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Using the Prevent-Teach-Reinforce Model With Families of Children With Autism

by

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A Thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Arts
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Alternative, Generalization, Implementation Fidelity

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Table of Contents

List of Tables	iii
List of Figures	iv
Abstract	v
Introduction	1
Parental Training Interventions	2
Family Centered Positive Behavior Support	2
Maintenance	5
Generalization	5
Treatment Fidelity	6
Social Validity Measures	7
Prevent Teach Reinforce Model	9
Purpose and PTR Modifications	9
Research Questions	10
Method	11
Participants	11
Setting	12
Measures	13
Family Implementation Fidelity	13
Problem Behavior	13
Replacement Behavior	14
Social Validity Measures	15
Procedural Integrity	16
Data Collection and Inter-Observer Agreement	17
Design	18
PTR Intervention Procedures	18
PTR Initial Meeting	18
Nicky	18
Michael	19
Baseline Data Collection	20
Functional Assessment and Behavior Intervention Planning	20
Nicky	20
Michael	21
Family Training	22
BIP Implementation and Evaluation	22
Follow-up	23
Generalization	23

Results	25
Family Implementation Fidelity	25
Child Problem and Replacement Behavior	26
Social Validity	27
Discussion	32
References	37
Appendices	40
Appendix 1: Extra Table	41
Appendix 2: PTR Implementation Fidelity Checklists	43
Appendix 3: PTR Social Validity Self Evaluation	48
Appendix 4: Novel Rater Evaluation Social Validity	50
Appendix 5: PTR Integrity Checklist	51
Appendix 6: PTR Goal Setting Worksheet	52
Appendix 7: Functional Behavior Assessment	53
Appendix 8: PTR Assessment Organizational Table	58
Appendix 9: PTR Interventions Checklist	59
Appendix 10: Intervention Plan	60

List of Tables

Table 1: Definitions of Target Behaviors	15
Table 2: Mean Percentage of Interobserver Agreement	18
Table 3: Social Validity Questionnaire Results	30
Table 4: Novel Rater Social Validity Pre & Post Intervention	31
Table 5: Summary of Intervention	40

List of Figures

- Figure1: Percentage of family implementation fidelity and percentage of intervals, percentage of steps completed, and number of bites for Nicky's target behaviors across routines and phases 28
- Figure2: Percentage of mother implementation fidelity and percentage of intervals and number of repetitions for Michael's target behaviors across routines and phases 29

Abstract

This study involved families of young children with autism spectrum disorders to examine the feasibility of implementing an adapted version of the school-based Prevent-Teach-Reinforce (PTR) model. This research included two families who developed and implemented the intervention for their children in collaboration with the researcher. The PTR manual was modified for use in a family context. The PTR intervention was tested using a multiple baseline design across routines. Procedural fidelity was assessed during training and coaching, as well as family implementation fidelity and social validity. To examine the potential efficacy of the adapted PTR intervention, the children's target problem behavior and functionally equivalent alternative behavior were measured using video observation across experimental conditions including a generalization probe. Results indicated that the adapted PTR model is associated with reduction in child problem behavior and increases in alternative behavior. This study expanded the current research on the PTR model and extended its use to a novel setting and population so that a standardized model for positive behavior support implementation can be developed in the family context.

Introduction

Problem behaviors, which are often exhibited by children with autism, can be a pervasive challenge to family life. With the increasing numbers of children diagnosed with autism (Rice, 2009), it is becoming imperative to provide services within many areas that encompass the child's life, especially the area of family functioning where problem behaviors can cause major impairment to family and child quality of life (Lucyshyn, Albin, Horner, Mann, Mann, & Wadsworth, 2007; Moes, & Frea, 2002). Problem behaviors often develop because of environmental issues, which can result in reinforcement for undesirable behaviors, lack of reinforcement for desirable behaviors, and communication impairment for both the child and parent. These problems can occur when parents do not know how to effectively communicate to the child and the child cannot communicate wants or needs to the parent (Dunlap, Ester, Langhans, & Fox, 2006; Frea, & Hepburn, 1999). Because children with autism spend the majority of their time in the family setting, it is important to equip parents as well as extended family members and siblings with the necessary tools to create a desirable family environment (Meadan, Ostrosky, Zaghlawan, & Yu, 2009).

Another important aspect when providing support to children with autism and their families is early intervention. Families can often wait to access intervention concerning problem behavior until the child is older and the problem behavior cannot be 'controlled' by the parents, instead of seeking intervention that would curb problem behavior at the onset. Studies have shown that giving families the tools for change earlier in the child's life can provide for greater familial success (Bailey et al. 1998). This may be partially due to the fact that once routines and methods of dealing with problem behaviors are established within the parenting repertoire;

whether they work or not, it is more difficult to change the parenting behaviors than if early intervention is provided (Bailey et al., 1998).

Parent Training Interventions

Parent training has emerged over the past 20 years as an important target for interventions regarding children with autism. Parents are recognized as the best intervention agents because of the amount of time they spend with their child as well as the variety of settings they have the chance to teach skills in. Two basic systems have developed for parent training interventions; one is the expert-driven model and the other is the ecological or enabling model (Becker-Cottrill, McFarland, & Anderson, 2003; Brookman-Frazee, 2004). The expert driven model is often designed and implemented by someone considered an expert in parent training in a clinic or home setting, with a focus on training the parents how to decrease behaviors. This can include teaching the basics of behavior analysis, such as reinforcement and punishment, in a classroom-type setting, or teaching the parents to implement specific behavioral strategies that the expert has deemed necessary (Becker-Cottrill, McFarland, & Anderson, 2003). The ecological, or enabling model generally focuses on familial needs with interventions and services designed to include and support the specific family that the expert is working with, the focus is on collaboration more than provider management. These interventions generally endeavor to enable caregivers with the skills necessary to change behaviors on their own without the persistent need for an intervention specialist (Brookman-Frazee, 2004).

Family-Centered Positive Behavior Support

Positive Behavior Support (PBS) is considered an ecological model of parent training, and is derived from the fundamental concepts of operant learning theories of applied behavior analysis (Carr et al., 2002). The goal of the PBS approach is to enable parents, and in some cases teachers and other caregivers, to implement strategies that will result in decreases in problem behavior and improved family and child functioning by promoting effective, meaningful, acceptable, and durable changes in the behavior in the context of family routines (Dunlap & Fox,

1999; Lucyshyn et al., 2007). This is done by collaboration between the professionals and family members to ensure that the values of the family are addressed as well as their desired outcomes.

Functional assessment is used to comprehend the function of problem behaviors, and a multi-faceted individualized intervention is then incorporated into existing family routines (Moes & Frea, 2000). PBS specialists seek to create a good contextual fit for each family they work with so that families are able to successfully incorporate the support plans into their routines; support plans are often revised during intervention to ensure that family values, desires, and abilities are addressed (Buschbaker, Fox, & Clark, 2004; Lucyshyn & Albin, 1993). Developing these plans typically occurs in several stages, and the intervention components generally include antecedent manipulations, teaching replacement behaviors or engagement in incompatible responses, and contingency management, this may include a variety of strategies for each routine and behavior targeted (Dunlap, Wilson, Kincaid, & Strain, 2009).

During the past 15 years, researchers who focus on family-centered intervention for children with autism have actively used PBS as a framework for improving family ecology and child behavior (Buschbacher, Fox, & Clark, 2004; Dunlap, & Fox, 2010; Marcus, Swanson, & Vollmer, 2001, Vaughn, Clark, & Dunlap, 1997). However, only a limited number of research studies report the efficacy of family-centered PBS (Lucyshyn, Horner, Dulap, Albin, & Ben, 2002). In particular, only a handful of studies to date have aimed at supporting families of young children.

Marshall and Mirenda (2002) described four phases that they progressed through while working with a family of a four year old child with autism. The first stage was building relationships with the family, which involved developing trust and openness between the family and specialist, as well as getting to know the families routines, strengths, and desires. The second stage was conducting the functional assessment with the family to understand the problem behaviors and their function, and selecting routines that could be targeted for intervention. The third included developing the support plan that would be implemented during each routine

identified. The fourth and final step involved implementing the strategies and adjusting the plan. They incorporated several antecedent and teaching strategies, including providing snacks that might negate the setting event of the child being hungry, and providing a food choice board so that the child could ask for and receive the foods he wanted without resorting to problem behavior. A visual schedule was used to help the child learn the expectations of the routine. Contingency strategies such as praise and attention for completing tasks and not providing reinforcers for problem behavior were also used.

Although parent training and support remain vital aspects of family-centered PBS, it is quite challenging for professionals to engage in the reciprocal process of developing an understanding of the child's problem behavior, developing family goals in problematic family contexts, developing a contextually fit behavior support plan based on the functional assessment, and providing the families with necessary training and support in the process of implementing the plan. The complex process of assessment and intervention design and implementation that are required to implement family-centered PBS would not be easy without practical tools for use by professionals. Furthermore, professionals are likely to fail to develop a successful intervention plan if the plan is developed without the knowledge of parent goals for the child and family, family strengths, available resources, and daily family routines (Lucyshyn & Albin, 1993). As such, there is a need for development and evaluation of the feasibility and efficacy of using training or intervention manuals for professionals who work with families in the family context. Dunlap and Fox (1999) reported preliminary efficacy of the Individualized Support Project (ISP), a manualized, comprehensive family-based intervention model of behavior support for children ages 2-4 with autism. The model focuses on the delivery of early intervention for young children with autism through the family-professional partnership. The model suggests the process of assessment and planning for one month, intensive intervention and support for 3-5 months, and transition planning for one month to support young children with autism. The model shows some

promise in supporting young children with autism and their families. However, currently there is a very limited number of manualized PBS interventions tested with families of children with autism.

Maintenance

An important goal of family-centered PBS is that family and child outcomes are effective, meaningful, acceptable, and *durable* (Lucyshyn et al., 2007). Maintenance of the outcomes of implementation of PBS is an important measure when considering the ultimate goal of providing support is maintenance of the behavior changes. Providers and families want changes in behavior that endure long after the intervention has passed (Lucyshyn et al., 2007). This goal is inherent to PBS because the family is considered the primary interventionist. Several studies have shown that PBS does provide durable changes that increase child and family functioning within the routines that the plan was implemented (Duda, Clarke, Fox, & Dunlap, 2008; Buschbacher, Fox & Clarke, 2004; Marcus, Swanson, & Vollmer, 2001). Lucyshyn et al. (2007) demonstrated the durability of the PBS approach over a 7-year period after the intervention had come to an end. The authors conducted maintenance probes at 6, 18, 36, 67 and 86 months post-intervention, all of which had near zero levels of problem behavior, and desired levels of participation, which was comparable to the results during the intervention stage.

Generalization

One important area of consideration that can be often overlooked when it comes to family-centered intervention is generalization. Whether to novel people, settings, or routines, generalization is an important measure to consider and plan for when designing a PBS plan. Moes and Frea (2002) found that teaching parents functional communication techniques in order to decrease child's tantrum behavior successfully generalized to novel routines. Parents of children with autism chose two routines in which tantrum behavior occurred. For one routine, parents were trained how to teach their children functional communication, the other routine was videotaped during the treatment conditions and follow up to see if parents generalized the skills to

the routine that was not programmed for. The generalization of increases in functional communication and decreases in tantrum behaviors maintained through the follow up probes, which suggests that giving parents the tools to teach their children in a specific routine can result in positive outcomes for multiple routines.

In the study by Lucyshyn et al. (2007) generalization promotion training sessions were conducted with the family members of a five-year-old child with autism. The team met approximately eight times over a three-month period and discussed issues central to generalization including use of the worksheets and checklists central to their manual for PBS, strategies for selecting routines and plans for implementation in those routines, and encouragement to use all learned knowledge in novel settings and routines. The researchers then took generalization probes during a novel routine and found that problem behaviors decreased to near zero levels. These studies suggest that most caregivers are capable of using strategies taught to design and implement interventions in order to reduce problem behavior and increase functionally equivalent desirable behavior during novel routines.

As few studies implemented family-centered PBS with young children with autism, there is a need for more studies to examine the maintenance and generalization effects of PBS intervention within the context of family routines for young children with autism. More research is needed to show if the families can implement the intervention without professional or consultant support resulting in the maintenance of improved behaviors on the child's part, as well as family ability to successfully generalize the intervention strategies in non-trained routines resulting in changes in the child's behavior.

Treatment Fidelity

Marcus, Swanson, and Vollmer (2001) showed that child behavior corresponded with correct implementation of intervention procedures by teachers, thus making treatment fidelity an extremely important measure for behavioral researchers. This illustrates the need for researchers to take data on the correct execution of all steps in the behavior plan to make sure that the full

benefit of the plan can be seen. In research by Duda and her colleagues (2008), procedural fidelity was measured by using checklists of the steps necessary to correctly implement the plan. The baseline and intervention portions of the intervention were videotaped and then scored based upon if the intervention agent correctly implemented the steps. They found that overall correct implementation was only 55% for intervention components although the overall intervention was successful. The authors discussed that the behavioral plan encompassed four routines with 8-14 steps per routine so fidelity may have been low due to the intensive intervention steps. Dunlap and his colleagues (2009) measured fidelity prior to, and during, implementation to ensure that the behavior support team was comfortable with the intervention steps and to guarantee that the team continued to implement steps correctly.

Findings from the studies above indicate that developing contextually fit behavior support plans that are simple to implement by natural change agents and providing technical assistance in the form of coaching and feedback are essential to increase treatment fidelity (Fox, Dunlap, & Powell, 2002; Kohler, Strain, Hoyson, & Jamieson, 1997). Although family training tools or intervention implementation manuals are important to implement the intervention with fidelity, providing on-the-spot suggestions or in-vivo performance feedback would be an essential component to ensure treatment fidelity and increase the effectiveness of the intervention (Koegel, Robinson, & Koegel, 2009).

Social Validity Measures

Social validity measures within the field of PBS have generally taken two routes: 1) naive observers rating video of the intervention to see if effects can be seen or behaviors are socially acceptable/unacceptable; 2) self report of satisfaction with the intervention from individuals involved in the process. For example, Bushbacher, Fox, and Clarke (2004) added a social validity component in which parents who had no knowledge of the individuals in the intervention rated different aspects of videotaped sessions of the interventions to see if non-related parents found the children's behavior to be acceptable. The study reported that all parents rated the

problem behavior and subsequent behavior of the parents as unacceptable in the baseline condition, and acceptable in the intervention portion. Becker-Cottrill, McFarland, and Anderson (2003) evaluated social validity by means of contextual fit, and quality of life surveys in which the parents rated the success of the behavioral plan in a self reported method following the intervention. The self-report scale indicated the current level of functioning, following the intervention, and pinpointed success and stressful times during a post-intervention daily routine. The self report of the family provides the researchers with important information about what is and is not acceptable to families when it comes to design and implementation of PBS plans. Social Validity is a vital measure to ensure that interventions are acceptable to the team members or to people that might observe the behavior in a public setting.

Although social validity measures are regularly used by PBS researchers, self-report has been the main method of assessment (Lucyshyn et al., 2007; Moes & Frea, 2002; Becker-Cottrill et al., 2003). Self-report is important because it addresses the level of functioning the family was able to attain due to the intervention, the acceptability of the strategies used during the intervention, and the ease with which the intervention could be implemented. These all work to create a “goodness of fit” measure, which identifies if the intervention was not only successful but if the family was comfortable with the strategies used and the outcomes attained. However it does not suggest that interventions and their outcomes are acceptable on a wider-scale, such as the general population. Of the fourteen examined studies only two measured the social validity of the intervention by having novel parents, those without knowledge of PBS interventions or the families involved in the research, rate the intervention components. Having novel parents rate the social validity of intervention will demonstrate that interventions can be acceptable to the general population.

Prevent-Teach-Reinforce Model

Prevent-Teach-Reinforce (PTR) is a model of positive behavior support designed for use in school settings (Dunlap, Iovannone, Kincaid, Wilson, & Christiansen, 2009). It is available in a

manual form for use with school staff to address problem behavior by a) preventing the behavior; b) teaching socially appropriate alternative behavior; c) reinforcing all appropriate behavior. The model is based on the PBS approach in that it addresses the collaboration among teachers, staff, and a behavior specialist who design and implement the plan as a team, focusing on the strengths of the student and the function of problem behavior. The process occurs in five steps including: 1) team development, 2) goal setting, 3) functional assessment, 4) intervention development and implementation, and 5) evaluation. These steps are designed for ease and simplicity of identifying appropriate behaviors, both problem and replacement, to address, designing a plan that encompasses prevention, training, and reinforcement, and evaluation of social validity and fidelity of the plan and implementation.

The PTR manual provides a comprehensive plan for clinicians to gather, utilize, and train a team of people surrounding the individual of concern. The manual includes checklists and worksheets that facilitate the clinician in getting to know the team members better, identifying the problem behaviors and variables surrounding them, planning an acceptable intervention with the team, surveying the team on their perceived validity of the intervention, and taking data on the problem and replacement behaviors. Dunlap et al. (2009) found that using this model was efficacious in decreasing inappropriate school related behaviors and increasing appropriate behaviors across two teams. Although the use of the PTR model sounds promising in the school setting, there is no current research to demonstrate the feasibility of PTR in the family setting, and it is not known whether the manualized PTR intervention can be adapted to the family context, particularly to the families of young children with autism.

Purpose and PTR Modifications

The purpose of this research was to examine the feasibility of implementing the adapted PTR intervention with families of young children with autism. Before testing the feasibility, the study adapted the current PTR model by modifying specific components of the worksheets included in the manual, such as specific behaviors, antecedents, and settings, which were tailored

to the school setting, were changed so that they encompassed home based options. For example, the worksheet suggested curricular changes as a prevent strategy were modified to replace that option with family routine changes. Steps 1 and 2 as described in the manual were collapsed as well as Steps 3 and 4 so that there are fewer meetings required in order to develop and implement the intervention. The suggested data collection method, caregiver rating following the routine, were not utilized, instead parents took video of the routines for later scoring by the researcher. These and other practical changes were addressed in order to attend to the differences between caregiver use in the family context and school personnel use in the classroom context.

Research Questions

This study extended the literature by a) examining the feasibility of implementing the adapted PTR model with families of young children with autism who have problem behavior; b) including a secondary caregiver as a design and implementation agent; c) assessing family generalization of the PTR intervention in a novel routine; and d) assessing social validity of the intervention with naïve parents. The research addressed the following questions: a) can family members including the secondary caregiver implement the behavior support plan, developed through the PTR process, with fidelity?; b) will the child's problem behavior decrease and functionally equivalent behavior increase across routines as results of the PTR intervention?; c) will family members be able to generalize the PTR intervention to a non-trained routine resulting in collateral changes in the child's target behaviors?; and d) will the adapted PTR intervention be rated as acceptable by novel parents?

Method

Participants

Two families of children with autism spectrum disorders participated in this study. Both were recruited from a local business providing in clinic academic services for children with autism spectrum disorders. Family A included a four year old male child, Nicky who had been diagnosed with PDD-NOS (Pervasive Developmental Disorder- Not Otherwise Specific) and his parents. Nicky had been diagnosed with PDD-NOS at 33 months of age. His standard scores on the Battelle Developmental Inventory II (BDI -2; Newborg, 2005) were reported to be 80-98 in the adaptive, personal/social, and motor domains which suggests typical functioning levels. His scores in the cognitive and communication domains were 69-71, suggesting moderate delays. He was also tested in receptive and expressive language areas using the Preschool Language Scale-4 (PLS-4; Zimmerman, Steiner, & Pond, 2002) which reported that he communicated at an average age equivalent of 11 months.

Nicky had been receiving a Verbal Behavior based therapy as well as physical therapy for a year prior to this intervention. In the clinical setting he was able to make a variety of sounds, such as mama, dada, and tee tee, but no formal words. He was also able to use up to 6 signs fluently. Nicky also attended a public preschool half time. Nicky frequently engaged in chewing his shirt or nonfood items, inability to go to the bathroom independently or no self-initiation of bathroom routine, and refusing to eat non-preferred food. Nicky's family consists of his parents and 6 year old sister. Both parents had Bachelor's degrees. His mother was a graphic artist and father was an engineer. Both parents shared responsibilities for their children. However, they took care of different routines. For example, Nicky's father was responsible for the morning meal and other morning routines. His mother generally took care of the routines that occur in the afternoon.

Family B included a 6 year old male child, Michael and his parents. Michael had been diagnosed with autism at 18 months of age by a licensed psychiatrist. Information on his current developmental levels was not available. However, when he was assessed at age three, the standard scores on the Vineland II (Sparrow, Cicchetti, & Balla, 2005) was 86 in the communication domain, which was labeled as adequate. However scores in the other domains fell below 79, which indicated functioning in a moderately low to low capability. Those scores were 78 in daily living abilities, 65 in socialization, 79 in motor skills, and 73 in adaptive behavior. Michael's scores on the Mullen Scales of Early Learning (MSEL; Mullen, 1995) indicated that at 36 months of age he functioned at an average level of 22 months. Michael had been receiving Verbal Behavior based therapy in home since the age of 18 months. Michael frequently engaged in tantrums and repetitive stereotypic behavior. Michael's family consisted of his parents and 8 year old brother. His mother had a Master's degree in Business Administration and worked in that field. His father had double Bachelors in History and Education and was a high school teacher. Michael's parents were also responsible for child care at home. His mother took care of the morning routine and father took care of afternoon routines. Michael's aunt often came to help and took the children to school. His father picked them up and took care of afternoon routines until Mom got home.

Setting

This study took place primarily in home with both families. The specific routines that the families selected for intervention included bathroom, independent play, and meal time for Nicky. The bathroom routine for Nicky occurred in the afternoon right after Nicky came back from school. Nicky never initiated bathroom routine and would often toilet in his pull-up. Independent play occurred after bathroom routine. During the play routine (generally television viewing, but also toy play), Nicky often put non-edible objects such as his shirt or other toys in his mouth and chewed on them. The mealtime routine occurred in the morning and at lunch during which Nicky refused or spit out nonpreferred food.

Michael's routines included car riding and the morning routine, which took place in the car and at the home. The car ride routine for Michael occurred when the family took him shopping, to grandparent's house, and to the public pool. During this time, Michael often engaged in repetitive, stereotypic behavior. During the morning routine Michael often engaged in tantrum behaviors.

Measures

To evaluate the feasibility of implementing the PTR model in the home settings, we measured family implementation fidelity and child problem behaviors that the team deemed severe enough to warrant intervention as well as functionally equivalent replacement behaviors that were taught and reinforced.

Family implementation fidelity. Family implementation fidelity was measured to assess the extent to which a parent and/or second caregiver implemented the behavior support plan as designed. Implementation fidelity was calculated as a percentage based on the number of correct steps implemented divided by the total number of steps that were applicable for each routine. Plans developed for Nicky contained 13 steps for the potty routine, 6 steps for the chewing routine and 6 steps for the meal routine. The plans for Michael contained 9 steps for the car routine and 8 steps for the morning routine. All fidelity checklists with specific steps for each routine can be seen in Appendix 2.

Problem behavior. Problem behavior for Nicky included inappropriate chewing and forced completion. Inappropriate chewing was defined as chewing his shirt or other non-food items during the play routine. Forced completion was defined as completion of bathroom steps with full physical prompts resulting from unwillingness to go to the bathroom. Problem behavior for Michael included repetition and tantrum. Repetition was defined as verbalizing repeated questions or phrases pertaining to destinations. Tantrum behavior was defined as kicking, hitting, screaming, crying, and whining. Percentage of intervals was measured for inappropriate chewing

and tantrums. Percentage of steps completed was measured for completion of bathroom steps independently or using physical prompts. Rate per minute was measured for repetitions during car rides.

Replacement behavior. The replacement behaviors to be increased for Nicky included independent completion of bathroom steps and eating unfamiliar food. The replacement behavior selected for Michael was following directions. Percentage of steps completed independently, number of bites of unfamiliar food, and percentage of intervals with appropriate or no-chewing were measured for replacement behaviors. Definitions of problem and replacement behaviors are presented in Table 1.

Table 1: Definitions of Target Behaviors

Target Behavior	Topography	Definition
<u>Michael</u>		
Problem Behavior	Screaming	Vocalizations in a high-pitched tone, above the normal vocal level required to hear the individual from a 20 foot distance
	Hitting	Using an open or closed fist in an attempt to make contact with the another individual
	Kicking	Using any part of the foot or leg in an attempt to make contact with another individual or object
	Stomping	Lifting the foot off of the floor and returning it to the floor in a forceful manner
	Whining	Vocal utterances that have a high pitched sound
	Crying	Squinting the eyes and furrowing the brow which may or may not result in emitting tears, accompanied by high pitched sobbing sounds
	Repeating	Repeating requests, questions, or statements pertaining to the preferred activity more than one time
Replacement Behavior	Following directions	Complying with a request from a family member or caregiver independently, for example eating breakfast when asked
<u>Nicky</u>		
Problem Behavior	Inappropriate Chewing	Putting any non-food object (e.g., shirt) in his mouth
	Forced completion of bathroom steps	Being taken to the bathroom and completing potty steps (e.g., entering the bathroom, pull clothes down, sit on toilet, stand up, pull clothes up, flush toilet, wash hands) with full physical prompts, without any initiation of finishing the steps on his own
Appropriate Behavior	Independent completion of bathroom steps	Completing potty steps without the need for any gestural, verbal, or physical prompts from caregivers
	Appropriate chewing	Any food item that is in the mouth, or no items in the mouth
	Accepting unfamiliar food	Accepting unfamiliar or non-preferred food past the plane of the lips, food that has either never been eaten before or has previously been associated with refusal

Social validity. Two types of social validity were assessed in this study: Self-rating by family members and rating by naïve parents. Self-rated social validity was assessed during the

follow-up phase. The family members (i.e., parents, secondary care giver) were asked to fill out a modified version of the PTR Self Evaluation: Social Validity form (see Appendix 3) which was adapted from the Treatment Acceptability Rating Form-Revised (TARF-R; Reimers & Wacker, 1988) and was designed to measure perceived ability to implement the plan, satisfaction with the plan, and ability/confidence to design a plan without the researcher. The scale consists of 15 items which uses a five point Likert-type scale to rate acceptability of the PTR intervention from 1 to 5, with counterbalanced questions (i.e. for some questions 1 indicates acceptability and 5 indicates an unacceptable score).

Novel parents also rated the intervention acceptability while viewing videos of the baseline and intervention components using a 5-item rating scale. The raters included three parents of children with autism, who did not have any previous experience with the family they were rating. They rated the before and after intervention video-taped data with questions concentrating on acceptability of child behavior, parent behavior, and implementation. The raters viewed two 2-4 minute video clips (one from baseline and one from intervention) taken during Nicky's mealtime and video clips taken during Michael's morning routine to assess the intervention acceptability. The scale items were adapted from the social validity measure by Buschbacher, Fox, & Clarke (2004) (see Appendix 4).

Procedural integrity. To ensure the researcher delivered the PTR process as planned, researcher procedural integrity was assessed during the implementation of the PTR process. Each session with team members was audio taped and scored by an independent observer using an integrity checklist. The independent observer was a graduate student in the University of Florida's ABA master's program. The observer used a yes/no checklist (see Appendix 5) adapted from the PTR manual, in order to assess if the researcher addressed all steps necessary during the team meetings. The procedural integrity checklist included a total of 15 steps (2-7 steps in each meeting). Percentage of procedural integrity was computed by dividing the number of steps addressed by the total number of steps in each session. The independent observer scored the

researchers procedural integrity at 100% across both families indicating that all PTR steps were correctly delivered in each meeting. IOA for procedural fidelity, assessed by using a point-by-point method (item by item), was 100% for families across sessions. IOA was assessed for 100% of the sessions.

Data Collection and Inter-observer Agreement

Child target behaviors were observed using a 10-second partial interval recording system or an event recording system for 5-10 minute sessions. Target behaviors for Nicky's bathroom routine were recorded using a task analysis worksheet which noted how many steps were completed independently versus with physical prompts. Meal time for Nicky was video recorded and scored by observing bites per meal of non-preferred foods. All applicable sessions were videotaped by parents for later scoring by the researcher and an independent data collector in order to score child target behaviors and to assess family implementation fidelity and interobserver agreements. 50% of the sessions were assessed for IOA. The family implementation fidelity was scored using the Family Implementation Checklist (see Appendix 2). The independent observer and researcher practiced data collection until they achieved 90% agreements, using video and audio recording of the selected family routines.

As shown in Table 2, the mean IOAs were 100% across participants, routines, phases, and target behaviors except the IOAs for Michael's target behaviors during morning routine in baseline and intervention. The IOA during morning routine averaged between 93% and 97%. IOA for problem behavior was 93-100% in baseline and 82-100% in intervention. IOA for appropriate behavior was 87-100% in baseline and 72-100% in intervention.

Table 2. Mean percentage of interobserver agreement

	Nicky's parent			Michael's parent		Nicky					Michael		
	Bathroom	Play	Meal	Moming	Car	Bathroom		Play		Meal	Moming		Car
						IC	PC	AC	IC	Bites	TB	AB	R
Baseline	N/A	100	100	100	100	100	100	100	100	100	95	97	100
Intervention	100	100	100	100	100	100	100	100	100	100	95	93	100
Follow-up	100	N/A	N/A	N/A	N/A	100	100	N/A	N/A	N/A	N/A	N/A	N/A

Note: IC—Independent completion, PC—Prompted completion, AC—Appropriate chewing, IC—Inappropriate chewing, TB—Tantrums, AB—Appropriate behaviors, and R—Repetitions

Design

The feasibility of using the PTR intervention in home settings was tested using a concurrent multiple baseline design across routines for each family. The family team identified over the course of the PTR process which routines were problematic. The family implemented the intervention staggered across target routines.

PTR Intervention Procedures

PTR initial meeting. An initial team meeting was conducted in each family's home. The initial two hour meeting covered Steps 1 and 2 of the PTR process, which encompassed teaming and goal setting. The first meeting focused on identifying routines in need of intervention and defining target behaviors for the individual. The team members used the PTR Goal Setting worksheet (see Appendix 6) in order to identify short-term and long-term goals for the individual in the areas of behavioral functioning, social functioning, and independent functioning. This worksheet helped team members identify deficits or problem behaviors and potential replacement behaviors that helped individual and family functioning.

Nicky. Nicky's team members consisted of his parents, his sister, and the researcher. During this first meeting Nicky's family identify three routines that posed problems; the bathroom routine, independent play, and meal time. During the bathroom routine, parents reported that Nicky would often toilet in his pull-up and then remove it and continue to engage in

activities. The parents would take him to the bathroom and put on a new pull up when Nicky toileted in his pull-up. They also often physically prompted Nicky to go to the bathroom. During this time, the parents forced Nicky to complete all the steps by providing full physical prompts. Nicky's "no self-initiation of bathroom routine" and relying on pull-ups had been one of the major concerns Nicky's parents had. During the independent play routine (generally television viewing, but also toy play) Nicky would put in-edible objects such as his shirt or other toys in his mouth and chew on them. Parents would verbally reprimand him and remove the item, which often led to them not putting shirts on him at all while at home.

For the mealtime routine parents reported that they might try to give him less preferred or unfamiliar food but he would either refuse or spit the food out after one bite and then refuse any further bites of that food, so they would stop attempting to feed it to him. Two of the routines, bathroom and independent play were selected for intervention, and the meal time routine was selected for generalization evaluation. The team members identified and defined the behaviors that occurred during the problematic routines which were targeted for decrease and increase.

Michael. Michael's team initially consisted of his parents and his aunt. Michael's family identified two routines that were problematic, riding in the car to preferred destinations, and the morning routine. They reported that during car rides he would repeat the same phrase and/or question about the destination multiple times, for example "we're going to Publix, we're going to Publix, mom, we're going to Publix. When can we go to Publix mom?" They would often reply by saying "yes, we're on our way," or "we're going right now, I've already told you we're going to Publix." During the morning routine parents reported that Michael would often kick and scream when asked to comply with morning tasks which included getting dressed, brushing hair, eating breakfast, taking medicine, brushing teeth, and putting on shoes. They would continue to place verbal demands and would try to "get him out of the bad mood" by tickling or chasing, and would eventually revert to yelling, holding him down if he was kicking excessively, or leaving him alone and trying again a few minutes later.

Baseline data collection. After the initial meeting, baseline data on the child's target behaviors and family implementation fidelity were obtained for a period of one week across routines. Families were asked to provide activities, food, or assistance, and interact with their child as they would normally. This phase was conducted with each family until a stable level of data was achieved across child target behaviors and in family implementation fidelity across routines. Observation sessions were 5-15 minutes depending on the target routine.

Functional assessment and behavior intervention planning. Following the baseline data collection, the team members participated in the second meeting, which encompassed Steps 3 and 4 of PTR process. A different three hour meeting was held for each routine so that intervention would be staggered across the routines. The meetings focused on determining the functions of the child's problem behavior. The PTR Functional Behavior Assessment form (see Appendix 7), which helps the team members break down the antecedents and consequences for particular behaviors, was used.

Nicky. Nicky's family determined that the function of Nicky's problem behavior during the bathroom routine was access to tangibles. Using PTR Assessment Organization Table (see Appendix 8), Nicky's family hypothesized that when Nicky had access to preferred activities (T.V. or computer) he was more likely to go pee outside of the bathroom, which gave him continued access to the preferred reinforcers until his parents noticed what had happened. They also found that the function of chewing behavior that occurred during independent play was automatic. They hypothesized that when Nicky was playing alone without direct adult supervision he was more likely to chew on his shirt and other items in order to gain the automatic reinforcement associated with the act of chewing.

Based on this information the team members completed the PTR Intervention Checklist (see Appendix 9), and determined which behavior support strategies were most helpful in addressing Nicky's problem behavior and teaching new skills in three specific components Prevent, Teach, and Reinforce. The team decided that for the bathroom routine the most helpful

prevent strategy would be to have environmental supports such as not having access to the T.V. until after he goes potty in the toilet, and having an if/then board with photographs of toilet and TV, which parents could use to signal to him that going to the potty would result in access to the TV. The pictures prepared for if/then board were detachable so that Nicky was able to use the pictures in order to request going to the potty by handing the picture to his parents.

Nicky's team decided that teaching specific communication and independence skills would be appropriate targets for the Teach component, and they elected to teach him to use the picture to request potty and to teach him to be able to go through all bathroom steps independently using visual prompts. The team developed a visual sequence of the bathroom routine to prompt Nicky to complete the bathroom steps independently. For the Reinforce component the team decided to discontinue reinforcement of the problem behavior and reinforce the appropriate behavior. The team focused on selecting interventions that were well-liked, functionally equivalent, and acceptable to the family members (see Table 5 in Appendix 1 for specific strategies selected). The team members then developed the PTR Intervention Plan (see Appendix 10). Each team went through this process for each routine selected. The specific steps were then broken down and a concrete plan was designed with steps that were implemented during intervention phase.

Michael. Michael's family completed three hour assessment and behavior plan meetings for each target routine. It was determined that repetitions in the car occurred to gain attention, and tantrum behavior during the morning routine functioned to delay the onset of less preferred activities (dressing, eating, brushing teeth etc.) and to gain attention from adults and his sibling.

For the car ride routine, parents decided to provide alternative items (e.g., books, toys, music, videos) that might help prevent repetitions by engaging Michael in alternative activities. Parents also felt that excitement about destinations contributed to the attention gaining behavior. Therefore, they wanted to teach him alternative statements or questions about destinations that could serve the same function as repeating did. Thus the team decided to interrupt repetitions,

require a few seconds of silence so that repetitions weren't reinforced, and then prompt or provide questions which would lead to appropriate statements which could be reinforced with attention. In this manner engagement in alternative activities and appropriate statements/questions were reinforced while repetitions ceased to be reinforced.

During the morning routine the family decided to use a timer to signal when transitions were about to occur and when engagement in the expected activity was to start. They also decided use a sticker board to reinforce completed activities and show Michael his progress toward preferred interactions (tickles and spinning). Parents also chose to ignore all tantrum behaviors and physically prompt Michael through the routines if necessary, and reinforce following directions with praise. A complete table of routines, functions, and hypothesis and intervention components was completed in order to delineate the behavior plans developed. Table 3, Appendix 1 shows the summary of intervention developed for each child.

Family training. After the intervention plan was developed during the second meeting, the researcher provided approximately 30 minutes of training to the family members on the implementation steps using verbal and written instructions, modeling, rehearsal, and feedback. The training occurred separately for each family. Using the PTR Family Implementation Fidelity Checklists (see Appendix 2), the researcher scored each member on their percentage of correct use of intervention steps. The researcher and family practiced using the steps until each family member (parent) was able to implement the steps with 90% accuracy.

Behavior intervention plan implementation and evaluation. Upon completion of training, the family members began implementation of the behavior plan in each target routine. For Nicky, both his parents implemented the intervention across routines. During the intervention implementation phase, coaching sessions were to be scheduled if implementation scores of any implementer fell below 80%. No coaching sessions occurred for Nicky's parents since the primary interventionist, his mother, and secondary interventionist, his father, fidelity scores never fell below 80% except in the generalization routine. The interventions for the bathroom routine

and the play routine were implemented for a period of six weeks, and intervention for the meal (generalization) routine was implemented for a period of one month.

The interventions for Michael were implemented by his mother. Two in-situ coaching sessions were conducted with Michael's mother during morning routine. The first coaching session lasted about 3 minutes and was simply a reminder and explanation for only giving stickers in the absence of tantrum behaviors. The second coaching session lasted 15 minutes and included feedback on the routine that had just occurred (medicine), discussion, and role play. She had failed to physically prompt Michael to the appropriate location and instead took the medicine and followed him to their sofa where he was engaging in tantrum behaviors and refusing to take medicine, she began attending to the tantrum behaviors so the session was terminated and in-situ training began. Although a booster session was needed during the car routine, the family was unavailable to meet in a timely manner, thus the researcher simply reminded them during the final meeting not to provide any conversation/attention for repetitions. The interventions for the car routine and the morning routine were implemented for a period of one month. The intervention ended when each family's primary interventionist (mother) demonstrated that they could implement plans with fidelity scores above 80% and when a stable pattern in child behaviors was seen.

Follow-up. At two weeks following the intervention, four follow-up data points were collected during bathroom routine for a period of two weeks during bathroom routine for Nicky. The researcher took four probes of child target behaviors and family implementation fidelity to determine if changes in behavior were maintained.

Generalization. During the first team meeting session Nicky's parents were asked to identify one additional routine that was problematic. The parents selected the meal time routine, and they were asked to use the worksheets to design their own intervention for the generalization routine. The intervention strategies selected for the meal time routine were based on functional behavioral assessment, the team conducted a meeting which lasted approximately two hours and

took place after the team designed two behavior plans for the other selected routines. The purpose was to determine if the family could successfully generalize what they had learned in the previous meetings. The researcher only provided small amounts of input when asked by the family for specific suggestions. Since the goal of generalization evaluation was to determine if families could develop and implement without the researcher involvement, no discussion, modeling, and role-play were provided. The researcher assessed procedural fidelity to the steps completed by the family members. Family procedural fidelity to each step was 100%.

The identified target behavior was accepting unfamiliar or non-preferred food (e.g., apples, hamburger, carrots, and eggs). It was hypothesized that Nicky's refusing or spitting food out was escape from food demand or non-preferred food. Strategies selected were using sibling modeling, providing food choices, and reinforcing each bite of food with preferred food. During family implementation of the generalization intervention, the researcher did not provide any implementation support. For Nicky, data were collected on the number of bites of unfamiliar or non-preferred food. Generalization data were collected across baseline and intervention phases. No Generalization data was taken for Michael due to scheduling and time constraints.

Results

Figure 1 and Figure 2 show the levels of occurrence of each family's implementation fidelity and each child's target behaviors across routines and experimental phases. Nicky's family's use of intervention strategies during the generalization routine is also presented in Figure 1.

Family Implementation Fidelity

As shown in Figure 1, Nicky's family use of intervention steps was 0-10% across routines in baseline. Once the PTR intervention was introduced, Nicky's parents' use of intervention steps immediately increased. His mother's implementation fidelity was an average of 92% for the bathroom routine and 100% for the play routine. In follow-up, his mother implemented the intervention steps correctly 100% of the time during the bathroom routine. No booster sessions were given to Nicky's mother or father for either target routine since the fidelity did not fall below 80%.

Nicky's father implementation fidelity data also shows that he implemented less than 10% of the intervention steps in baseline across routines, but his use of intervention strategies during the two target routines immediately increased to an average of 90% (a range of 83% to 100%) across routines in intervention, demonstrating high levels of implementation fidelity. During meal time routine in which family generalization of intervention was assessed, parent fidelity averaged 0% during baseline and 82% during intervention. However, their implementation fidelity was variable. Both parents' fidelity fell below 80% during four sessions.

As shown in Figure 2, average fidelity of implementation for Michael's family (mother) was 0% prior to intervention for the car routine and 2% for the morning routine and increased during intervention to 89% for the car riding routine and 88% for the morning routine.

Child Problem and Replacement Behaviors

As shown in Figure 1, Nicky was able to complete only 14% of the steps in the bathroom routine independently on average during baseline. After the behavior plan was implemented, the steps completed independently increased to 53.3% during the last four sessions. His levels of independent completion of bathroom routine remained stable at about 57% as intervention progressed. Some steps in the bathroom routine seemed to be more of a problem for Nicky to complete independently on a regular basis. They included pulling down pants and pull-up, pulling up pants and pull-up, and washing hands which required specific motor skills and were difficult to complete for his young age. This may have been why he did not achieve independence on more than 57% of the steps, during the intervention portion.

For the independent play routine, where chewing was targeted, Nicky engaged in chewing his shirt or other objects an average of 93% of intervals (a range of 71-100%) during baseline (see Figure 1). As intervention was introduced, chewing inappropriate items decreased to an average of 3% of intervals per session and appropriate chewing increased to an average of 98% of intervals in intervention.

During the generalization routine, during which the Nicky's number of bites of unfamiliar or non-preferred food was measured, his parents failed to offer any non-preferred or unfamiliar food to Nicky during baseline; the number of bites of target food per meal was 0%. However, during intervention bites per meal increased to 3 bites per meal on average (a range of 0-9 bites).

As shown in Figure 2, Michael's repeating behavior during car rides occurred an average of 3.3 times per minute in baseline and decreased to an average of .4 times per minute during intervention. Tantrum behavior in morning routine occurred an average of 75% of intervals during baseline, and decreased to an average of 19% during intervention. Following directions occurred an average of 25% during baseline and increased to 81% during intervention.

Social Validity

The results of social validity ratings indicated that the family-based PTR intervention had high levels of social validity. The overall ratings of acceptability were high, with a range of 3-5. Nicky's parents rated on average 4.3 for the independent play routine and a 4.5 for meal time routine. Michael's parents rated on average 4.6 for car riding and 4.5 for morning routine. The social validity ratings by novel parents on video segments of baseline and intervention sessions showed that raters found the success of the routines during baseline was very low. However, they responded that during intervention the children's behavior was acceptable and that the children were participating in the routine appropriately. The families were rated as being very comfortable in the routine. Overall mean ratings by the naïve observers across children and routines were 1.3 in baseline 4.7 in intervention. Table 3 shows the social validity rating scores by the child participants' parents and Table 4 shows the rating scores by the naïve observers.

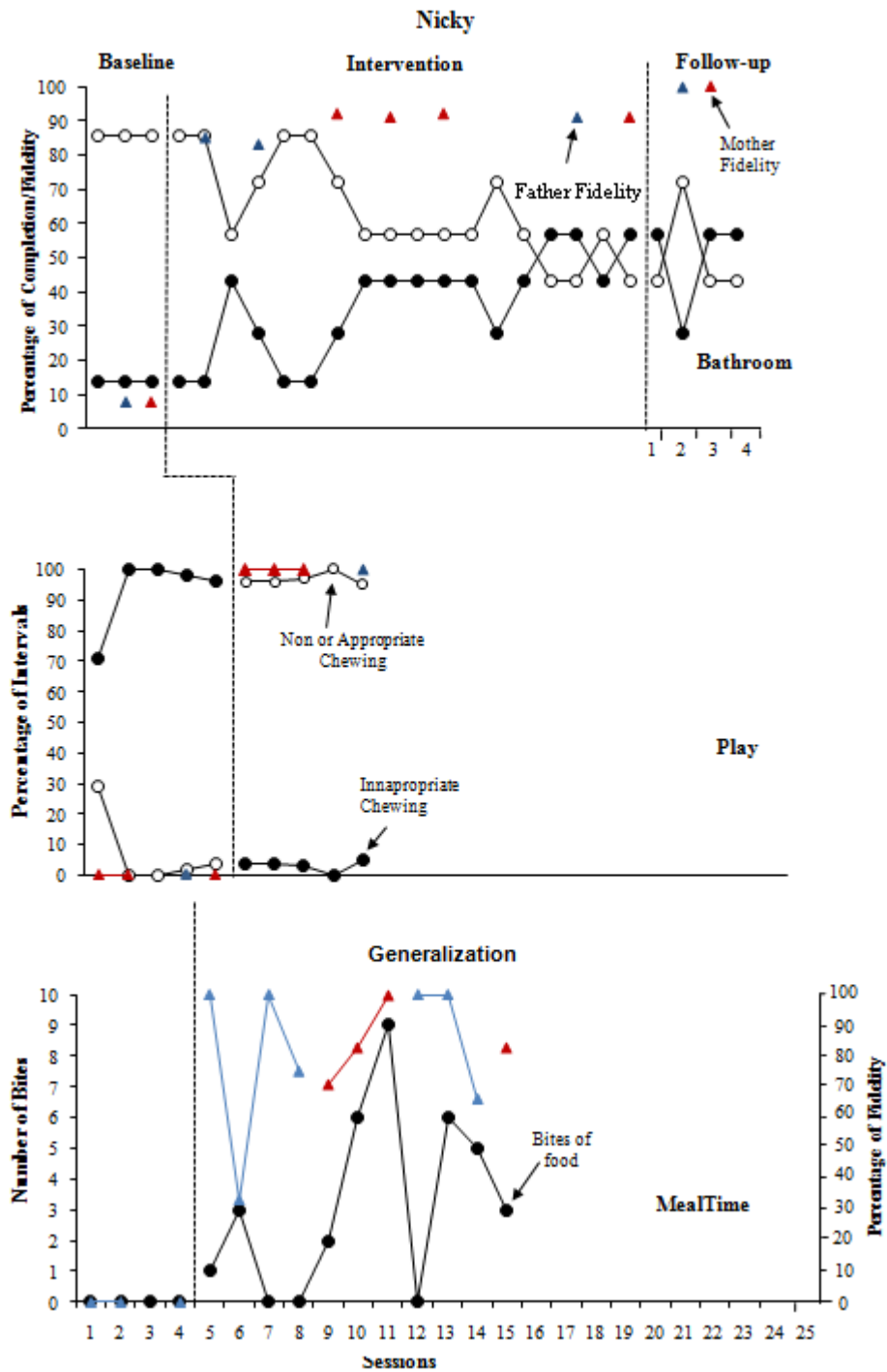


Figure 1. Percentage of family implementation fidelity and percentage of intervals, percentage of steps completed, and number of bites for Nicky’s target behaviors across routines and phases.

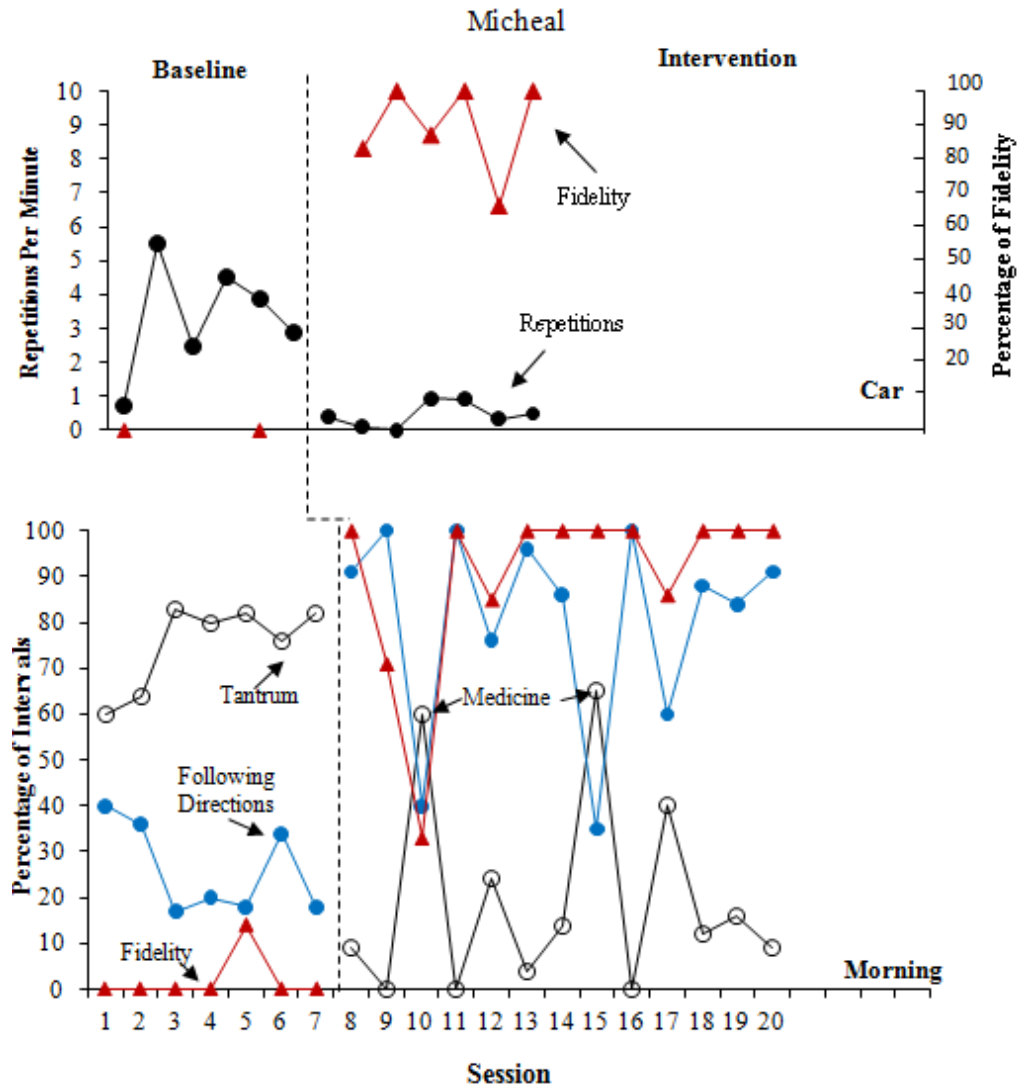


Figure 2. Percentage of mother implementation fidelity and percentage of intervals and number of repetitions for Michael’s target behaviors across routines and phases.

Table 3: Social Validity Questionnaire Results

	Nicky Mom		Nicky Dad		Michael Mom	
	Potty	Play	Potty	Play	Car	Morning
1. Given the child's behavior problems, how acceptable did you find the PTR behavior plan?	5	5	5	4	5	5
2. How willing were you to carry out this behavior plan?	5	4	4	4	5	5
*3. To what extent were there disadvantages to following the behavior plan?	5	4	5	5	5	4
*4. How much time was needed each day for you to carry out the behavior plan?	3	3	4	3	3	3
5. To what extent do you think the behavior plan was effective in reducing problem behaviors?	5	5	5	4	5	5
6. Do you feel that following this plan will result in permanent improvements in the child's behavior?	5	5	4	4	5	4
*7. How disruptive was it to carry out the behavior plan?	4	4	4	5	4	4
8. How much did/do you like the procedures used in the behavior plan?	5	5	4	4	5	5
9. How likely is it that you will continue to implement the procedures in the plan after this research is terminated?	5	5	5	5	5	5
*10. To what extent did you observe undesirable side effects as a result of the behavior plan?	5	4	5	5	4	5
*11. How much discomfort did the child experience during the behavior plan?	5	5	5	1	4	3
12. How willing were you to change routines in order to carry out the behavior plan?	4	5	4	4	5	5
13. How well did carrying out the plan fit into your current routines?	4	4	4	3	4	5
14. How effective was the intervention in terms of teaching the child appropriate behavior?	4	5	4	4	5	5
15. How well did the goal of the intervention fit with the team's goal for improvement of the child's behavior?	4	5	4	5	5	5

Note: *Reverse score items (i.e., 1 becomes 5, 2 becomes 4)

Table 4: Novel Rater Social Validity Pre and Post Intervention

	Rater 1 (Nicky Mealtime)		Rater 2 (Michael Morning)		Rater 3 (Michael Morning)	
	Pre	Post	Pre	Post	Pre	Post
1. The child's behavior is acceptable in this routine	1	5	1	4	1	5
2. The child is participating in this routine	1	5	1	4	1	5
3. The child appears comfortable with how the routine is going	1	4	2	5	1	5
4. The strategies used by the parents are working in this routine	1	4	1	5	1	5
5. The parent appears comfortable with how the routine is going	2	5	1	5	2	5
6. The strategies used by the parent are practical for families to implement	2	5	3	5	2	5

Discussion

This study assessed the feasibility of implementing an adapted PTR model for use in home with families of young children with ASD. The results suggest that the school-based PTR model is adaptable and can be used with success with families of children with ASD. This research shows that two families of children with autism were able to successfully create two behavior plans in collaboration with the researcher and implement them with fidelity across routines. The families' implementation of the PTR intervention positively affected the two children's behaviors. Both children's problem behaviors were dramatically reduced and alternative or replacement behaviors increased during intervention. The PTR model also had high social validity; both self-validity and novel rater validity indicated that the PTR intervention was acceptable to both families and the community at large. This suggests that a manualized parent training program using the PTR model may be helpful for service providers.

The current PTR model was adapted to include fewer worksheets and meetings than the original PTR model. The initial meeting lasted about an hour and half with both families, and subsequent meetings during which behavior plans were developed and BST was conducted lasted a maximum of three hours. In the current study the behavior planning and BST were done in the same meeting, and parents generally had 100% fidelity after two rehearsal/feedback sessions. The BST portion of the meeting was fairly short and didn't require a separate meeting date. Although the behavior plans created with the researcher were successful in reducing the children's problem behaviors and teaching their replacement skills, the family (Nicky's parents) who participated in the generalization routine were able to develop and implement the intervention plan with skills acquired through training and implementation support received during target routines. Their implementation of the plan resulted in collateral effects by increasing the child's acceptance of

non-preferred food. However, the family's implementation fidelity showed lower rates than those of during target routines, showing a variable trend. Although adherence to PTR steps was high, fidelity of implementation was variable. Increases in the number of the child's bites of non-preferred food did occur, which suggests that partial fidelity was successful in changing the child's behavior. This suggests that parents may be able to design effective plans using intervention options they are familiar with. However they may not be able to correctly implement the plans with fidelity without specific BST training. This was also seen in research by Rosales, Stone, and Rehfeldt (2010) during which they assessed the skills of implementing a picture exchange system with caregivers who had only written instruction and were then given behavior skills training.

The results of the current study suggest that a generalization promotion maybe needed in order to facilitate families' successful implementation of PBS intervention with fidelity during non-trained routines (Blair, Lee, Cho, & Dunlap, in press; Lucyshyn et al., 2007). A few studies found that parents could generalize specific PBS or function-based intervention strategies that had been previously taught (Blair et al., in press; Lucyshyn et al., 2007; Moes & Frea, 2002), but thus far the current study is the only research that attempted to examine if parents could generate and implement their own behavior plan successfully. Further research should look at how much experience creating behavior plans parents may need before being able to not only generalize strategies previously learned but to develop and implement specific plans with fidelity.

An alternative solution to the generalization promotion may be to consider looking at the adequacy of the intervention created by the parents. It is possible that the intervention strategies themselves were not necessarily strategies that would have been included had there been professional help.

This study extends the literature on PBS function-based intervention by providing evidence of outcomes of the family-centered process for children. The results suggest that family-centered intervention is essential in supporting children with ASD who have challenging

behaviors. This study demonstrates that behavior support using the PBS approach or function-based intervention can have powerful effects on outcomes for children with ASD when intervention is implemented in multiple routines through the family-professional collaborative process. A collaborative problem solving process that involves team building and addressing children's challenging behavior and promoting alternative skills in multiple family contexts could promote the children's long term success (Lucyshyn et al., 2007).

One important implication of current study findings for future research and practice is that families should collaborate in the entire behavior support process. Nicky's entire family including his father and sister participated in the process of PTR intervention. Nicky's sister who was six years old participated in the modeling procedures promoting and demonstrating appropriate eating during mealtime routine. Involving sibling in the process of implementing the intervention was imperative to increase the effectiveness of intervention. However it proved very difficult to involve all family members in the process, particularly getting parents to switch their current routines to implement intervention during routines they would not normally be responsible for. For example Nicky's father was usually the person in charge of feeding Nicky in the morning, since his mother was getting ready and taking care of his sister. This resulted in fewer data points when it came to assessing the mother's fidelity data for that routine. This was also seen with Michael's family. Michael regularly went to preferred locations with his mother and not his father, so repeating data was only assessed with one caregiver. It was also found that behavioral problems deviated depending on the routine and parent in charge, for example Michael was more likely to engage in tantrum behaviors when his mother was present versus when he was with his father alone. Therefore, when designing intervention, environmental stimuli and functions of problem behavior should be addressed within the family context should be emphasized.

Another interesting occurrence concerning Michael's behavior was the spike in tantrum behavior during the morning routine task of taking medicine in sessions 10 and 15. During the

functional assessment several morning tasks were assessed and it was found that during all routines there were similar amounts/types of tantrum behavior. However during intervention it became apparent that Michael responded well to the intervention strategies during all tasks except the task of taking medicine. This may have been due to the taste of medicine, which was a combination of fish oil, vitamins and minerals, and frozen orange juice concentrate (which supposedly cut the fish oil flavor). The increases in the child's tantrum behaviors during this specific task suggests that potential setting events that set up problem behavior should be identified during functional assessment to develop an effective behavior intervention plan.

This study suggests that adapting the PTR model for family contexts is important because service providers outside of the research environment need established methods with which to address problem behaviors, with families of children with ASD and other disabilities. The PTR method is a comprehensive method, including worksheets and possible strategies that encourage family participation which could be very helpful for providers who truly want to create plans that have great contextual fit, as verified by the social validity.

One of the bigger challenges faced during this study was the unpredictability of parents. A total of eight meetings were necessary between the two families. However, families cancelled and rescheduled 50% of those meetings, which led to time constraints and shorter implementation periods for the latter routines. One family was able to reschedule meetings in a timely manner. However, their data collection was very inconsistent despite the offers of the researcher to videotape. The other family took several days to reschedule and rescheduled meetings were all at least a week after the originally planned date. Although it was understandable for families with employed parents and multiple children, it still poses difficulties for researchers. Future researchers should anticipate parent unpredictably and research techniques that might combat that occurrence.

One limitation of this study is limited data collected during intervention due to families' inconsistent data collection. It was found that parents often did not follow baseline standards for

data collection, but did not readily accept offers for help with videotaping. Tapes were too short, parents often wanted to report following the incident, or simply they did not tape the amount of sessions requested. During this research Nicky's parents used a recording system with pen and paper for the bathroom routine and videotaped for the other two routines. They took significantly more data during the bathroom routine. Future research should investigate the fidelity of using the data collection method that is suggested by the original PTR model, which uses a rating scale system that parents can easily and accurately record target behaviors during routines.

This study used a small number of participants and thus the results should be interpreted with caution. Further research that includes a larger sample will be necessary to provide further validation of the adapted PTR model that focuses on family-professional collaboration. Overall this research is consistent with the original PTR research (Dunlap et. al., 2009) which demonstrates that the PTR method is highly adaptable In addressing challenging behavior in young children with ASD and promoting their alternative behaviors in home settings.

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Appendices

Appendix 1: Extra Table

Table 5: Summary of intervention

Routine	Target Behavior	Function	Hypothesis	Prevent	Teach	Reinforce Component
<u>Nicky</u>						
Potty Routine	Inappro-void or no self-initiation	Tangible	When Nicky is watching T.V. he is more likely to urinate outside of his pull up or the toilet which results in continued access to the T.V.	<i>Environmental supports-</i> prevent access to T.V., direct to If/Then board, say "1 st potty, then T.V" and prompt him to give potty picture	<i>Communicative skills-</i> teach that handing picture to parents results in going to potty <i>independence skills-</i> teach independence on all steps of the potty routine by using a picture schedule along with gestural and physical prompts	<i>Discontinue reinforcement of problem behavior-</i> no longer allow access to T.V. until after successful completion of the potty routine <i>Reinforce appropriate behavior-</i> reinforce completion of potty steps with T.V.
Play	Chewing	Sensory	When Nicky is playing independently he is more likely to chew on his shirt or other objects, which results in automatic reinforcement	<i>Provide Choices-</i> have appropriate food choices available	<i>Independence skills-</i> physically prompt child to location to choose appropriate item <i>Engagement-</i> redirect to appropriate activity and model play	<i>Remove reinforcement for problem behavior-</i> remove inappropriate object immediately <i>Reinforce appropriate behavior-</i> praise child for chewing appropriate food items
Meal Time (General ization)	Food Refusal Bites of unfamiliar and/or non-preferred food	Escape	When Nicky is eating he is more likely to refuse bites of foods that are unfamiliar or non-preferred, which results in escape from eating non-preferred foods	<i>Sibling modeling-</i> reinforce sibling for eating unfamiliar or less preferred foods (UNP foods) <i>Provide choices-</i> after 1-2 bites of UNP food give the option to continue eating UNP foods for Highly preferred reinforcers or eat typically eaten food	<i>Desired adaptive behaviors-</i> prompt bites of NP food and reinforce each bite with HP food, say "first eat ____, then get ____."	<i>Desired/Functional-</i> Reinforce bites of UNP food with bites of HP food

Appendix 1 (Continued)

<u>Michael</u>						
Car Riding	Repeating	Attention	When Michael is riding in the car he is more likely to repeat phrases, questions, and statements about preferred destinations which results in attention from siblings and parents	<p><i>Provide choices-</i> provide choices of appropriate car activities (book, preferred music, or preferred toy)</p> <p><i>Environmental support-</i> have items available only for in car use so that reinforcing value is maintained</p>	<p><i>Functional pro-social behavior-</i> interrupt repetitions with noise, require quiet for 5 seconds, prompt 3 appropriate statements or questions, then redirect to choice of activity</p> <p><i>Increased waiting time-</i> reinforce increasing amounts of time with no repetitions by praising every 30-60 seconds with conversation, then increase by 60 seconds</p>	<p><i>Discontinue reinforcement of problem behavior-</i> interrupt repeating with noise, and require 5 seconds of silence by doing a count down</p> <p><i>Reinforce appropriate behavior-</i> prompt correct statements or questions and reinforce them with praise and conversation</p>
Moming	Tantrum	Delay Attention	When a demand is placed for Michael to engage in less preferred tasks he is more likely to engage in tantrum behaviors which result in delayed onset of the task and adult attention	<p><i>Transition support-</i> use a timer to signal when the task will begin</p>	<p><i>Independent responding-</i> use physical prompts to promote engagement in the required task and fade them when he begins responding independently</p>	<p><i>Discontinue reinforcement of problem behavior-</i> ignore all tantrum behaviors, and remove target of tantrum behavior if behaviors become unmanageable</p> <p><i>Reinforce appropriate behavior-</i> reinforce following directions with praise and attention, when activities are finished provide preferred edible or attention based <u>reinforcers</u></p> <p><i>Home reinforcement system-</i> use a token economy to visually display progress toward preferred <u>reinforcers</u></p>

Appendix 2: PTR Implementation Fidelity Checklists

Routine: Potty Child: Nicky
 Team member: Consultant:

Task Analysis of Interventions	Demo #1	Demo #2
PREVENT STEPS		
1. No T.V.	Yes No	Yes No
2. 5-10 minute of No T.V. on to self-initiate	Yes No	Yes No
3. Taken to sign say “1 st potty, then Little Einstein”	Yes No	Yes No
4. Physically prompt him to hand you the potty picture	Yes No	Yes No
TEACH STEPS		
1.Nicky goes or is physically guided to the bathroom	Yes No	Yes No
2. Stand blocking the exit	Yes No	Yes No
3.Head/Eye gesture to the pictures	Yes No	Yes No
4. Given 10 seconds to self-initiate step	Yes No	Yes No
5. Physically prompted after 10 seconds	Yes No	Yes No
6. Repeat for each step	Yes No	Yes No
REINFORCE STEPS		
1. Reinforce self- initiation of bathroom routine or expressing bathroom needs with gestures with a high amount of praise	Yes No	Yes No
2. Reinforce completion of each step with verbal praise	Yes No	Yes No
3. Reinforce completion of routine with preferred T.V. Show	Yes No	Yes No
Total Correct Steps		
Percentage of Correct Steps		

Appendix 2 (Continued)

Consultant: _____
 Team member: _____

Child: Nicky
 Routine: Play

Instructions: Enter each detailed step that will need to be completed in order to correctly implement the behavior plan, then score yourself or another caregiver as they implement the behavior plan. Add the number of correct steps and divide by the total number of steps in the plan to find out what percentage of time the plan was implemented correctly.

Task Analysis of Interventions	Demo #1	Demo #2
PREVENT STEPS		
1. Have alternative appropriate chewing item available		
2. Provide choices		
TEACH STEPS		
1. Remove inappropriate item	Yes No	Yes No
2. Redirect to appropriate item	Yes No	Yes No
3. Redirect to activity	Yes No	Yes No
REINFORCE STEPS		
1. provide praise for chewing on appropriate item	Yes No	Yes No
Total Correct Steps		
Percentage of Correct Steps		

Appendix 2 (Continued)

Routine: Mealttime
 Team member: _____

Child: Nicky
 Consultant: _____

Task Analysis of Interventions	Demo #1		Demo #2	
PREVENT STEPS				
1. Non preferred food and a highly preferred reinforcer available	Yes	No	Yes	No
TEACH STEPS				
1. Nicky is given presented with non preferred food first	Yes	No	Yes	No
2. He is told “first eat _(non preferred)___ then you can have _(high preference_)”	Yes	No	Yes	No
REINFORCE STEPS				
1. Given highly preferred food for each bite of non preferred food	Yes	No	Yes	No
2. Given praise for each bite of non preferred food	Yes	No	Yes	No
3. No verbal redirection given for not eating non preferred food	Yes	No	Yes	No
4.	Yes	No	Yes	No
5.	Yes	No	Yes	No
6.	Yes	No	Yes	No
Total Correct Steps				
Percentage of Correct Steps				
Bites Swallowed				

Appendix 2 (Continued)

Routine: _____ Car _____
 Team member: _____

Child: Michael _____
 Consultant: _____

Task Analysis of Interventions	Demo #1	Demo #2
PREVENT STEPS		
1. Have books, music, toys, or movies ready		
2. Provide choice of book, music, toy, or movie at onset of car ride (provide at least 2 choices)	Yes No	Yes No
TEACH STEPS		
1. Interrupt repetitions with a noise	Yes No	Yes No
2. Count down with fingers from 5 (requiring 5 seconds without repetitions)	Yes No	Yes No
3. Prompt 2-3 appropriate statements/questions pertaining to the desired location if not engaged with item	Yes No N/A	Yes No N/A
4. Redirect to item if previously engaged	Yes No N/A	Yes No N/A
REINFORCE STEPS		
1. Reinforce appropriate statements with praise/conversation	Yes No	Yes No
2. Reinforce periods of quiet when Michael is not engaged with preferred items (approx. every 60 sec) with praise	Yes No	Yes No
3. Reinforce engagement with preferred items with praise and conversation pertaining to the items when he is finished with them	Yes No	Yes No
Total Correct Steps		
Percentage of Correct Steps		

Appendix 2 (Continued)

Routine: ___Morning_____

Team member: _____

Child: ___Michael_____

Consultant: _____

Task Analysis of Interventions	Demo #1	Demo #2
PREVENT STEPS		
1. Have the timer ready	Yes No	Yes No
2. Tell child, "When the timer goes off it is time to _____" and sets timer for appropriate amount of time (30s to 1m)	Yes No	Yes No
TEACH STEPS		
1. When timer goes off parents physically prompt Michael to the correct location for the task demand	Yes No	Yes No
2. Parent verbally prompts Michael to engage in the task while ignoring other behaviors, if necessary the parent can verbally prompt from outside of the room	Yes No	Yes No
REINFORCE STEPS		
1. Parent ignores all tantrum behaviors and removes themselves if necessary	Yes No	Yes No
2. Verbal praise is given for following directions, especially for independently following directions	Yes No	Yes No
3. 1 sticker is placed under the appropriate reinforcing activity for each demand that Michael completes	Yes No	Yes No
4. Stickers are given when Michael is not currently engaged in tantrum behavior	Yes No	Yes No
Total Correct Steps		
Percentage of Correct Steps		

Appendix 3:PTR Self-Evaluation Social Validity

Directions: Please score each item by circling the number that best indicates how you feel about the PTR intervention(s).

1. Given the child's behavior problems, how acceptable did you find the PTR behavior plan?

1	2	3	4	5
Not acceptable		Neutral	Very acceptable	

2. How willing were you to carry out this behavior plan?

1	2	3	4	5
Not willing		Neutral	Very willing	

3. To what extent were there disadvantages to following the behavior plan?

1	2	3	4	5
No disadvantages		Neutral	Many disadvantages	

4. How much time was needed each day for you to carry out the behavior plan?

1	2	3	4	5
Little time		Some time	Much time	

5. To what extent do you think the behavior plan was effective in reducing problem behaviors?

1	2	3	4	5
Not effective		Somewhat effective	Very effective	

6. Do you feel that following this plan will result in permanent improvements in the child's behavior?

1	2	3	4	5
Unlikely		Possibly	Very likely	

Appendix 3 (Continued)

7. How disruptive was it to carry out the behavior plan?

_____ 1 _____	_____ 2 _____	_____ 3 _____	_____ 4 _____	_____ 5 _____
Not at all disruptive		Slightly disruptive		Very disruptive

8. How much did/do you like the procedures used in the behavior plan?

_____ 1 _____	_____ 2 _____	_____ 3 _____	_____ 4 _____	_____ 5 _____
Not at all		Somewhat		Very much

9. How likely is it that you will continue to implement the procedures in the plan after this research is terminated?

_____ 1 _____	_____ 2 _____	_____ 3 _____	_____ 4 _____	_____ 5 _____
Unlikely		Somewhat likely		Very likely

10. To what extent did you observe undesirable side effects as a result of the behavior plan?

_____ 1 _____	_____ 2 _____	_____ 3 _____	_____ 4 _____	_____ 5 _____
No side effects		Neutral		Definite side effects

11. How much discomfort did the child experience during the behavior plan?

_____ 1 _____	_____ 2 _____	_____ 3 _____	_____ 4 _____	_____ 5 _____
Little discomfort		Some discomfort		Significant discomfort

12. How willing were you to change routines in order to carry out the behavior plan?

_____ 1 _____	_____ 2 _____	_____ 3 _____	_____ 4 _____	_____ 5 _____
Not willing		Somewhat willing		Very willing

13. How well did carrying out the plan fit into your current routines?

_____ 1 _____	_____ 2 _____	_____ 3 _____	_____ 4 _____	_____ 5 _____
Not at all		Somewhat		Very well

14. How effective was the intervention in terms of teaching the child appropriate behavior?

_____ 1 _____	_____ 2 _____	_____ 3 _____	_____ 4 _____	_____ 5 _____
Not effective		Somewhat effective		Very effective

15. How well did the goal of the intervention fit with the team's goal for improvement of the child's behavior?

_____ 1 _____	_____ 2 _____	_____ 3 _____	_____ 4 _____	_____ 5 _____
Not at all		Somewhat		Very well

Appendix 5: PTR Integrity Checklist

PTR Integrity Checklist

Date of Initial Meeting: _____

Consultant: _____

Instructions: (1) Place a 'x' in each cell that coincides with the activities completed during the meeting (e.g., discussion, role-play, etc.). (2) Answer yes or no if the consultant effectively demonstrates each step of the intervention. (3) Obtain Integrity score.

Task Analysis of Intervention Components	Discussion	Verbal Q & A	Modeling	Role-play Observation & Feedback	Implementer Demonstration # 1		Implementer Demonstration #2	
					Yes	No	Yes	No
Meeting 1								
1. Welcome and introduction of team			n/a	n/a	Yes	No	Yes	No
2. Overview of process and meeting goals			n/a	n/a	Yes	No	Yes	No
3. Explains and uses goal setting form			n/a	n/a	Yes	No	Yes	No
4. Explains and uses FBA checklist			n/a	n/a	Yes	No	Yes	No
5. Explains and uses FBA summary table			n/a	n/a	Yes	No	Yes	No
6. Explains and sets time for baseline data			n/a	n/a	Yes	No	Yes	No
Meeting 2								
1. Goes over baseline data and hypothesis			n/a	n/a	Yes	No	Yes	No
2. Explains and uses PTR intervention checklist			n/a	n/a	Yes	No	Yes	No
3. Explains and uses intervention scoring table			n/a	n/a	Yes	No	Yes	No
4. Develops Intervention plan					Yes	No	Yes	No
5. Makes and explains training checklist					Yes	No	Yes	No
6. Implements training using BST					Yes	No	Yes	No
7. Takes fidelity of implementation data			n/a	n/a	Yes	No	Yes	No
Meeting 3								
1. Discusses intervention data			n/a	n/a	Yes	No	Yes	No
2. Explains and uses self-evaluation social validity measure					Yes	No	Yes	No
					Yes	No	Yes	No
Total Number of Correct Steps								
Percentage of Correct Steps								

Appendix 6:PTR Goal Setting Worksheet

PTR Step 2: Developing Short Term Goals

Directions:

1. Identify one broad goal in each category
2. In each category identify the behavior(s) to be decreased and the prosocial behaviors to be increased to achieve each broad goal.
3. Clearly define or operationalize each goal so that each goal is:
 - Observable (seen or heard)
 - Measureable (counted or timed)
 - Significant (impact on child’s life)

Short-Term Goals for _____

		Behavioral	Social	Independent
Broad Goals				
Short-term goals for Decrease				
Short-term goals for Increase				

Appendix 7: Functional Behavior Assessment

Problem behavior: _____ Person Responding: _____ Child Initials: _____

PTR ASSESSMENT: Prevent Component

1a. Are there *times of the day* when problem behavior is *most likely* to occur? If yes, what are they?

Morning Before meals During meals After meals Traveling
 Afternoon Bedtime Community Evening

Other: _____

1b. Are there *times of the day* when problem behavior is *least likely* to occur? If yes, what are they?

Morning Before meals During meals After meals Traveling
 Afternoon Bedtime Community Evening

Other: _____

2a. Are there *specific activities or routines* when problem behavior is *very likely* to occur? If yes, what are they?

Breakfast Dressing Dinner time Before school
 Independent play Traveling in car T.V. viewing After school
 One-on-one play Computer Outside activities Bedtime
 Using the toilet Lunch time Cleanup Hygienic activities
 Bath-time Specials (specify) Transitions (specify)

Other: _____

2b. Are there *specific activities or routines* where appropriate and desired behavior is *very likely* to occur? What are they?

Breakfast Dressing Dinner time Before school
 Independent play Traveling in car T.V. viewing After school
 One-on-one play Computer Outside activities Bedtime
 Using the toilet Lunch time Cleanup Hygienic activities
 Bath-time Specials (specify) Transitions (specify)

Other: _____

3a. Are there *specific individuals* whose proximity is associated with a high likelihood of problem behavior? If so, who are they?

Parent Specify: _____
 Siblings Specify: _____
 Caregiver/babysitter Specify: _____
 Other family member Specify: _____

Appendix 7 (Continued)

Problem behavior: _____ Person Responding: _____ Child Initials: _____

3b. Are there *specific individuals* whose proximity is associated with a high likelihood of appropriate and desired behavior? If so, who are they?

- Parent(s) Specify: _____
 Sibling(s) Specify: _____
 Caregiver/babysitter Specify: _____
 Other family members Specify: _____

Other: _____

4. Are there *specific circumstances* that are associated with a high likelihood of problem behavior?

- | | | | |
|--|---|--|--|
| <input type="checkbox"/> Request to start task | <input type="checkbox"/> Task too difficult | <input type="checkbox"/> Transition | <input type="checkbox"/> Child is alone |
| <input type="checkbox"/> Being told he/she is wrong | <input type="checkbox"/> Task too long | <input type="checkbox"/> End of preferred activity | <input type="checkbox"/> 'Down' time (no task specified) |
| <input type="checkbox"/> Reprimand or correction | <input type="checkbox"/> Task is boring | <input type="checkbox"/> Removal of preferred item | <input type="checkbox"/> Parent is attending to other individual |
| <input type="checkbox"/> Told "no" | <input type="checkbox"/> Task is repetitive (same task daily) | <input type="checkbox"/> Start of non-preferred activity | |
| <input type="checkbox"/> Close proximity to certain individual | <input type="checkbox"/> Novel task | | |
| <input type="checkbox"/> Sibling teasing or comments | | | |
| <input type="checkbox"/> Change in schedule | | | |

Other: _____

5. Are there conditions in the *physical environment* that are associated with a high likelihood of problem behavior? For example, too warm or too cold, too crowded, too much noise, too chaotic, weather conditions...

Yes (specify) _____

No

6. Are there circumstances *unrelated specific activities or routines* that occur on some days and not other days that may make problem behavior more likely?

- | | | |
|---|--|---|
| <input type="checkbox"/> Illness | <input type="checkbox"/> No medication | <input type="checkbox"/> Sleep deprivation |
| <input type="checkbox"/> Allergies | <input type="checkbox"/> Change in medication | <input type="checkbox"/> Home conflict |
| <input type="checkbox"/> Physical condition | <input type="checkbox"/> Hunger | <input type="checkbox"/> Stayed with non-custodial parent |
| <input type="checkbox"/> Fatigue | <input type="checkbox"/> Parties or social event | <input type="checkbox"/> Change in routine |
| | <input type="checkbox"/> Change in diet | <input type="checkbox"/> Parent not home |

Other: _____

Appendix 7 (Continued)

Problem behavior: _____ Person Responding: _____ Child Initials: _____

PTR ASSESSMENTS: Teach Component

1. Does the *problem behavior* seem to be exhibited in order to *gain attention from siblings/peers*?

___ Yes *List the specific individuals:* _____

___ No

2. Does the *problem behavior* seem to be exhibited in order to *gain attention from adults*? If so, are there particular adults whose attention is solicited?

___ Yes *List the specific adults:* _____

___ No

3. Does the *problem behavior* seem to be exhibited in order to *obtain objects* (toys or games, materials, food) from peers or adults?

___ Yes *List the specific objects:* _____

___ No

4. Does the *problem behavior* seem to be exhibited in order to *delay a transition* from a preferred activity to a non-preferred activity?

___ Yes *List the specific transitions:* _____

___ No

5. Does the *problem behavior* seem to be exhibited in order to *terminate or delay* a non-preferred (difficult, boring, repetitive) task or activity?

___ Yes *List the specific non-preferred tasks or activities:* _____

___ No

6. Does the *problem behavior* seem to be exhibited in order to *get away from* a nonpreferred individual?

___ Yes *List the specific peers or adults:* _____

___ No

7. What *social skills(s)* could the child learn in order to reduce the likelihood of the *problem behavior* occurring in the future?

___ Peer interaction

___ Sharing objects

___ Taking turns

___ Play skills

___ Sharing attention

___ Losing gracefully

___ Getting attention appropriately

___ Conversation skills

___ Waiting for reinforcement

___ Joint or shared attention

___ Making pro-social statements

___ Accepting differences

Others: _____

Appendix 7 (Continued)

Problem behavior: _____ Person Responding: _____ Child Initials: _____

8. What *problem-solving skill(s)* could the child learn in order to reduce the likelihood of the problem behavior occurring in the future?

- | | | |
|--|--|--|
| <input type="checkbox"/> Recognizing need for help | <input type="checkbox"/> Working with others | <input type="checkbox"/> Staying engaged |
| <input type="checkbox"/> Asking for help | <input type="checkbox"/> Move ahead to easier | <input type="checkbox"/> Working independently |
| <input type="checkbox"/> Using visual supports to work | <input type="checkbox"/> items then go back to | <input type="checkbox"/> Self management |
| <input type="checkbox"/> independently | <input type="checkbox"/> difficult items | <input type="checkbox"/> Making choices from several |
| <input type="checkbox"/> Ignoring siblings/peers | | <input type="checkbox"/> appropriate options |
| <input type="checkbox"/> Graphic organizers | | |

Others: _____

9. What *communication skill(s)* could the child learn in order to reduce the likelihood of the problem behavior occurring in the future?

- | | | |
|---|---|---|
| <input type="checkbox"/> Asking for a break | <input type="checkbox"/> Tapping individual for | <input type="checkbox"/> Asking for help |
| <input type="checkbox"/> Expressing emotions | <input type="checkbox"/> attention | <input type="checkbox"/> Commenting |
| <input type="checkbox"/> (frustration, anger, hurt) | <input type="checkbox"/> Requesting wants | <input type="checkbox"/> Responding to others |
| <input type="checkbox"/> Requesting information | <input type="checkbox"/> Rejecting | |
| | <input type="checkbox"/> Active listening | |

Others: _____

Any other comments not addressed in the *Teach Component*:

Appendix 7 (Continued)

Problem behavior: _____ Person Responding: _____ Child Initials: _____

PTR ASSESSMENT: Reinforce Component

1. What *consequence(s)* usually follow the Child's *problem behavior*?

- | | | |
|--|---|---|
| <input type="checkbox"/> Sent to time-out | <input type="checkbox"/> Gave personal space | <input type="checkbox"/> Verbal reprimand |
| <input type="checkbox"/> Chair time-out | <input type="checkbox"/> Sent to another individual | <input type="checkbox"/> Stated rules |
| <input type="checkbox"/> Head down | <input type="checkbox"/> Assistance given | <input type="checkbox"/> Physical prompt |
| <input type="checkbox"/> Sent to another room | <input type="checkbox"/> Verbal redirect | <input type="checkbox"/> Parent/sibling reaction |
| <input type="checkbox"/> Given access to reinforcers | <input type="checkbox"/> Delay in activity | <input type="checkbox"/> Physical restraint |
| <input type="checkbox"/> Calming/soothing | <input type="checkbox"/> Activity changed | <input type="checkbox"/> Removal of reinforcers |
| | <input type="checkbox"/> Activity terminated | <input type="checkbox"/> Natural consequences (Specify) _____ |

Other: _____

2. Does the child *enjoy praise* from parents, siblings, or other family members? Does the child enjoy praise from some individuals more than others?

- Yes *List specific people* _____
- No

3. What is the likelihood of the child's *appropriate behavior* (e.g., on-task behavior; cooperation; successful performance) resulting in acknowledgment or praise?

- Very likely Sometimes Seldom Never

4. What is the likelihood of the child's *problem behavior* resulting in acknowledgment (e.g., reprimands, corrections) from parents, siblings, or other individuals?

- Very likely Sometimes Seldom Never

5. What items and activities are *most enjoyable* to the child? What items or activities could serve as special rewards?

- | | | |
|---|---|--|
| <input type="checkbox"/> Social interaction with adults | <input type="checkbox"/> Music | <input type="checkbox"/> Art activity |
| <input type="checkbox"/> Social interaction with peers/siblings | <input type="checkbox"/> Puzzles | <input type="checkbox"/> Computer |
| <input type="checkbox"/> Playing a game | <input type="checkbox"/> Going outside | <input type="checkbox"/> Video games |
| <input type="checkbox"/> Helping parents | <input type="checkbox"/> Going for a walk | <input type="checkbox"/> Watching TV/video |
| <input type="checkbox"/> Playing with pet | <input type="checkbox"/> Reading | <input type="checkbox"/> Objects (Specify) _____ |
| <input type="checkbox"/> Going to community sight (Specify) _____ | <input type="checkbox"/> Going to park | _____ |
| <input type="checkbox"/> Sensory activity (specify) _____ | <input type="checkbox"/> Individual play time | <input type="checkbox"/> Food (Specify) _____ |
| | | _____ |

Other(s): _____

Any other comments not addressed in the *Reinforce Component*:

Appendix 8: PTR Assessment Organizational Table

PTR Step 3: Assessment Organizational Table
Prevent-Teach-Reinforce Assessment Information

Child: _____ Date: _____

Prevention Data	Teaching Data	Reinforcement Data

Possible Hypotheses for Problem and Appropriate Behavior

When....	He/she will....	As a result, he/she

Appendix 9: PTR Intervention Checklist

PTR Interventions Checklist

Child: _____ Parent: _____ Date: _____ Behavior: _____ Completed by: _____

Hypothesis: _____

Prevention Interventions	Teaching Interventions	Reinforcement Interventions
<input type="checkbox"/> Providing Choices	**Replacement Behavior <input type="checkbox"/> Functional <input type="checkbox"/> Desired or Pro-Social	**Reinforce Replacement Behavior <input type="checkbox"/> Functional <input type="checkbox"/> Desired or Pro-Social
<input type="checkbox"/> Transition Supports	<input type="checkbox"/> Specific Independence Skills	<input type="checkbox"/> Increase Non-Contingent Reinforcement
<input type="checkbox"/> Environmental Supports	<input type="checkbox"/> Problem Solving Strategies	<input type="checkbox"/> Discontinue Reinforcement of Problem Behavior
<input type="checkbox"/> Environmental Modification (eliminating triggers)	<input type="checkbox"/> General Coping Strategies	<input type="checkbox"/> Group Contingencies
<input type="checkbox"/> Adult Verbal Behavior (just be nice)	<input type="checkbox"/> Specific Social Skills	<input type="checkbox"/> Increase Ratio of + to – Responses
<input type="checkbox"/>	<input type="checkbox"/> Parent Pleasing Behaviors	<input type="checkbox"/> Home Reinforcement System
<input type="checkbox"/> Setting Event Modification	<input type="checkbox"/> Learning Skills Strategies	<input type="checkbox"/> Establish Crisis Intervention
<input type="checkbox"/> Opportunity for Pro-Social Behavior (sibling support)	<input type="checkbox"/> Self Management (self monitoring)	
<input type="checkbox"/> Peer/Sibling Modeling	<input type="checkbox"/> Delayed Gratification	
	<input type="checkbox"/> Independent Responding	
	<input type="checkbox"/> Increased Waiting Time	

****All asterisked interventions need to be selected and included in the child's PTR Intervention Plan**

Appendix 10: Intervention Plan

PTR Step 4: Intervention Plan

Child: _____

Date: _____

Hypothesis: _____

PREVENT Interventions

Intervention Type	Specific Strategy	Needed/Who

TEACH Interventions

Intervention Type	Specific Strategy	Needed/Who

REINFORCE Interventions

Intervention Type	Specific Strategy	Needed/Who