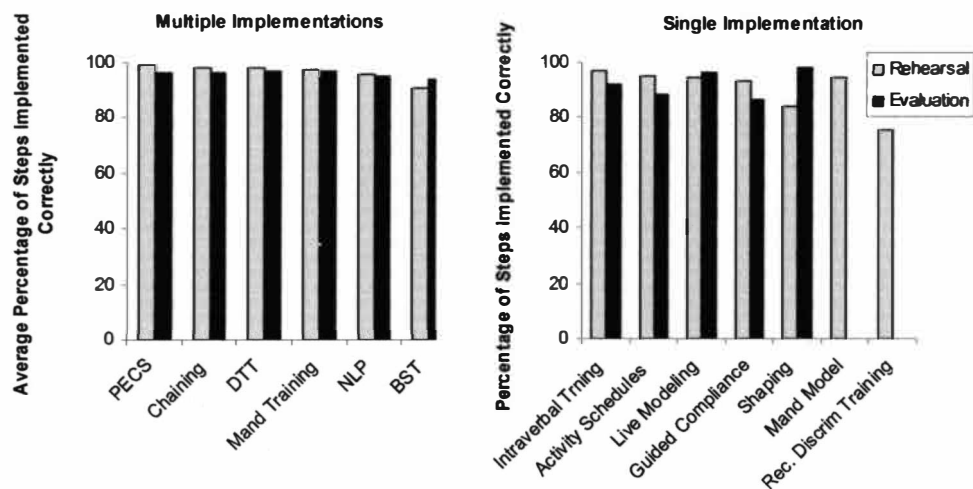*Figure 5.* Procedural Integrity: Percentage of Steps Implemented Correctly During Training per Instructional Strategy
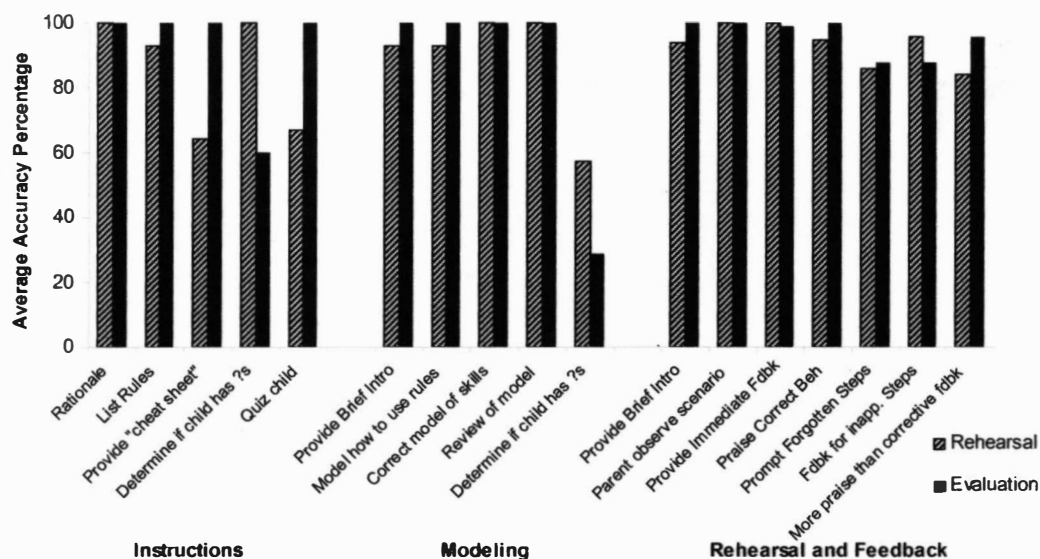
Figure 6. Procedural Integrity: Percentage of Steps Implemented Correctly During Training within an Instructional Strategy (Behavioral Skills Training [BST])

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Appendix A

Coding Datasheets

General Case Information

Case Number: _____ Gender: ❑ Male ❑ Female

Date of Intake: _____ Age at Intake: _____ Years _____ Months

Referral Source: ❑ Pediatrician ❑ SLP ❑ OT ❑ Parent ❑ School
  ❑ Psychologist/Psychiatrist
  ❑ Other: _____

Diagnosis: Date of Diagnosis: _____ ❑ Unknown
  ❑ DSM-based diagnosis or ❑ Educational Evaluation
  ❑ Autism ❑ Asperger's ❑ PDD-NOS
  ❑ Other: _____
  ❑ No Dx Assessment Info

If CFA conducted the Diagnostic Evaluation and we have the information:

GADS/GARS	Informant	Quotient	Probability

ADOS Module # _____	Domain	Score	Autism/Spectrum Cut-off
	Communication		
	Reciprocal Social Interaction		
	Communication + Social		
	Imagination/Creativity		N/A
	Stereotyped Behaviors / Interests		N/A

ADI-R	Category	Score	Cut-off Score
	Reciprocal Social Interaction		10
	Communication		8
	Restricted, repetitive and stereotyped behavior		3
	Abnormality at or before 36 months		1

PPVT	Standard Score:	Age Equivalent:
EVT	Standard Score:	Age Equivalent:
IQ Test	Assessment:	Full Scale IQ Score:

Vineland ❑ I ❑ II	Domain	Standard Score	Percentile Rank	Adaptive Level
	Communication			
	Daily Living Skills			
	Socialization			
	Motor Skills			
	Composite			

Parent Training (1 of 3)

Total Number of Sessions: _____   **Cumulative Minutes**: _____

    # Sessions prior to training: _____   # Sessions w/training: _____   # Other sessions: _____

First Target: **Start Date**: _____   **End Date**: _____

Primary Therapist: _____

Who did we train? ❑ Mother   ❑ Father   ❑ Other: _____

Deficit/Problems:

❑*Social Skills*   ❑ *Communication*   ❑ *Daily Living Skills*
__initiations   __basic vocals (e.g., requests)   __fxnal independence
__emotion recognition/labeling   __intraverbal   __hygiene
__interpersonal space   __PECs   __ personal safety
__other:_____   __other: _____   __other: _____

❑ *Play Skills*   ❑ *Incontinence*
    __independent   ❑ *Noncompliance*
    __w/sibling or peer   ❑ *Other Target Skill*: _____
    __ pretend play
    __other:_____

Intervention:
❑Chaining   ❑ Toilet Training   ❑ Token Economy   ❑ PECS   ❑ BST
❑Mand Model   ❑ Guided Compliance   ❑ Activity Schedules   ❑ Mand Training
❑ NLP   ❑ Other: _____

Training:
Did we use BST model to train:
❑ Yes
    __Standard BST   __ Inst. & Modeling Only   __Intensive Toilet Training   __ Other:_____

❑ No   Describe what was used: _____

Estimated time to mastery: _____ minutes (Session time - instruction through rehearsal)

    _____ Trials of rehearsal

    _____ Trials of evaluation

IOA: What % of trials: _____   % agreement: _____
    ❑ No IOA

Procedural Integrity Data – Do we have it?
    ❑ Yes
    ❑ No

Follow-up:
Do we have follow-up data?   ❑ Yes   ❑ No
    ❑ Baseline/Evaluation Data for Child
    ❑ Baseline/Evaluation Data for Parent
    ❑ Post-Training Follow-up Data on Child
Follow-up Contact:
    ❑ Phone Contact – Number of Contact Attempts:_____   Number of Successful Contacts:_____

Parent Training (2 of 3)

Second Target: **Start Date:** _____ **End Date:** _____
*If no second target mark here ❑
Primary Therapist: _____
Who did we train? ❑ Mother   ❑ Father   ❑ Other: _____

Deficit/Problems:

❑*Social Skills*   ❑ *Communication*   ❑ *Daily Living Skills*
__initiations   __basic vocals (e.g., requests)   __fxnal independence
__emotion recognition/labeling   __intraverbal   __hygiene
__interpersonal space   __PECs   __ personal safety
__other:_____   __other: _____   __other: _____

❑ *Play Skills*   ❑ *Incontinence*
   __independent   ❑ *Noncompliance*
   __w/sibling or peer   ❑ *Other Target Skill*: _____
   __ pretend play
   __other:_____

Intervention:
❑Chaining   ❑ Toilet Training   ❑ Token Economy   ❑ PECS   ❑ BST
❑ Mand Model   ❑ Guided Compliance   ❑ Activity Schedules   ❑ Mand Training
❑ NLP   ❑ Other: _____

Training:
Did we use BST model to train:
❑ Yes
   __Standard BST   __ Inst. & Modeling Only   __Intensive Toilet Training   __ Other:_____

❑ No   Describe what was used: _____

Estimated time to mastery: _____ minutes (Session time - instruction through rehearsal)

     _____ Trials of rehearsal

     _____ Trials of evaluation

IOA: What % of trials: _____   % agreement: _____
     ❑ No IOA

Procedural Integrity Data – Do we have it?
     ❑ Yes
     ❑ No

Follow-up:
Do we have follow-up data?   ❑ Yes   ❑ No
     ❑ Baseline/Evaluation Data for Child
     ❑ Baseline/Evaluation Data for Parent
     ❑ Post-Training Follow-up Data on Child

Follow-up Contact:
     ❑ Phone Contact – Number of Contact Attempts:_____   Number of Successful Contacts:_____

Parent Training (3 of 3)

Third Target **Start Date:** _____ **End Date:** _____
*If no third target mark here ❑

Primary Therapist: _____
Who did we train? ❑ Mother   ❑ Father   ❑ Other: _____

Deficit/Problems:

❑*Social Skills*   ❑ *Communication*   ❑ *Daily Living Skills*
__ initiations   __ basic vocals (e.g., requests)   __ fxnal independence
__ emotion recognition/labeling   __ intraverbal   __ hygiene
__ interpersonal space   __ PECs   __ personal safety
__ other: _____   __ other: _____   __ other: _____

❑ *Play Skills*   ❑ *Incontinence*
__ independent   ❑ *Noncompliance*
__ w/sibling or peer   ❑ *Other Target Skill*: _____
__ pretend play
__ other: _____

Intervention:

❑ Chaining   ❑ Toilet Training   ❑ Token Economy   ❑ PECS   ❑ BST
❑ Mand Model   ❑ Guided Compliance   ❑ Activity Schedules ❑ Mand Training
❑ NLP   ❑ Other: _____

Training:

Did we use BST model to train:
❑ Yes
__ Standard BST   __ Inst. & Modeling Only   __ Intensive Toilet Training   __ Other: _____

❑ No   Describe what was used: _____

Estimated time to mastery: _____ minutes (Session time - instruction through rehearsal)

_____ Trials of rehearsal

_____ Trials of evaluation

IOA: What % of trials: _____   % agreement: _____
      ❑ No IOA

Procedural Integrity Data – Do we have it?
      ❑ Yes
      ❑ No

Follow-up:

Do we have follow-up data?   ❑ Yes   ❑ No
      ❑ Baseline/Evaluation Data for Child
      ❑ Baseline/Evaluation Data for Parent
      ❑ Post-Training Follow-up Data on Child
Follow-up Contact:
      ❑ Phone Contact – Number of Contact Attempts:____   Number of Successful Contacts:____

Coding for Behavior Skills Training Treatment Integrity
Case #s – 1202, 1206, 1209, 1211, 1217, 1254

1. Instructions:	Approp. Impl	# Times Tgted	% Correct	% Errors
a. Appropriate Rationale Given	_____	_____	_____	_____
b. List Rules	_____	_____	_____	_____
c. Provide a "cheat sheet" & explain	_____	_____	_____	_____
d. Allow child to ask questions	_____	_____	_____	_____
e. Quiz child over rules and "cheat sheet"	_____	_____	_____	_____

2. Modeling:				
a. Provide brief introduction	_____	_____	_____	_____
b. Model how to use rules/"cheat sheet"	_____	_____	_____	_____
c. Correct model/demonstration of skills	_____	_____	_____	_____
d. Review of model	_____	_____	_____	_____
e. Allow child to ask questions	_____	_____	_____	_____

3. Rehearsal & Feedback:				
a. Provide a brief introduction	_____	_____	_____	_____
b. Did parent observe through entire scenario?	_____	_____	_____	_____
c. Did parent provide immediate feedback?	_____	_____	_____	_____
d. Praise correct behaviors?	_____	_____	_____	_____
e. Prompt forgotten steps	_____	_____	_____	_____
f. Feedback for inappropriate steps	_____	_____	_____	_____
g. More praise than corrective feedback?	_____	_____	_____	_____

Appendix B

Approval Letter from the Human Subjects Institutional Review Board

Date: December 20, 2006

To: Linda LeBlanc, Principal Investigator
        Britt Winter, Student Investigator for thesis

From: Amy Naugle, Ph.D., Chair

Re: HSIRB Project Number: 06-12-18

This letter will serve as confirmation that your research project entitled "Evaluation of an Outpatient Parent Training Service for Children with Autism Spectrum Disorders and Their Families" has been **approved** under the **exempt** category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may **only** conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: December 20, 2007