

The Effects of the Implementation of Parent Coaching to Increase Quality of life for
Children and Families Affected by Autism Spectrum Disorder

Katherine J. Bateman

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Reading Committee:

Ilene Schwartz, Chair

Nancy Rosenberg

Kathleen Meeker

Kathleen Washington

Program Authorized to Offer Degree:

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University of Washington

Abstract

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Katherine J. Bateman

Chair of Supervisory Committee:

Professor Ilene Schwartz

College of Education

As the prevalence of children diagnosed with autism continues to rise, the need for high quality parent coaching practices to ensure generalization of skills targeting in early intervention services is pronounced. This mixed methods study investigated the results of implementation of a parent coaching treatment package developed in alignment with adult learning and education theory, seeking to increase quality of life for families affected by autism. Results suggest that this intervention may be an effective and socially valid intervention for parents of children who engage in high rates of challenging behavior at home, and has the ability to increase parent implementation of target behavior skills taught in intervention. Parents identified intervention as having high acceptability and identified parent coaching treatment package as a highly effective intervention. Individual results discussed, as well as implications of this intervention as a whole.

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Dedication

I dedicate this to my sister and forever best friend. I love you, sweet Habibi.

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Introduction

Significant amounts of research across numerous disciplines and theoretical approaches demonstrates that children diagnosed with Autism Spectrum Disorder (ASD) and other related disabilities, often engage in challenging behavior (e.g., Volkmar, Lord, Bailey, Schultz, & Klin, 2004; Dunlap & Fox, 2007; Fox, Vaughn, Wyatt & Dunlap, 2002; Frea, Arnold & Vittimbergo, 2001). Engagement in challenging behaviors and their associated developmental differences often leads to compromised interactions with peers and adults, as engagement in functional, appropriate behavior is limited (Carr & Durand, 1985; Dunlap et al., 2006). Challenging behavior limits access to the community and other environments outside of the clinical setting, denying potential learning opportunities and development for children with disabilities among their typically developing peers (Murphy, 2009). Quality of life for children with disabilities, as well as their families, is decreased, as engagement in challenging behavior has shown to lead to negative outcomes (e.g., Carr & Durand, 1985; Dunlap et al., 2006; Wood, Cho Blair, Ferro, 2009). Further, due to diminished quality of family life, parents of children with disabilities often display higher rates of stress, anxiety, and depression than parents of typically developing children (Fox et al., 2002; Smith, Buch & Gamby, 2000).

One approach to addressing challenging behavior, along with the concomitant negative issues experienced, is to provide family members with effective and sustainable strategies to address and mitigate these behaviors in their home. Bradshaw, Steiner, Gengoux and Koegel (2015) discuss the need for intervention to address problematic behaviors as early as possible in a child's development in order to see optimal results. Not only does parent centered early intervention address challenging behavior before a

strong history of reinforcement is acquired, but it also helps the family achieve a greater sense of confidence and competence in their parenting. A robust literature base identifies effective, evidence-based interventions to decrease challenging behavior (Wong et al., 2014). One approach to target engagement includes parent-implemented interventions. As primary caretakers, parents play an integral role in success of early intervention for children with disabilities (Dunlap, Newton, Fox, Benito & Vaughn, 2001; Dunlap et al., 2006; Fettig, Schultz & Sreckovic, 2015).

Including Parents in Early Intervention. Incorporating parents in early intervention has shown promising outcomes (e.g., Bearss, Johnson, Handen, Smith & Scahill, 2012; Fettig & Ostrosky, 2011; Fettig et al., 2015). Increased skills (i.e., Briggs, Cox, Sharkey, Briggs, Black, 2016; Graf, Grumm, Hein, & Fingerle, 2014, Lequia, Machalicek & Lyons, 2013), renewed confidence (McConachie & Diggle, 2007), and reduced stress (i.e., Estes et al., 2014; Oien & Eisemann, 2016; Whitney & Smith, 2015) are all identified benefits of parent education and coaching. Further, through implementation of parent coaching, parents learn how to prevent and respond to their child's challenging behaviors. Parents' repertoire of intervention skills increases as consistency of implementation of these strategies is promoted across all members of a child's immediate family and education team. This consistency in implementation leads to decreases in reduction in challenging behavior, as intervention is reliable and consistently implemented (e.g., Durand, Hieneman, Clarke, Wang & Rinaldi, 2013; Fettig & Ostrosky, 2011; Moes & Frea, 2002;). As parents experience the effects of strong implementation of intervention across all members of a child's immediate life, parent's implementation of intervention is reinforced. Additionally, parents' confidence in their

application of skills is promoted, leading to reductions in parent stress levels and anxiety (Estes et al., 2014; Kasari & Sigman, 1997). Ultimately, these decreases in negative factors associated with engagement in challenging behavior promote higher quality of life for parents and their children, further providing compelling evidence exemplifying the need for incorporation of parents in implementation in early intervention services.

Positive Behavior Support (PBS). An effective intervention identified throughout research to address challenging behavior is Positive Behavior Support (PBS) (e.g., Carr et al., 1999; Carr et al., 2002; Koegel, R., Koegel, L., & Dunlap, 1996). Carr and colleagues identify PBS as an applied science seeking to expand skill repertoire, while modifying and redesigning an individual's immediate environment to increase quality of life for the individual, as well as their immediate family members and other people affected by the target individual's engagement in challenging behavior (2002). PBS focuses on the implementation of skills that help promote positive behaviors across a person's life. This applied science emphasizes the prevention of challenging behavior by implementing strategies rooted in Applied Behavior Analysis (ABA) (Baer, Wolf, & Risley, 1968), promoting the movement towards inclusion and normalization of people with disabilities (Wolfensberger, 1983).

Implementing PBS both reduces current challenging behavior and aids in preventions before more intensive, individualized higher, level interventions are necessary or other related challenging behaviors emerge (Sugai et al., 2000). Because one of the major goals of PBS is to also increase quality of life for primary stakeholders of an individual who engages in challenging behavior, it is important to ensure that these stakeholders are included in the implementation of intervention. As critical stakeholders

in the success of interventions in home and community settings, it is crucial to incorporate parents in the design, implementation and evaluation of these PBS interventions.

Quality of Parent/Child Interactions. Numerous factors affect quality of relationships and interactions between caregivers and children diagnosed with ASD and other related disabilities (e.g., Beurkens, Hobson & Hobson, 2013; Kasari, Sigman, Mundy & Yirmiya, 1988; Markus, Swanson & Vollman, 2001). First, research identifies a child's level of cognitive ability and language skills are directly related to the frequency of engagement in joint attention, positive feedback, and overall high quality interactions between parent and child (Beurkens et al., 2013). Kasari et al. (1988) found that for children of lower cognitive ability and language skills, parents often work to continuously keep their child engaged and occupied in tasks and activities, eliminating opportunities for engagement in any interactions between parent and child. Additionally, evidence suggests that as children engage in high rates of challenging behaviors, levels of parent stress, depression, and anxiety increase.

Implementation of interventions such as parent coaching provides parents with the skills necessary to engage in meaningful and positive interactions with their child. Further, as parents capitalize on numerous opportunities throughout a child's daily life to engage in high quality interactions with their child, positive outcomes are more likely to occur. As meaningful interactions between parents and child increase, episodes of challenging and problematic behavior often decrease, as parents have the skills necessary to respond appropriately and consistently to these behaviors. Parent's confidence and competence in independently implementing these behavioral strategies in their home

increases as their skills and fidelity of implementation increases, ultimately decreasing parent stress levels (e.g., Estes et al., 2014; Kasari & Sigman, 1997).

With strong research identifying the importance of parent-child relationships, it is important for practitioners to develop effective and sustainable interventions to facilitate positive parent child relationships. Since research identifies that parents and other family members are integral components of a child's development, ensuring that these individuals are included in implementation of intervention is valuable. This body of literature demonstrates that adults learn differently than children or adolescents, therefore considering the tenets of adult learning when developing parent-mediated interventions may affect the effectiveness and sustainability of these interventions. Given that parents are central components in the success of early intervention (i.e., Dunlap et al., 2006; Matson, Mahan & LoVullo, 2009; Staples & Diliberto, 2010), understanding the most effective way to teach and incorporate parents into intervention is relevant and useful for future development of treatment in the field.

Adult Learning Theory. Increasing interest and emphasis on this body of literature has led to more research exploring these instructional practices for adult learning and suggests that adults learn very differently than children and adolescents (e.g., Bryan, Kruter, & Brownson, 2009; Imel, 1999; Merriam & Caffarella, 1999; Nelson, 2009). Knowles (1973) further discusses the need for consideration of this body of research, as adults experience, positions, culture, and approaches to education are often overlooked when development of curriculum and other training procedures is conducted. In order to ensure parent coaching interventions are set up to promote optimal results from the onset of intervention, it is critical that this body of literature be consulted and incorporated into

development of intervention. This research suggests that not only should parent coaching protocols and packages be rooted in effective, evidence-based research, but it should also align with the way in which adults learn.

In one of the seminal pieces on adult learning, Knowles identified that much of the ideology of instruction utilized in college classrooms and other environments in which adults are active learners, is not in alignment with how in fact, adults learn (1973). This paradigm shift led to the development of the body of knowledge known as andragogy. Knowles (1973, 1976) identified the difference in this term from pedagogy, a commonly used term throughout education research, as “the art of science of teaching youth,” and andragogy as “the art and science of helping adults learn” (p.16). The contrasting ideals of these ideologies present differing assumptions, as each ideology is geared towards learning for different populations of people. These assumptions, as identified by Knowles (1973; 1976) are described in Table 1.

Table 1

Assumptions of Pedagogies and Andragogies

Assumption of Pedagogy	Assumptions of Andragogy
1. The role of learner, regardless of state of maturity, is a dependent role.	1. It is a natural part of the process of maturation for an individual to want (need, even) to move from dependency toward increasing self-responsibility and self-directedness.
2. The experience of the learner has little value as a resource for learning.	2. As individuals grow and develop they accumulate an increasing reservoir of experience that is a rich resource for learning.
3. People are ready to learn what they are told they must learn.	3. People become ready to learn whatever they need to know or be able to do in order to cope more effectively with changing life tasks and life problems.
4. Learners are subject-centered in their orientation to learning; they perceive learning as being a process of accumulating subject matter.	4. Adults tend to be problem-centered or task-centered in their orientation to learning; they learn better, therefore, when learning experiences are organized around life situations than when they are presented in terms of subject units.
5. Motivation to learn is primarily externally induced.	5. Although adults respond to externally induced motivators, the more potent motivations to learn come from internal needs to grow and develop toward self-fulfillment.

Note. Adapted from “The Adult Learner: A Neglected Species” by M.S., Knowles (1973); “Separating the Amateurs from the Pros in Training” by M.S., Knowles, 1976, *Training & Development Journal*, 30(9), 16.

Knowles identifies that the difference in developing curriculum and procedures to teach adult learners is that unlike in pedagogies, where the learning is ultimately up to the teacher, learning in andragogy is up to the learner (1976). As research increased over the

next 40 years in the area of andragogy, specific principles began to emerge. These principles are rooted in literature, developed under the assumptions examined throughout research of adult learning. Further, Lawler and King (2000) identified six principles of adult learning that align with the assumptions discussed by Knowles (1973; 1976). These principles include: 1) Creating a climate of Respect, 2) Encouraging Active Participation, 3.) Build on Experience, 4.) Employ Collaborative Inquiry, 5.) Learn from Action, and 6.) Empower the Participants. Each of these principles is described in Table 2.

Table 2.

Adult Learning Principles Descriptions

Principle	Description
Create a Climate of Respect	Take the characteristics, values, and goals of adult learning into consideration.
Encourage Active Participation	Invite adult learners to participate and collaborate through every phase of programming.
Build on Experience	Identify and take advantage of previous experience of past learners, building upon these experiences for future positive transfer of learning.
Employ Collaborative Inquiry	Facilitate a collaborative framework to increase motivation for professional development and learning.
Learn from Action	Provide opportunities for adults to immediately apply learning and form connections between content and application.
Empower Participants	Empower participants to take action in implementing potential changes.

Note. Adapted from “Planning for Effective Faculty Development: Using Adult Learning Strategies” by P.A., Lawler and K.P. King, 2000, Malabar, Fla.: Krieger; “Teachers as adult learners: A new perspective” by Lawler, P. A., 2003, *New Directions for Adult and Continuing Education*, 15-22.

As specific adult learning principles are identified, it is important to incorporate

these practices into the development of parent coaching interventions. With explicit attention and emphasis on these principles and the assumptions in which these principles are rooted in, additional development of effective, high quality interventions across research is promoted.

Research Questions

PBS has shown throughout research to be an effective intervention for children with ASD who engage in challenging behavior. As previously identified, these preventative behavioral strategies rooted in ABA have shown to produce decreases in challenging behavior, as well as increases in overall quality of life for the child, and their family. This evidence is compelling, highlighting the success of implementation of these strategies in research. In order to increase sustainability of this intervention, it is important to teach parents these strategies, as they play an integral part of a child's success in early intervention.

Developing, implementing, and evaluating parent coaching protocols and procedures continues to be an area of need in instructional practices for children diagnosed with ASD and related disorders. These interventions have shown success in research to increase the efficacy of early intervention, specifically in home delivery of ABA services. As the field of ABA continues to increase as growing numbers of children are diagnosed with ASD, insurance coverage of ABA services also has increased. Because much of the field of ABA is now dictated by medical insurance requirements, it is important that interventions meet the needs of these requirements. Further, one of the major requirements of intervention dictated by insurance companies is the involvement

and incorporation of parents in ABA services. This requirement further highlights the need for effective and sustainable parent coaching interventions.

As parents are identified as central components in success of early intervention (Dunlap et al., 2006; Matson, Mahan & LoVullo, 2009; Staples & Diliberto, 2010), understanding the most effective way to teach and incorporate parents into intervention is relevant and useful for future development of interventions in the field.

The purpose of this study is to examine the effects of a parent coaching package rooted in PBS and developed in alignment with adult learning theory and principles, on increasing quality of home life for families of young children diagnosed with ASD.

This study seeks to answer the following questions:

- What effects does implementation of a parent coaching package incorporating adult learning theory have on parent implementation of target PBS skills taught during intervention?
- What effects does implementation of a parent coaching package incorporating adult learning theory have on quality of parent child interactions?
- What are parents' perceptions of the content, delivery, and effects of this intervention?
- What effect does implementation of a parent coaching package have on parent stress levels?

Method

In order to answer all research questions identified in Table 3, a mixed methods approach (Klassen, Creswell, Clark, Smith & Meissner, 2012; Morse, Niehaus, Wolfe & Wilkins, 2006) was used. Single case design and survey research methodologies were

utilized to assess the effectiveness and acceptability of this parent coaching intervention package.

Table 3.

Research Questions and Corresponding Methodologies

Questions	Methodology
1. What effects does implementation of a parent coaching package incorporating adult learning theory have on parent implementation of target PBS skills taught during intervention?	Single Case Design
2. What effects does implementation of a parent coaching package incorporating adult learning theory have on quality of parent child interactions?	Single Case Design
3. What are parents' perceptions of the content, delivery, and effects of this intervention?	Survey
4. What effect does implementation of a parent coaching package have on parent stress levels?	Survey

Participants

Three parent/child dyads of preschool aged children diagnosed with ASD participated in this study. All children attended a university-based inclusive early childhood program located in the Pacific Northwest. The children all attended an inclusive preschool classroom four days a week, and an extended day program three days a week. Criteria for selection to participate in this study included:

- Parents of children between the ages of four and six years of age.
- English speaking parent/child dyads.
- Parents of children with a diagnosis of autism who engaged in challenging and/or problematic behavior at home.

- One parent was available to participate in an eight-week training program and complete twice-weekly video assessments.

Stephanie and Henry. Stephanie was an Asian American mother of a young child diagnosed with ASD. Her son, Henry, was a three-year old Asian American boy who loved dramatic play, cars and other transportation toys. Henry previously attended a community-based school prior to enrolling in preschool and extended day services. Henry also attended a separate preschool with all typically developing peers three days a week. This is in addition to his outside ABA services. Henry lived with his mother and father. English and Chinese were both spoken at home. Henry was verbal and used extensive vocabulary and communication skills to communicate.

Per parent report, Henry engaged in challenging behavior at home specifically during non-preferred tasks or activities, or when denied access to preferred items or activities. Henry's mom reported that when Henry was frustrated by certain events or activities, he often engaged in crying and tearful episodes that are difficult to deescalate. Henry's mom identified that Henry was also easily distracted, and appeared to be unaware of the effect of his challenging behavior on other people in the environment. A major challenge for Henry and his family was getting Henry ready for school in the morning. Henry often engaged in avoidance and escape maintained behaviors during the morning routine, resulting in Henry consistently being late to school.

Jessica and Ryan. Jessica was a Caucasian mother of a young child diagnosed with ASD. Her son, Ryan, was a five-year old Caucasian boy who loved dramatic play, Playdoh, and playing house. Ryan previously attended a community-based school prior to enrolling in preschool and extended day services. Ryan received outside ABA services

during summer breaks. Ryan lived with his mother and father, older brother, and younger sister. English was spoken at home. Ryan communicated using Picture Exchange Communication System (Bondy & Frost, 2002), as well as some 3-4 word sentences. His language included many word approximations, as his communication was continuously evolving and increasing throughout the study.

Ryan engaged in challenging behavior at home specifically during non-preferred tasks and activities, including meals, and when he was denied access to preferred items or activities. Ryan's mom reported that he engaged in some rigid, repetitive behaviors and that when these behaviors were interrupted, Ryan would cry for long periods of time. . One of the major challenges for Ryan and his family was denying access to materials or activities. Ryan's mom identified that Ryan was often given access to any preferred activities or items, and expectations of Ryan to engage in non-preferred activities or tasks was minimal because of the possibility of engagement in challenging behavior. These challenging behaviors were maintained by gaining access to tangibles or activities, as well as escape and avoidance from non-preferred tasks and activities.

Peter and Jacob. Peter was a Caucasian father of a young child diagnosed with ASD. His son, Jacob, was a five-year old Caucasian boy who loved dramatic play, Legos, and Hot Wheel Cars. Jacob previously attended a community-based school prior to enrolling in preschool and extended day services. Jacob does not receive any outside ABA services. Jacob lived with his mother and father, and younger sister. English was spoken at home. Jacob communicated using 5-6 word sentences. His language included many word approximations, as his communication was continuously evolving and increasing throughout the study.

Jacob engaged in challenging behavior at home specifically during non-preferred tasks and activities, when denied access to preferred items or activities, or during unstructured times at home. Jacob's dad reported that Jordan engaged in challenging behavior in the form of hitting, kicking, screaming, throwing, and spitting during the previously identified antecedent events. One of the major challenges for Jacob and his family was getting dressed in the morning before school. Jacob engaged in challenging behavior to escape or avoid the demand of getting dressed, resulting in Jacob often going to school in his pajamas.

Setting and Materials

Setting. Implementation of parent training sessions occurred anywhere in the home, as chosen by the parent. Video recording data collection took place in the child's home during two activities: a mealtime and free play activity. Mealtime and free play activities were defined as the following:

- 1. Mealtime:* Any snack or meal where the child was expected to follow the family eating routine. This routine was specific to each family. Depending on preference of eating practices at home, mealtime took place at various places within the home. Videos were collected for a maximum duration of 10 minutes, or until the natural end of the meal. Mealtime included the child and parent in each parent/child dyad, as well as other parents and siblings typically present during the family's eating routine. Although other family members could be present, data was only collected on the consistent parent in each parent/child dyad who participated in parent coaching sessions.

2. **Free Play Activity:** Any open-ended play activity that the child was free to choose in the home. Free play activities took place anywhere in the home. These activities were unstructured and child led, and lasted for a maximum duration of 10 minutes. Free play activities did not involve technology (i.e., Ipad or other devices). Both the child and parent had to participate in the activity and could include other parents and siblings who were typically present during the family's play routine. Although other family members could be present, data was only collected on the consistent parent in each parent/child dyad who participated in parent coaching sessions.

Materials. All materials for this study were routinely used materials found in the child's home. For meal times, this included all utensils, dishware, and food routinely used during this time. For free play activities, materials included various toys and games that were routinely used by the child and their parent in their home during this time. Additionally, a video camera and laptop computer was used to analyze and code data collected during mealtime and free play activities.

Data Collection

Single Case Data. In order to meet single case design standards, data was collected for a minimum of three stable baseline data points before implementation of intervention (Kratochwill et al., 2012).

Dependent Variables:

- Fidelity of parent implementation of target skills
- Quality of parent and child interactions

Video recordings data collection. To identify fidelity of parent implementation of target skills taught during intervention, video recordings were taken twice per week for analysis. Two 10-minute video segments during a free play and mealtime activity were collected twice a week. These videos were collected by the researcher determining rate of parent implementation of target skills taught during parent coaching sessions. Each target skill taught during intervention was coded separately. Rate of implementation of target skills correctly implemented is reported. As previously identified, target skills taught in this intervention were identified as antecedent behavior strategies. Summaries of these target skills and data collection procedures are identified in Table 4.

Table 4.

Target Behavior Skills and Corresponding Data Collection Coding Procedures

Target Behavior Skill	Operational Definitions	Dependent Variable
1. Positive Reinforcement	Any instance of verbal or nonverbal social praise provided by the parent immediately following the occurrence of appropriate behavior. This can be verbal or nonverbal praise, such as a smile, head nod, or gesture.	Rate of Correct Implementation of Target Skills
2. Behavior Specific Praise	Any instance of verbal social praise provided by the parent following the occurrence of appropriate behavior that verbally identifies the correct or appropriate behavior that the child engaged in. (i.e., "Great job cleaning up your blocks!")	Rate of Correct Implementation of Target Skills
3. Providing Choices	When delivering an instruction or direction, parent incorporates opportunity for choice making within the demand. (i.e., "Do you want to clean up the puzzle or the blocks?")	Rate of Correct Implementation of Target Skills
4. Premack Principle	When delivering a low probability request or instruction, the parent uses the language "First/Then," and following the low probability request with a high probability request. (i.e., "First clean up your toys, then you can play on the Ipad.")	Rate of Correct Implementation of Target Skills
5. Closing the Teaching Loop	When an instruction/direction is delivered to the child, parent will complete the teaching loop by providing a consequence within 30 seconds (3 intervals) of the instruction/direction being placed. Consequences include reinforcement and/or prompting to follow through and complete instruction/direction given.	Rate of Correct Implementation of Target Skills

To examine the quality of interactions between parent and child, parent and child affect was coded in these videos of mealtime and free play activities using a rating scale. Ratings in this scale are identified in Appendix B. This rating scale was used at the end of each observation, identifying level of engagement in the following measures: 1) Happiness, 2) General Behavior, 3) Interest, and 4) Enthusiasm. Observers watched each video and then completed the rating scale using a 0-5 point rating. Scales used in this study were adapted from scales previously used by Koegel and his colleagues (Dunlap, 1984; Dunlap & Koegel, 1980a, 1980b; Koegel & Egel, 1979).

Interobserver agreement (IOA). Interobserver Agreement was collected using total count IOA (Cooper et al., 2007) on 20% of video recordings in each phase of intervention for all direct observation of parent implementation of target skills (Kratochwill et al., 2010).

Procedural fidelity. To assess procedural fidelity, a self-report checklist was completed during each parent coaching session to ensure reliable implementation across sessions. This checklist included all components of the parent coaching intervention, as identified in Appendix C. Additionally, a separate procedural fidelity checklist was used to ensure reliable implementation of each component of intervention for each week of intervention, as identified in Appendix D.

Survey Data. In order to meet the standards of high quality survey research, surveys were administered in an identical fashion (Krosnick, 1999). Additionally, in order to ensure accessibility for all families, all surveys were distributed in hard copies and completed using pen and paper. Surveys were given to parents to fill out independently, and returned to the researcher once completed.

Dependent Variables:

- Acceptability of intervention (Social Validity)
- Parent Stress Level

Social validity survey. To further explore parents' perceptions and impressions of the intervention, an anonymous social validity survey was administered following the completion of intervention. This survey was given to parents in an envelope and parents returned this survey back to the researcher in an additional provided envelope. Once all social validity surveys are collected from all participants, the anonymous surveys were analyzed and results were graphed.

This survey included a rating scale identifying the extent to which parents felt this intervention benefitted their child and family. Further, acceptability and usability was explored in this survey. As primary consumers of intervention, it was valuable to explore parents' opinions and acceptability of intervention. This survey aimed to identify what degree parents' liked or disliked intervention and how this intervention increased quality of life for their child, as well as other family members.

Parent stress levels. To determine the effect of implementation of this parent coaching treatment package on parent stress levels, the Parent Stress Index (Abidin, 1995) was used. This survey was given to parents to complete during baseline data collection, as well as following completion of intervention.

Procedure

Baseline

Prior to implementation of intervention, baseline data collection was completed. First, demographics for each participant and their family were collected. Next, the Parent

Stress Index (Abiden, 1995) survey was administered to all participating parents. In order to determine the quality of parent/child interactions, as well as any current parent implementation of behavioral strategies prior to implementation of intervention, 10-minute video segments during a free play and mealtime activity were collected twice per week. For each parent/child dyad baseline observations continued until a stable pattern of responding was achieved, following by the commencement of intervention.

Intervention

Parent coaching sessions were conducted by the researcher in each child's home, or mutually agreed upon location, with the child's parent and/or parents present during weekly coaching sessions. This parent coaching package lasted eight weeks, and taught different target skills rooted in PBS. The first week of intervention comprised of a parent meeting to explain intervention, assess family needs, and discuss any current child engagement in challenging behavior. Following the first week, a new skill was introduced every week, targeting a total of five target skills. Skills taught during intervention are identified and described previously in Table 4. The last two weeks of intervention comprised of a parent meeting where parents had the opportunity to ask any questions they may have or voice any concerns following completion of intervention. Data collected during intervention was shared with parents and recommendations going forward were also discussed.

Parent coaching sessions. Parent coaching sessions occurred weekly with each parent/child dyad. Each coaching session lasted approximately 45 minutes and was comprised of three different intervention components: 1.) Didactic/Information Sharing,

2.) Modeling Feedback, and 3.) Debrief. Adult learning principles targeted through the different components of parent coaching sessions are identified in Table 5.

Table 5.

Parent Coaching Intervention- Session Protocol

PART 1: 15 minute- Didactic/Information Sharing	Corresponding Adult Learning Principles
1. Target behavior is explained	✓ Create a Climate of Respect
2. Rationale provided	✓ Build on Experience
3. Examples and non examples	
4. Questions?	
PART 2: 15 minute- Modeling/Feedback	
1. Model target skills (as needed)	✓ Encourage Active Participation
2. Role-play with parents (as needed)	✓ Build on Experience
3. Collaborative problem solving	✓ Employ Collaborative Inquiry
4. Performance Based Feedback (as needed)	✓ Learn for Action
PART 3: 15 minute-Debrief	
1. Self Reflection	✓ Employ Collaborative Inquiry
2. Performance Based Feedback	✓ Learn for Action
3. Collaborative problem solving	✓ Empower Participants
4. Opportunity for questions	

Part 1. Didactic/ information sharing. In this component of intervention, the target skill for the week was introduced and rationale for implementation was discussed.

Examples and non-examples of the target skill were provided to ensure thorough understanding. These examples and non-examples were individualized, including examples that are specific to each child and their behavior. Then, parents were given the opportunity to ask any questions they may have about the identified target skill.

In all weeks, except for week 1, intervention began with a check in and recap of skills taught in the previous week. Any questions the parent had were answered; along with any problem solving occurred, seeking to increase fidelity of implementation will be identified and discussed.

Part 2. Modeling/feedback. This component of intervention provided opportunities for the interventionist and parent to practice the target skill taught in Part 1 of intervention as needed. First, the interventionist modeled target skills, and a role-play was completed if needed with the parent to provide additional opportunities for practice prior to implementation of the skills on their own. In this role-play, the parent acted as the child while the interventionist delivered the target skill. The parent and researcher then switched rolls, and the parent acted as the interventionist and the interventionist acted as the child. Parent/child dyads engaged in this role-play as needed for each skills, dependent upon their experience and level of competence and confidence in implementation. Finally, performance based feedback was provided to the parent, identifying components of intervention implemented correctly and incorrectly. For skills implemented incorrectly, performance based feedback was provided and suggestions to increase effectiveness of intervention were discussed.

Part 3. Debrief. In this component of intervention, parents were given the opportunity to ask any questions regarding implementation of skills taught during

coaching sessions. First, parents were encouraged to reflect on their implementation of target skills in the role-play and past experiences. Following this reflection, parents identified how implementation of the target skill has gone in the past and during the role-play, if completed. Performance based feedback was provided, and any necessary problem solving to increase fidelity of implementation was discussed. Finally, Part 3 of intervention ended with the opportunity for parents to ask any remaining questions that they may have regarding the target skill taught each week.

Intervention handouts. Handouts were provided parents during parent coaching sessions that provided additional information and the key points of each target skills taught in each intervention session. These handouts also included the session protocol to allow parents to prepare and follow along with the procedures and schedule of each parent coaching session. See Appendix E - J.

Text message/ email check-ins. To supplement intervention, text message or email check-ins occurred weekly. These text message/emails were designed to offer additional support during intervention, and answer any questions parents had regarding each week's target skill. If parents did not have any questions or concerns, the researcher let the parent know they did not have to respond and that intervention would continue the following week. An example of a text message check-in is depicted below.

Hello! I hope you guys are having a great week. I wanted to check in and see how some of the skills we talked about this week are going at home. How is everything going? Do you have any questions or concerns? If you do not have any questions or concerns, no need to respond. See you next week for our next coaching session.

Post Intervention Follow-Up

Following the completion of the intervention, the Parent Stress Index (Abiden, 1995) was administered again. Additionally, a social validity survey was also given to

parents. All surveys were completed by the parents independently and returned back to the researcher anonymously.

Single Case Research Design

For this study, a multiple baseline design was used to answer research questions 1-2, as outlined in Table 3.

Single case design seeks to demonstrate functional relations between manipulation of one variable, such as implementation of intervention, that ultimately creates change in the dependent variable, or the variable that is being measured for change (Horner & Kratochwill, 2012; Horner et al., 2005). Single case design differs from other research methodologies that include separate treatment and control intervention groups, because each participant serves as their own control (Cooper et al., 2007). Further, change seen in data collection during implementation of intervention is compared to baseline data taken prior to the commencement of intervention, ultimately serving as the control condition for comparison.

Data analysis. Visual analysis was used to identify any trends, patterns, and changes in data collected following onset of intervention (Parker & Hagan-Burke & Vannest, 2007). In order to analyze the effect size of the results of intervention, analysis of all single case design was performed, calculating the Percentage of Nonoverlapping Data (PND) (Scruggs & Mastropieri, 2013). This method was used to analyze all single case design data collection.

Survey Research

For this study, survey research methodology was utilized to answer research questions 3-4 outlined in Table 3.

Survey research seeks to draw conclusions from sample surveys and questionnaires about people's opinions and behaviors (Dillman, Smyth & Christian, 2014). Trends and patterns of responding can be identified through surveys, and conclusions can be drawn with confidence. These conclusions influence future research, further refining interventions to increase effectiveness. The two surveys utilized in this intervention examined parent stress levels, and parents' perceptions of intervention as a whole.

Data analysis. For the social validity survey administered to parents post completion of implementation of intervention, results of this survey was analyzed and graphed question by question. Each question was analyzed with all participants' responses, identifying any trends in responding.

To analyze the Parent Stress Index (Abiden, 1995) administered pre and post implementation of intervention, a t-test was completed to identify any statistical significance demonstrated between these two measures.

Results

Dependent variables reported in this study include rate of parent implementation of behavior strategies and quality of parent and child interactions. Data from pre and post intervention rating scales of parent stress levels is also reported. Lastly, social validity survey results are reported, identifying acceptability of intervention as a whole. These data measures are reported for the three parent-child dyads below.

Rate of Parent Implemented Intervention

Rate of parent-mediated intervention was collected to determine what effects the intervention had on parent behavior. Parent behavior was coded for the specific target

skills taught during intervention. Data were coded from videos collected during mealtime and free play activity conditions. Rate of implementation of each skill was recorded and graphed separately for each parent-child dyad.

All participants showed increases in implementation of behavior strategies taught during intervention, as identified in Figures 1 - 6. Similar trends were seen across participants for each behavior strategy taught during intervention. Implementation of positive reinforcement and behavior specific praise resulted in all participants showing an immediate increase in responding. Implementation of providing choices, Premack Principle, and closing the teaching loop, resulted in smaller increases in responding compared to the first two skills taught in intervention, positive reinforcement and behavior specific praise. The data collected during free play served as the primary dependent variable, and all decisions regarding implementation were dependent upon this measure.

Stephanie. Stephanie's data identified that this parent coaching treatment package was effective in increasing implementation across all target skills. Rate of implementation in free play and mealtime activities is shown in Figures 1 and 2.

Positive Reinforcement. Play. During baseline, Stephanie implemented low rates of positive reinforcement. Baseline rate of implementation was stable, ranging from 0 to 0.4 instances of positive reinforcement per minute across four days. During the four days of baseline data collection, Stephanie demonstrated the target skill in one instance. Following implementation of intervention, an immediate increase in level and trend was seen. Rate of implementation during the intervention phase ranged from 0 to 1.3 instances of positive reinforcement per minute. During intervention, Stephanie

demonstrated the target skill in every observation. The PND of rate of implementation of positive reinforcement was 42%. See Table 6.

Meal. During baseline, Stephanie did not implement any instances of positive reinforcement. Following implementation of intervention, an immediate effect and increasing trend was seen. Rate of implementation during intervention ranged from 0 to 0.9 instances per minute. During intervention, Stephanie demonstrated the target skill in every observation. The PND of rate of implementation of positive reinforcement was 92%. See Table 6.

Behavior Specific Praise. Play. During baseline, Stephanie implemented low rates of behavior specific praise. Baseline rate of implementation was stable, ranging from 0 to 0.4 instances per minute of behavior specific praise across six days. During baseline data collection, Stephanie demonstrated the target skill in three instances. Following implementation of intervention, an immediate increase in level and trend was seen. Rate of implementation during intervention ranged from 0 to 1.4 instances of behavior specific praise per minute. During 12 days of intervention, Stephanie demonstrated the target skill in 11 instances. The PND of rate of implementation of behavior specific praise was 40%. See Table 6.

Meal. During baseline, Stephanie implemented variable rates of behavior specific praise. Baseline rate of implementation showed some variability, ranging from 0 to 0.5 instances per minute of behavior specific praise across six days. During baseline data collection, Stephanie demonstrated the target skill in three instances. Intervention was implemented on day seven of data collection, as determined by the primary dependent variable measure. Following intervention, a consistent and stable increase in trend of rate

of implementation was demonstrated and sustained during intervention. Rate of implementation during intervention phase ranged from 0.2 to 0.5 instances of behavior specific praise per minute. During intervention, Stephanie demonstrated the target skill in every observation. The PND of rate of implementation of behavior specific praise was 0%. See Table 6.

Providing Choices. Play. During baseline, Stephanie did not implement any instances of providing choices. Following implementation of intervention, an immediate effect and an increased, but variable, trend was seen. Rate of implementation during the intervention phase ranged from 0 to 0.4 instances of providing choices per minute. During eight days of intervention, Stephanie demonstrated the target skill in four instances. The PND of rate of implementation of providing choices was 50%. See Table 6.

Meal. During baseline, Stephanie did not implement any instances of providing choices. Following implementation of intervention, an increase in trend and level was seen towards the end of this phase. Rate of implementation during the intervention phase was variable, ranging from 0 to 0.3 instances of providing choices per minute. During eight days of intervention, Stephanie demonstrated the target skill in three instances. The PND of rate of implementation of providing choices was 38%. See Table 6.

Premack Principle. Play. During baseline, Stephanie implemented low rates of implementation of the Premack Principle. Further, baseline rate of implementation was stable, with 0 to 0.2 instances of implementation of the Premack Principle per minute across ten days. During baseline data collection, Stephanie demonstrated the target skill in one instance. Following implementation of intervention, an immediate effect and an

increasing, stable trend was demonstrated. Rate of implementation during the intervention phase ranged from 0 to 0.3 instances of the Premack Principle per minute. During six days of intervention, Stephanie demonstrated the target skill in five instances. The PND of rate of implementation of the Premack Principle was 33%. See Table 6.

Meal. During baseline, Stephanie did not implement any instances of implementation of the Premack Principle during baseline data collection. Following implementation of intervention, an immediate increase in trend was seen and data demonstrated variable, but higher rates of implementation. This increase in implementation resulted in increases demonstrated in level. Rate of implementation during the intervention phase ranged from 0 to 0.1 instances of Premack Principle per minute. During six days of intervention, Stephanie demonstrated the target skill in four instances. The PND of rate of implementation of the Premack Principle was 67%. See Table 6.

Closing the Teaching Loop. Play. During baseline, Stephanie implemented low rates of closing the teaching loop, demonstrating 0 to 0.2 instances per minute across 12 days. During baseline data collection, Stephanie demonstrated the target skill in two instances. Following implementation of intervention, an immediate increase was seen in level and a stable trend was demonstrated. Rate of implementation during the intervention phase ranged from 0 to 0.3 instances of closing the teaching loop per minute. During intervention, Stephanie demonstrated the target skill in every observation. The PND of rate of implementation of closing the teaching loop was 25%. See Table 6.

Meal. During baseline, Stephanie implemented variable rates of implementation of closing the teaching loop, demonstrating 0 to 0.7 instances of closing the teaching loop

throughout all of baseline data collection. During 12 days of baseline data collection, Stephanie demonstrated the target skill in two instances. Following implementation of intervention, higher rates of consistent, stable implementation of closing the teaching loop was demonstrated. Rate of implementation during the intervention phase was variable, ranging from 0 to 0.2 instances of closing the teaching loop per minute. During four days of intervention, Stephanie demonstrated the target skill in two instances. The PND of rate of implementation of closing the teaching loop was 0%. See Table 6.

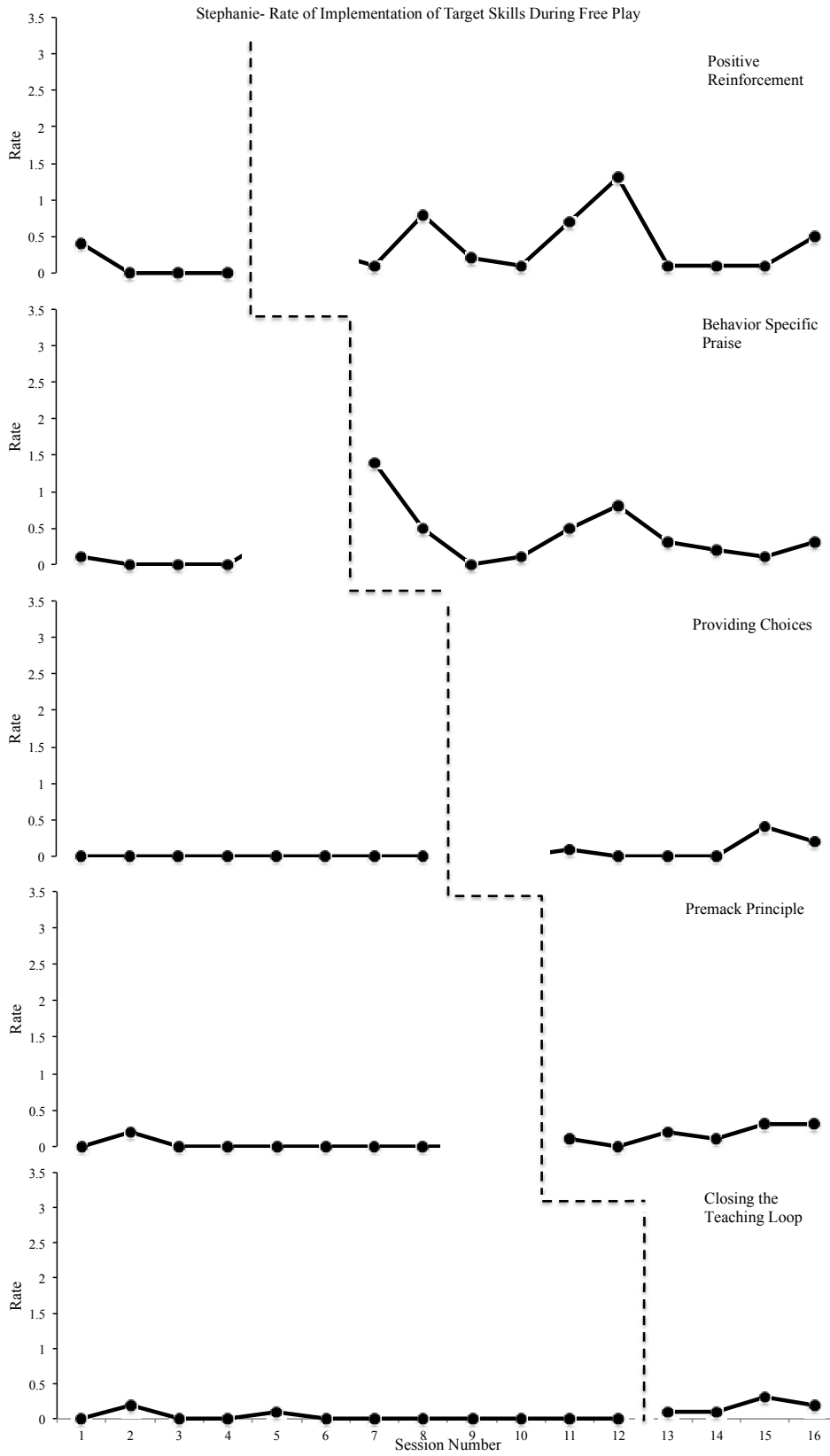


Figure 1. Stephanie- Rate of Implementation of Target Skills During Free Play

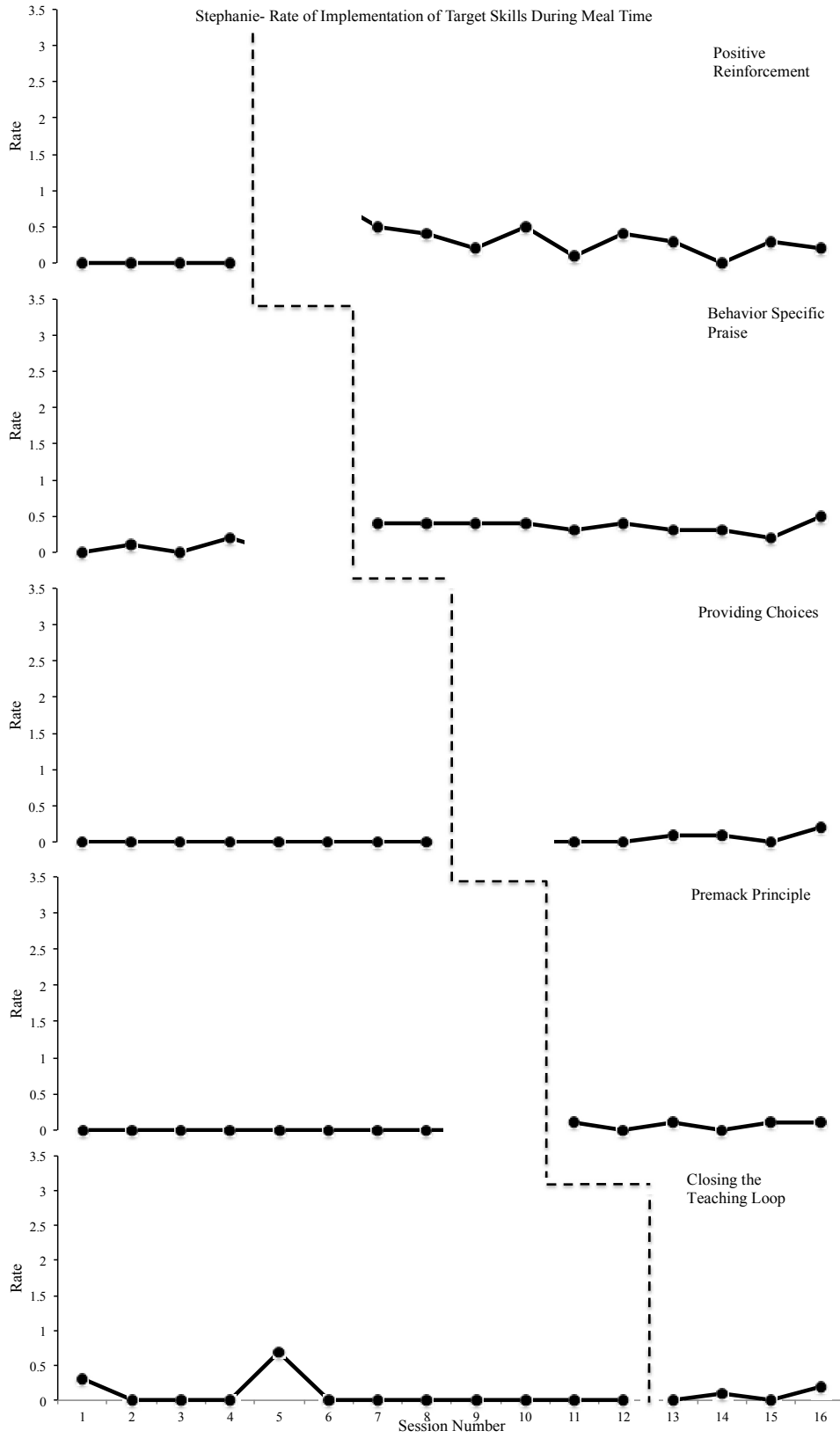


Figure 2. Stephanie- Rate of Implementation of Target Skills During Mealtime

Table 6

Stephanie- Percentage of Non-Overlapping Data (PND) of Fidelity of Implementation

Target Skill	Free Play	Meal
Positive Reinforcement	42%	92%
Behavior Specific Praise	40%	0%
Providing Choices	50%	38%
Premack Principle	33%	67%
Closing the Teaching Loop	25%	0%
Total Across All Target Skills	40%	45%

Jessica. Jessica's data identified that this parent coaching treatment package was effective in increasing implementation of these skills across all skills taught during intervention. Rate of implementation in free play and mealtime activities is shown in Figures 3 and 4.

Positive Reinforcement. Play. During baseline, Jessica implemented low rates of positive reinforcement. Baseline rate of implementation was stable, ranging from 0 to 0.5 instances of positive reinforcement per minute across five days. During the five days of baseline data collection, Jessica demonstrated the target skill in four instances. Following implementation of intervention, an immediate increase in level and trend was seen. Rate of implementation during the intervention phase ranged from 0.7 to 2.3 instances of positive reinforcement per minute. During intervention, Jessica demonstrated the target skill in every observation. The PND of rate of implementation of positive reinforcement was 83%. See Table 7.

Meal. During baseline, Jessica implemented low rates of positive reinforcement. Baseline rate of implementation was stable, ranging from 0.2 to 0.7 instances of positive reinforcement per minute across five days. During the five days of baseline data collection, Jessica demonstrated the target skill in all instances. Following implementation of intervention, an immediate effect and increasing trend was seen. Rate of implementation during intervention ranged from 0.8 to 1.2 instances per minute. During intervention, Jessica demonstrated the target skill in every observation. The PND of rate of implementation of positive reinforcement was 100%. See Table 7.

Behavior Specific Praise. Play. During baseline, Jessica implemented low rates of behavior specific praise. Baseline rate of implementation was stable, ranging from 0 to 0.4 instances per minute of behavior specific praise across seven days. During the seven days of baseline data collection, Jessica demonstrated the target skill in five instances. Following implementation of intervention, an immediate increase in level and trend was seen. Rate of implementation during the intervention phase ranged from 0.3 to 1.9 instances of behavior specific praise per minute. During intervention, Jessica demonstrated the target skill in every observation. The PND of rate of implementation of behavior specific praise was 50%. See Table 7.

Meal. During baseline, Jessica implemented low rates of behavior specific praise. Baseline rate of implementation showed some variability, ranging from 0 to 0.3 instances per minute of behavior specific praise across six days. During the six days of baseline data collection, Jessica demonstrated the target skill in four instances. Intervention was implemented on day seven of data collection, as determined by the primary dependent variable measure. Following intervention, an immediate increase in trend and level was

seen. Rate of implementation during intervention phase ranged from 0.4 to 1.2 instances of behavior specific praise per minute. During intervention, Jessica demonstrated the target skill in every observation. The PND of rate of implementation of behavior specific praise was 100%. See Table 7.

Providing Choices. Play. During baseline, Jessica implemented low rates of providing choices. Baseline rate of implementation was stable, ranging from 0 to 0.5 instances per minute of providing choices across nine days. During the nine days of baseline data collection, Jessica demonstrated target skill in six instances. Following implementation of intervention, an immediate increase was seen in level and trend. Rate of implementation during the intervention phase ranged from 0.6 to 1.7 instances of providing choices per minute. During intervention, Jessica demonstrated the target skill in every observation. The PND of rate of implementation of providing choices was 100%. See Table 7.

Meal. During baseline, Jessica implemented low rates of providing choices. Baseline rate of implementation ranged from 0 to 0.7 instances per minute of providing choices. During the eight days of baseline data collection, Jessica demonstrated the target skill in six instances. Intervention was implemented on day nine, as determined by the primary dependent variable. Following implementation of intervention, an increase was seen in steady state responding. Rate of implementation during the intervention ranged from 0.2 to 0.8 instances of providing choices per minute. During intervention, Jessica demonstrated the target skill in every observation. The PND of rate of implementation of providing choices was 13%. See Table 7.

Premack Principle. Play. During baseline, Jessica implemented low rates of implementation of the Premack Principle. Baseline rate of implementation was stable, ranging from 0 to 0.2 instances of implementation of the Premack Principle per minute across eleven days. During the 11 days of baseline data collection, Jessica demonstrated the target skill in three instances. Following implementation of intervention, an immediate effect and increase in level and trend was seen. Rate of implementation during the intervention phase ranged from 0 to 1.7 instances of the Premack Principle per minute. During six days of intervention, Jessica demonstrated the target skill in four instances. The PND of rate of implementation of the Premack Principle was 33%. See Table 7.

Meal. During baseline, Jessica implemented low rates of implementation of the Premack Principle. Baseline rate of implementation was stable, with 0 to 0.4 instances of the Premack Principle per minute across 11 days. During the 11 days of baseline data collection, Jessica demonstrated the target skill in one instances. Following implementation of intervention, an immediate increase in level and trend was seen. Rate of implementation during the intervention phase ranged from 0 to 0.8 instances of Premack Principle per minute. During six days of intervention, Jessica demonstrated the target skill in five instances. The PND of rate of implementation of the Premack Principle was 17%. See Table 7.

Closing the Teaching Loop. Play. During baseline, Jessica implemented stable rates of closing the teaching loop, demonstrating 0 to 0.7 instances per minute across 13 days. During the 13 days of baseline data collection, Jessica demonstrated the target skill in nine instances. Following implementation of intervention, Jessica continued

implementing intervention at a stable rate, reaching steady state responding. Rate of implementation during the intervention phase ranged from 0.2 to 0.3 instances of closing the teaching loop per minute. During intervention, Jessica demonstrated the target skill in every observation. The PND of rate of implementation of closing the teaching loop was 0%. See Table 7.

Meal. During baseline, Jessica implemented stable rates of implementation of closing the teaching loop, demonstrating 0 to 0.6 instances of closing the teaching loop throughout all baseline data collection. During the 13 days of baseline data collection, Jessica demonstrated the target skill in 11 instances. Following implementation of intervention, stable implementation continued, as well as demonstrated of an increase in level. Rate of implementation during the intervention phase was variable, ranging from 0 to 0.6 instances of closing the teaching loop per minute. During four days of intervention, Jessica demonstrated the target skill in three instances. The PND of rate of implementation of closing the teaching loop was 0%. See Table 7.

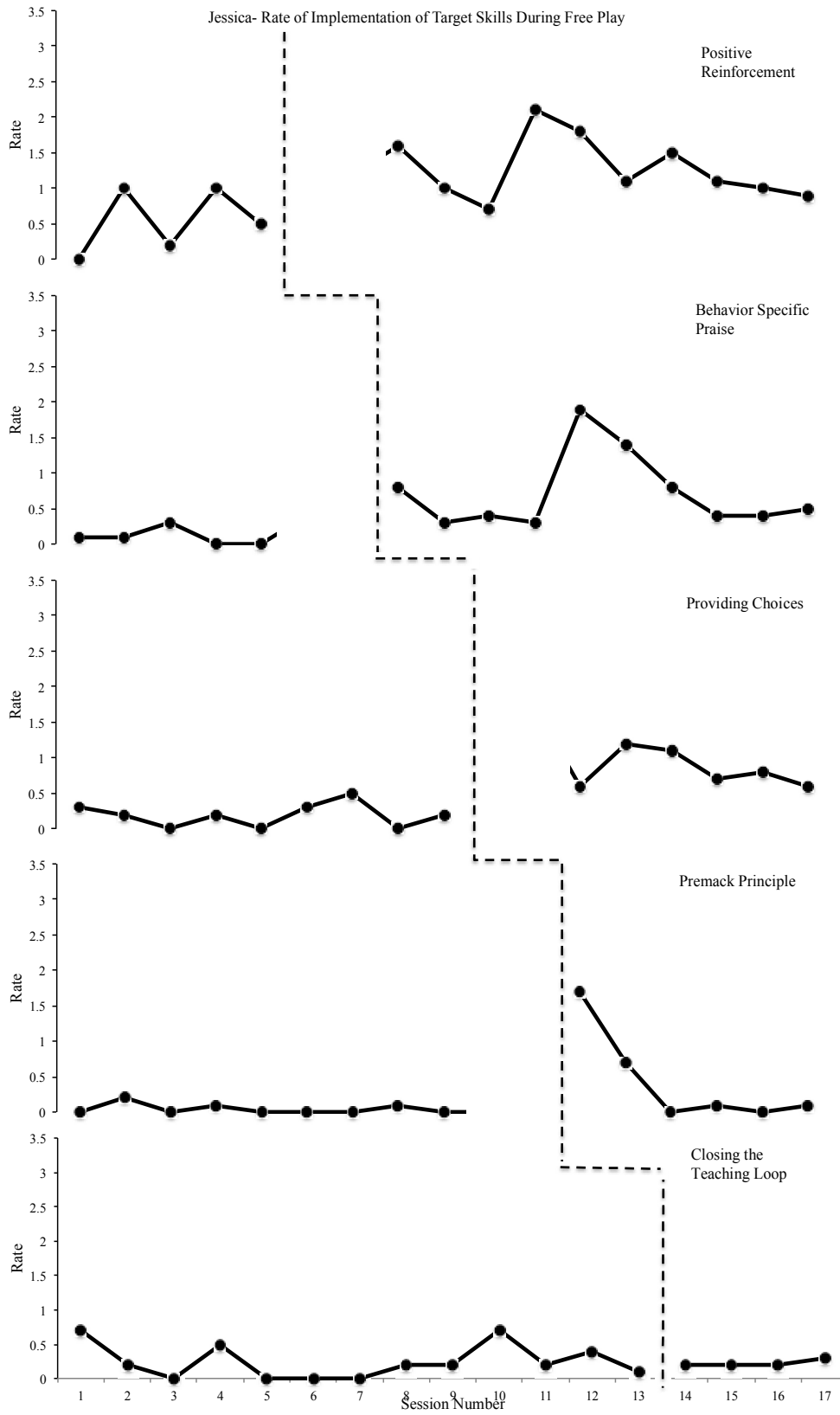


Figure 3. Jessica- Rate of Implementation of Target Skills During Free Play

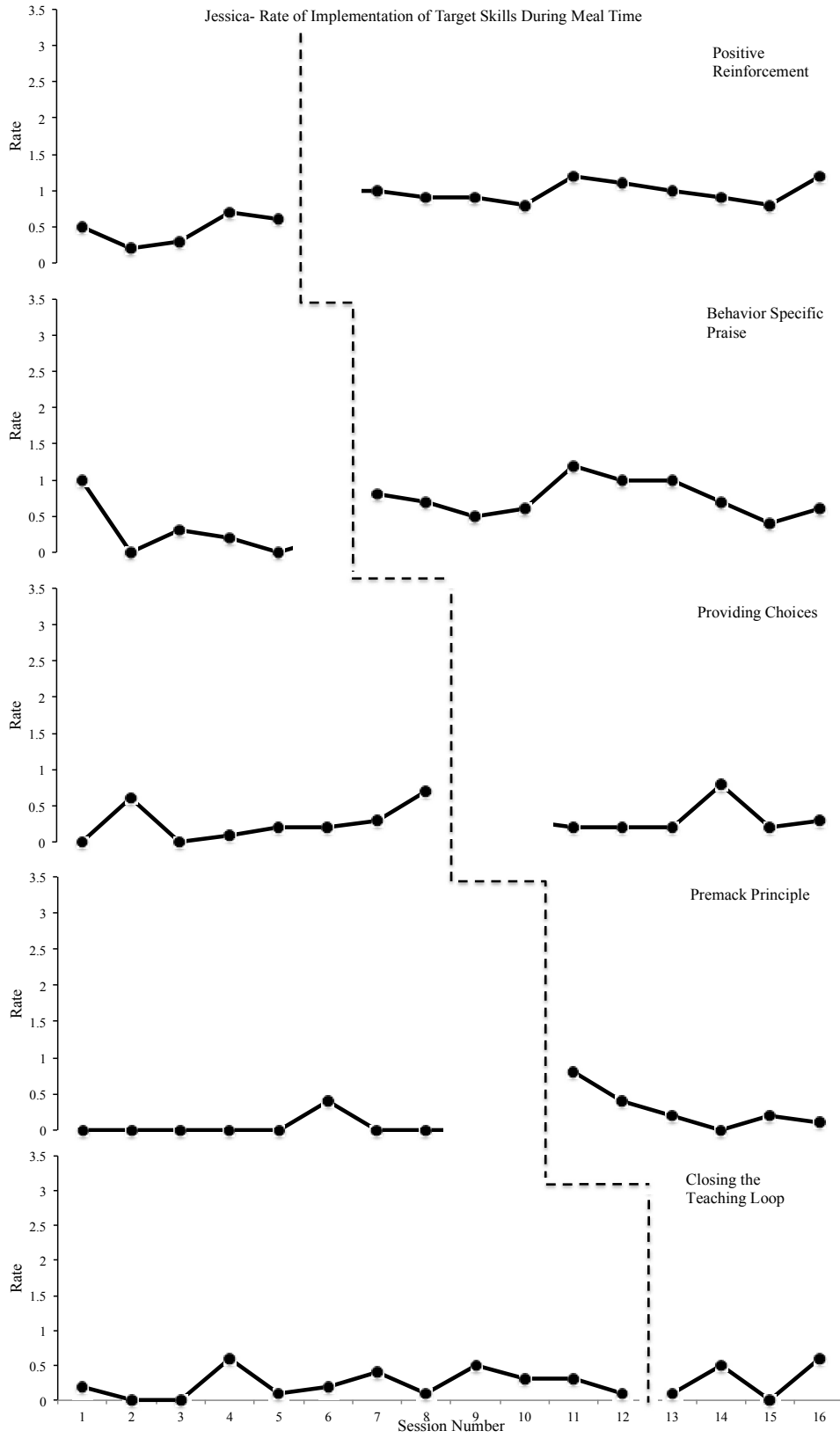


Figure 4. Jessica- Rate of Implementation of Target Skills During Mealtime

Table 7

Jessica- Percentage of Non-Overlapping Data (PND) of Fidelity of Implementation

Target Skill	Free Play	Meal
Positive Reinforcement	83%	100%
Behavior Specific Praise	50%	100%
Providing Choices	100%	13%
Premack Principle	33%	17%
Closing the Teaching Loop	0%	0%
Total Across All Target Skills	63%	59%

Peter. Peter's data identified that this parent coaching treatment package was effective in increasing implementation of these skills across all skills taught during intervention. Rate of implementation in free play and mealtime activities is shown in Figures 5 and 6.

Positive Reinforcement. Play. During baseline, Peter implemented low rates of positive reinforcement. Baseline rate of implementation ranged from 0 to 0.6 instances of positive reinforcement per minute across seven days. During the seven days of baseline data collection, Peter demonstrated the target skill in four instances. Following implementation of intervention, an immediate increase in level and trend was seen. Rate of implementation during the intervention phase ranged from 0.3 to 2.3 instances of positive reinforcement per minute. During intervention, Peter demonstrated the target skills in every observation. The PND of rate of implementation of positive reinforcement was 70%. See Table 8.

Meal. During baseline, Peter implemented low rates of positive reinforcement. Baseline rate of implementation ranged from 0 to 0.4 instances of positive reinforcement per minute across seven days. During the seven days of baseline data collection, Peter demonstrated the target skill in four instances. Following implementation of intervention, an immediate effect and increasing trend was seen. Rate of implementation during intervention ranged from 0 to 1.4 instances per minute. During ten days of intervention, Peter demonstrated the target skill in nine instances. The PND of rate of implementation of positive reinforcement was 20%. See Table 8.

Behavior Specific Praise. Play. During baseline, Peter implemented low rates of behavior specific praise. Baseline rate of implementation was stable, ranging from 0 to 1.1 instances per minute of behavior specific praise across nine days. During the nine days of baseline data collection, Peter demonstrated the target skill in six instances. Following implementation of intervention, an immediate increase in level and trend was seen. Rate of implementation during intervention ranged from 0.7 to 2.5 instances of behavior specific praise per minute. During intervention, Peter demonstrated the target skills in every observation. The PND of rate of implementation of behavior specific praise was 75%. See Table 8.

Meal. During baseline, Peter implemented variable rates of behavior specific praise. Baseline rate of implementation showed some variability, ranging from 0 to 1.3 instances per minute of behavior specific praise across six days. During the nine days of baseline data collection, Peter demonstrated the target skill in five instances. Intervention was implemented on day 10 of intervention, as determined by the primary dependent variable measure. Following intervention, a consistent and stable increase in trend was

demonstrated and sustained during intervention. Rate of implementation during intervention phase ranged from 0.5 to 1.6 instances of behavior specific praise per minute. During intervention, Peter demonstrated the target skills in every observation. The PND of rate of implementation of behavior specific praise was 13%. See Table 8.

Providing Choices. Play. During baseline, Peter implemented low rates of providing choices. Baseline rate of implementation was stable, ranging from 0 to 0.1 instances per minute of providing choices across 11 days. During the 11 days of baseline data collection, Peter demonstrated the target skill in one instance. Following implementation of intervention, an immediate increase in level and trend was seen. Rate of implementation during the intervention phase ranged from 0.1 to 0.4 instances of providing choices per minute. During intervention, Peter demonstrated the target skills in every observation. The PND of rate of implementation of providing choices was 83%. See Table 8.

Meal. During baseline, Peter implemented low rates of providing choices. Baseline rate of implementation ranged from 0 to 0.4 instances per minute of providing choices across 11 days. During the 11 days of baseline data collection, Peter demonstrated the target skill in two instances. Following implementation of intervention, an immediate increase in trend and level was seen. Rate of implementation during the intervention phase ranged from 0 to 0.9 instances of providing choices per minute. During six days of intervention, Peter demonstrated the target skill in five instances. The PND of rate of implementation of providing choices was 17%. See Table 8.

Premack Principle. Play. Peter did not implement any instances of implementation of the Premack Principle during baseline data collection. Following

implementation of intervention, an immediate increase in level and trend was demonstrated. Rate of implementation during the intervention phase ranged from 0 to 0.6 instances of the Premack Principle per minute. During four days of intervention, Peter demonstrated the target skill in three instances. The PND of rate of implementation of the Premack Principle was 75%. See Table 8.

Meal. During baseline, Peter implemented low rates of the Premack Principle. Baseline rate of implementation ranged from 0 to 0.6 instances per minute of the Premack Principle. During the 13 days of baseline data collection, Peter demonstrated the target skill in 2 instances. Following implementation of intervention, an immediate increase in level and trend was seen. Rate of implementation during the intervention phase ranged from 0.1 to 1.9 instances of Premack Principle per minute. During intervention, Peter demonstrated the target skills in every observation. The PND of rate of implementation of the Premack Principle was 25%. See Table 8.

Closing the Teaching Loop. *Play.* Peter did not implement any instances of implementation of closing the teaching loop during baseline data collection. Following implementation of intervention, an increase in level and trend was seen towards the end of intervention. Rate of implementation during the intervention phase ranged from 0 to 0.1 instances of the closing the teaching loop per minute. During three days of intervention, Peter demonstrated the target skill in two instances. The PND of rate of implementation of closing the teaching loop was 33%. See Table 8.

Meal. During baseline, Peter implemented low rates of implementation of closing the teaching loop, demonstrating 0 to 0.4 instances of closing the teaching loop throughout all of baseline data collection. During the 14 days of baseline data collection,

Peter demonstrated the target skill in five instances. Following implementation of intervention, an immediate increase in level and trend was seen. Rate of implementation during intervention was variable, ranging from 0.3 to 0.9 instances of closing the teaching loop per minute. During intervention, Peter demonstrated the target skills in every observation. The PND of rate of implementation of closing the teaching loop was 3%. See Table 8.

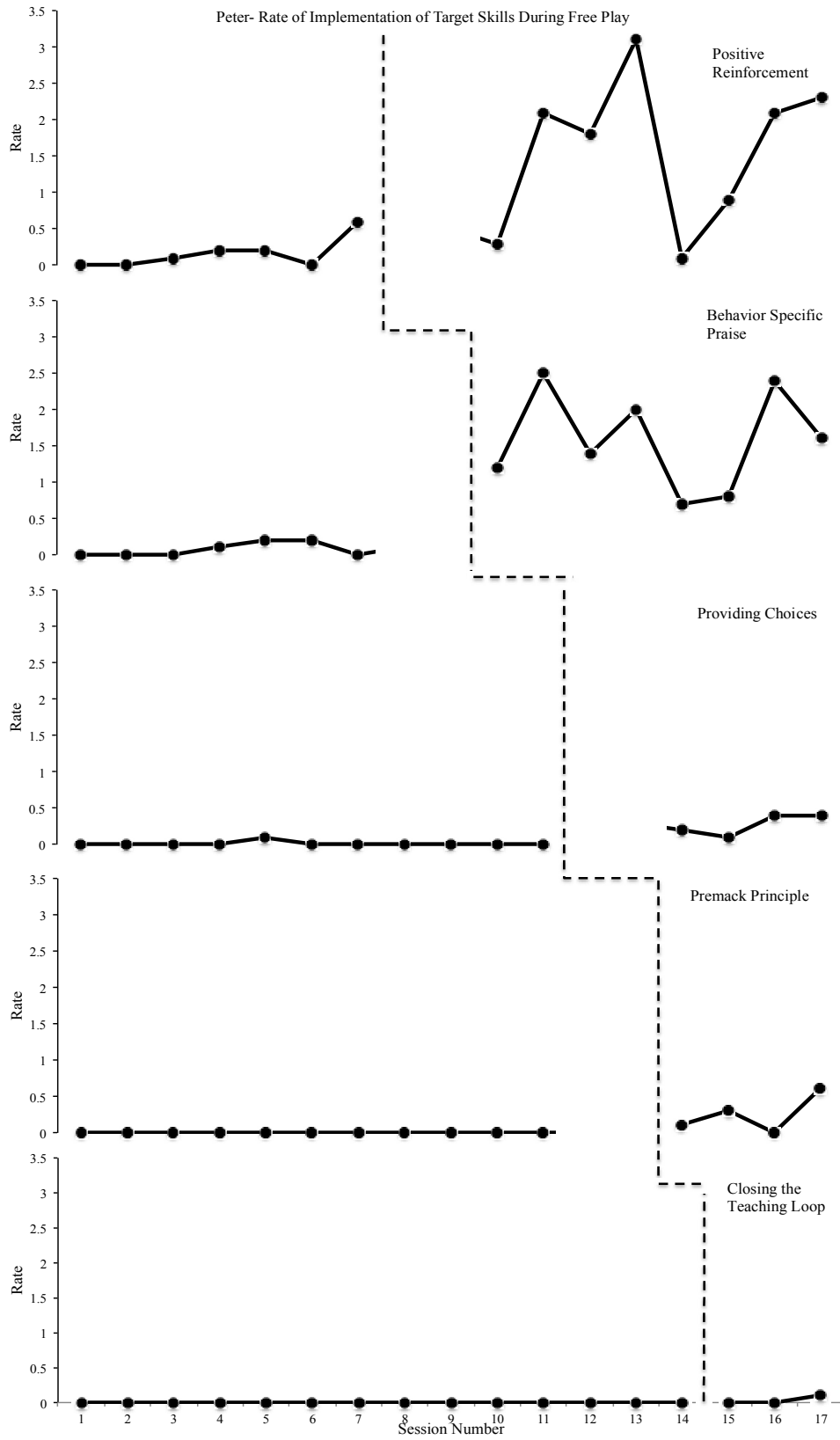


Figure 5. Peter-Rate of Implementation of Target Skills During Free Play

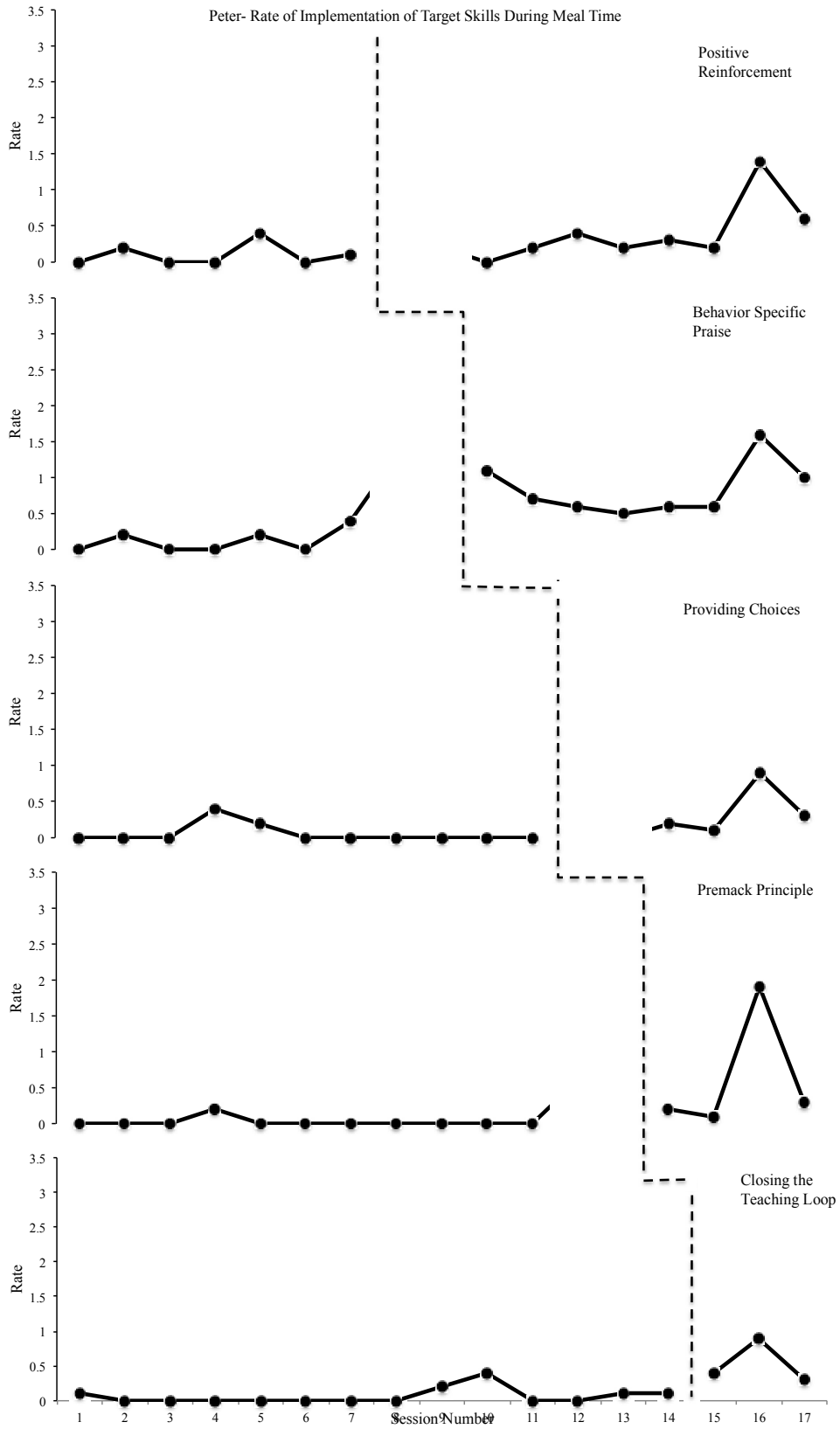


Figure X. Peter- Rate of Implementation of Target Skills During Meal Time

Table 8

Peter- Percentage of Non-Overlapping Data (PND) of Fidelity of Implementation

Target Skill	Free Play	Meal
Positive Reinforcement	70%	20%
Behavior Specific Praise	75%	13%
Providing Choices	83%	17%
Premack Principle	75%	25%
Closing the Teaching Loop	33%	33%
Total Across All Target Skills	74%	19%

Summative PND was calculated across all three participants for each target skill in both free play and mealtime data collection condition settings. See Table 9.

Table 9

Summative Percentage of Non-Overlapping data (PND) of Fidelity of Implementation Across All Participants

Target Skill	Free Play	Meal
Positive Reinforcement	65%	40%
Behavior Specific Praise	54%	39%
Providing Choices	71%	21%
Premack Principle	44%	38%
Closing the Teaching Loop	18%	9%

Summative PND was calculated for intervention as a whole across all three participants. PND across all target skills and participants for free play was 56%. PND across all target skills and participants for mealtime was 32%.

Frequency of days in which parents did not engage in any instances of implementation of target skills was analyzed for each participant in both free play and mealtime data collection settings. Pre and Post intervention measures in free play are shown in Table 10. Pre and Post intervention measures in mealtime are shown in Table 11.

Table 10

Frequency of Days Parents Demonstrated Zero Rates of Implementation of Target Skills During Free Play

	Stephanie		Jessica		Peter	
	Pre	Post	Pre	Post	Pre	Post
Positive Reinforcement	3	0	1	0	3	0
Behavior Specific Praise	3	1	2	0	4	0
Providing Choices	8	4	3	0	10	0
Premack Principle	9	1	8	2	13	1
Closing the Teaching Loop	10	0	4	0	14	2

Table 11

Frequency of Days Parents Demonstrated Zero Rates of Implementation of Target Skills During Mealtime

	Stephanie		Jessica		Peter	
	Pre	Post	Pre	Post	Pre	Post
Positive Reinforcement	4	0	0	0	4	1
Behavior Specific Praise	3	0	2	0	4	0
Providing Choices	8	5	2	0	9	1
Premack Principle	10	2	10	1	11	0
Closing the Teaching Loop	10	2	2	1	9	0

Quality of Parent/Child Interactions

The quality of parent-child interactions was collected to understand if parent-mediated implementation of target skills taught during intervention increased the quality of interactions for each parent and child dyad during meal and play times. Quality of interactions was recorded separately for each child and parent, and the data was analyzed by comparing rating averages pre and post implementation of intervention.

For all participants, data is reported during meal and free play activities. These measures were secondary data collection measures, and behavioral intervention decisions were not based upon this collection of data. As previously identified, an adapted coding scale from literature was used identifying parent and child levels of happiness, general behavior, interest, and enthusiasm (Dunlap, 1984; Dunlap & Koegel, 1980a, 1980b; Koegel & Egel, 1979). Affect and interaction ratings are reported for the parent in each

dyad, followed by child ratings. Averages of these ratings are reported for baseline and intervention phases. Decimals are rounded to the nearest hundredth place.

Stephanie.

The quality of parent and child interactions are reported for both free play and mealtime activities.

Free play activity. Stephanie's average ratings for baseline and intervention across all four measures during free play activities are reported. See Table 12.

Happiness. Stephanie engaged in an average rating of 3.75 during baseline data collection. Following implementation of intervention, Stephanie engaged in an average rating of 3.83.

General behavior. Stephanie engaged in an average rating of 4.25 during baseline data collection. Following implementation of intervention, Stephanie engaged in an average rating of 4.17.

Interest. Stephanie engaged in an average rating of 4.25 during baseline data collection. Following implementation of intervention, Stephanie engaged in an average rating of 4.17.

Enthusiasm. Stephanie engaged in an average rating of 4.25 during baseline data collection. Following implementation of intervention, Stephanie engaged in an average rating of 4.25.

Table 12

Stephanie- Average Ratings for Quality of Interactions in Free Play

Measure	Baseline	Intervention
Happiness	3.75	3.83
General Behavior	4.25	4.17
Interest	4.25	4.17
Enthusiasm	4.25	4.25

Mealtime. Stephanie's average ratings for baseline and intervention across all four measures during mealtime are reported. See Table 13.

Happiness. Stephanie engaged in an average rating of 3.5 during baseline data collection. Following implementation of intervention, Stephanie engaged in an average rating of 3.25.

General behavior. Stephanie engaged in an average rating of 4.75 during baseline data collection. Following implementation of intervention, Stephanie engaged in an average rating of 3.75.

Interest. Stephanie engaged in an average rating of 3.75 during baseline data collection. Following implementation of intervention, Stephanie engaged in an average rating of 4.08.

Enthusiasm. Stephanie engaged in an average rating of 3.75 during baseline data collection. Following implementation of intervention, Stephanie engaged in an average rating of 3.75.

Table 13

Stephanie- Average Ratings for Quality of Interactions in Meal Time

Measure	Baseline	Intervention
Happiness	3.5	3.25
General Behavior	4.75	3.75
Interest	3.75	4.08
Enthusiasm	3.75	3.75

Henry.

The quality of parent and child interactions are reported for both free play and mealtime activities.

Free play activity. Henry's average ratings for baseline and intervention across all four measures during free play activities are reported. See Table 14.

Happiness. Henry engaged in an average rating of 3.5 during baseline data collection. Following implementation of intervention, Henry engaged in an average rating of 3.67.

General behavior. Henry engaged in an average rating of 4.25 during baseline data collection. Following implementation of intervention, Henry engaged in an average rating of 4.25.

Interest. Henry engaged in an average rating of 3.75 during baseline data collection. Following implementation of intervention, Henry engaged in an average rating of 4.33.

Enthusiasm. Henry engaged in an average rating of 4.0 during baseline data collection. Following implementation of intervention, Henry engaged in an average rating of 4.08.

Table 14

Henry- Average Ratings for Quality of Interactions in Free Play

Measure	Baseline	Intervention
Happiness	3.5	3.67
General Behavior	4.25	4.25
Interest	3.75	4.33
Enthusiasm	4.0	4.08

Mealtime. Henry's average ratings for baseline and intervention across all four measures during mealtime are reported. See Table 15.

Happiness. Henry engaged in an average rating of 3.0 during baseline data collection. Following implementation of intervention, Henry engaged in an average rating of 3.08.

General behavior. Henry engaged in an average rating of 4.25 during baseline data collection. Following implementation of intervention, Henry engaged in an average rating of 3.75.

Interest. Henry engaged in an average rating of 3.5 during baseline data collection. Following implementation of intervention, Henry engaged in an average rating of 3.92.

Enthusiasm. Henry engaged in an average rating of 3.5 during baseline data collection. Following implementation of intervention, Henry engaged in an average rating of 3.75.

Table 15

Henry- Average Ratings for Quality of Interactions in Meal Time

Measure	Baseline	Intervention
Happiness	3.0	3.08
General Behavior	4.25	3.75
Interest	3.5	3.92
Enthusiasm	3.5	3.72

Jessica

The quality of parent and child interactions are reported for both free play and mealtime activities.

Free play activity. Jessica's average ratings for baseline and intervention across all four measures during free play activities are reported. See Table 16.

Happiness. Jessica engaged in an average rating of 4.6 during baseline data collection. Following implementation of intervention, Jessica engaged in an average rating of 4.58.

General behavior. Jessica engaged in an average rating of 4.8 during baseline data collection. Following implementation of intervention, Jessica engaged in an average rating of 4.67.

Interest. Jessica engaged in an average rating of 4.6 during baseline data collection. Following implementation of intervention, Jessica engaged in an average rating of 4.67.

Enthusiasm. Jessica engaged in an average rating of 5.0 during baseline data collection. Following implementation of intervention, Jessica engaged in an average rating of 4.67.

Table 16

Jessica- Average Ratings for Quality of Interactions in Free Play

Measure	Baseline	Intervention
Happiness	4.6	4.58
General Behavior	4.8	4.67
Interest	4.6	4.67
Enthusiasm	5.0	4.67

Mealtime. Jessica's average ratings for baseline and intervention across all four measures during mealtime are reported. See Table 17.

Happiness. Jessica engaged in an average rating of 4.4 during baseline data collection. Following implementation of intervention, Jessica engaged in an average rating of 4.63.

General behavior. Jessica engaged in an average rating of 4.6 during baseline data collection. Following implementation of intervention, Jessica engaged in an average rating of 4.45.

Interest. Jessica engaged in an average rating of 4.2 during baseline data collection. Following implementation of intervention, Jessica engaged in an average rating of 4.45.

Enthusiasm. Jessica engaged in an average rating of 4.6 during baseline data collection. Following implementation of intervention, Jessica engaged in an average rating of 4.72.

Table 17

Jessica- Average Ratings for Quality of Interactions in Meal Time

Measure	Baseline	Intervention
Happiness	4.4	4.63
General Behavior	4.6	4.45
Interest	4.2	4.45
Enthusiasm	4.6	4.72

Ryan

The quality of parent and child interactions are reported for both free play and mealtime activities.

Free play activity. Ryan's average ratings for baseline and intervention across all four measures during free play activities are reported. See Table 18.

Happiness. Ryan engaged in an average rating of 3.8 during baseline data collection. Following implementation of intervention, Ryan engaged in an average rating of 3.83.

General behavior. Ryan engaged in an average rating of 3.4 during baseline data collection. Following implementation of intervention, Ryan engaged in an average rating of 3.75.

Interest. Ryan engaged in an average rating of 3.8 during baseline data collection. Following implementation of intervention, Ryan engaged in an average rating of 4.16.

Enthusiasm. Ryan engaged in an average rating of 3.6 during baseline data collection. Following implementation of intervention, Ryan engaged in an average rating of 4.08.

Table 18

Ryan- Average Ratings for Quality of Interactions in Free Play

Measure	Baseline	Intervention
Happiness	3.8	3.83
General Behavior	3.4	3.75
Interest	3.8	4.16
Enthusiasm	3.6	4.08

Mealtime. Ryan's average ratings for baseline and intervention across all four measures during mealtime are reported. See Table 19.

Happiness. Ryan engaged in an average rating of 3.8 during baseline data collection. Following implementation of intervention, Ryan engaged in an average rating of 3.9.

General behavior. Ryan engaged in an average rating of 3.2 during baseline data collection. Following implementation of intervention, Ryan engaged in an average rating of 3.9.

Interest. Ryan engaged in an average rating of 3.2 during baseline data collection. Following implementation of intervention, Ryan engaged in an average rating of 4.18.

Enthusiasm. Ryan engaged in an average rating of 2.8 during baseline data collection. Following implementation of intervention, Ryan engaged in an average rating of 4.09.

Table 19

Ryan- Average Ratings for Quality of Interactions in Meal Time

Measure	Baseline	Intervention
Happiness	3.8	3.9
General Behavior	3.2	3.9
Interest	3.2	4.18
Enthusiasm	2.8	4.09

Peter

The quality of parent and child interactions are reported for both free play and mealtime activities.

Free play activity. Peter's average ratings for baseline and intervention across all four measures during free play activities are reported. See Table 20.

Happiness. Peter engaged in an average rating of 2.42 during baseline data collection. Following implementation of intervention, Peter engaged in an average rating of 4.5.

General behavior. Peter engaged in an average rating of 2.85 during baseline data collection. Following implementation of intervention, Peter engaged in an average rating of 4.1.

Interest. Peter engaged in an average rating of 2.0 during baseline data collection. Following implementation of intervention, Peter engaged in an average rating of 4.6.

Enthusiasm. Peter engaged in an average rating of 2.14 during baseline data collection. Following implementation of intervention, Peter engaged in an average rating of 4.6.

Table 20

Peter- Average Ratings for Quality of Interactions in Free Play

Measure	Baseline	Intervention
Happiness	2.42	4.5
General Behavior	2.85	4.1
Interest	2.0	4.6
Enthusiasm	2.14	4.6

Mealtime. Peter's average ratings for baseline and intervention across all four measures during mealtime are reported. See Table 21.

Happiness. Peter engaged in an average rating of 2.57 during baseline data collection. Following implementation of intervention, Peter engaged in an average rating of 4.1.

General behavior. Peter engaged in an average rating of 3.0 during baseline data collection. Following implementation of intervention, Peter engaged in an average rating of 4.2.

Interest. Peter engaged in an average rating of 3.14 during baseline data collection. Following implementation of intervention, Peter engaged in an average rating of 4.1.

Enthusiasm. Peter engaged in an average rating of 2.71 during baseline data collection. Following implementation of intervention, Peter engaged in an average rating of 4.0.

Table 21.

Peter- Average Ratings for Quality of Interactions in Meal Time

Measure	Baseline	Intervention
Happiness	2.57	4.1
General Behavior	3.0	4.2
Interest	3.14	4.1
Enthusiasm	2.71	4.0

Jacob

The quality of parent and child interactions are reported for both free play and mealtime activities.

Free play activity. Jacob's average ratings for baseline and intervention across all four measures during free play activities are reported. See Table 22.

Happiness. Jacob engaged in an average rating of 3.42 during baseline data collection. Following implementation of intervention, Jacob engaged in an average rating of 4.3.

General behavior. Jacob engaged in an average rating of 4.2 during baseline data collection. Following implementation of intervention, Jacob engaged in an average rating of 4.2.

Interest. Jacob engaged in an average rating of 2.0 during baseline data collection. Following implementation of intervention, Jacob engaged in an average rating of 4.4.

Enthusiasm. Jacob engaged in an average rating of 1.6 during baseline data collection. Following implementation of intervention, Jacob engaged in an average rating of 4.2.

Table 22

Jacob- Average Ratings for Quality of Interactions in Free Play

Measure	Baseline	Intervention
Happiness	3.42	4.3
General Behavior	4.2	4.2
Interest	2.0	4.4
Enthusiasm	1.6	4.2

Mealttime. Jacob's average ratings for baseline and intervention across all four measures during mealttime are reported. See Table 23.

Happiness. Jacob engaged in an average rating of 3.0 during baseline data collection. Following implementation of intervention, Jacob engaged in an average rating of 3.7.

General behavior. Jacob engaged in an average rating of 1.42 during baseline data collection. Following implementation of intervention, Jacob engaged in an average rating of 3.3.

Interest. Jacob engaged in an average rating of 2.28 during baseline data collection. Following implementation of intervention, Jacob engaged in an average rating of 3.9.

Enthusiasm. Jacob engaged in an average rating of 1.71 during baseline data collection. Following implementation of intervention, Jacob engaged in an average rating of 2.8.

Table 23

Jacob- Average Ratings for Quality of Interactions in Meal Time

Measure	Baseline	Intervention
Happiness	3.0	3.7
General Behavior	1.42	3.3
Interest	2.28	3.9
Enthusiasm	1.71	2.8

Parent Stress Index.

Surveys exploring parent stress levels were completed and analyzed pre and post implementation of intervention. The Parent Stress Index (Abidin, 1990) was used to measure this variable. Parents completed the Parent Stress Index (Abidin, 1990) separately, and the data was analyzed individually for each parent/child dyad. Surveys were returned pre and post implementation of intervention with a 100% completion rate.

These measures were secondary data collection measures, and behavioral intervention decisions were not based upon this collection of data. As previously identified, analysis of these measures was completed using a paired sample t-test to determine if there was a statistical difference between measures collected prior to implementation of intervention, and after completion of intervention.

All three parent/child dyads were included in this t-test calculation. Results indicate that decreases in parent stress levels following completion of intervention did not

show any statistical significance between surveys collected pre-intervention ($M = 90.67$, $SD = 25.502$) and post-intervention ($M = 86.22$, $SD = 24.583$) conditions; $t(2) = 2.92$, $p = .096$.

Social Validity Survey Among Potential Consumers.

Social validity surveys were distributed to parents in each parent/child dyad following the completion of intervention. These surveys were aimed at identifying the acceptability and sustainability of intervention as a whole. Surveys were returned pre and post implementation of intervention with a 100% completion rate.

Survey data collected from parents suggests that this intervention has high social validity among parents, the primary consumers of this intervention. All parents reported that they believe this intervention was 'very effective' in increasing implementation of behavioral strategies/skills taught in intervention. See Figure 7.

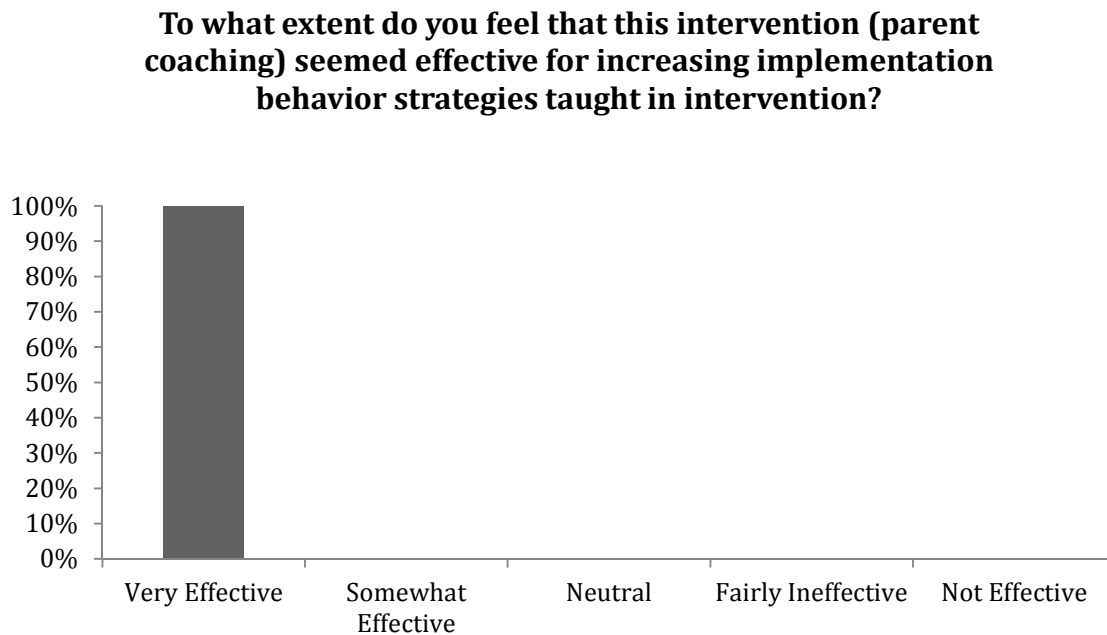


Figure 7. Parents' implementation of target skills.

In regards to increasing positive interactions and affect with their child, 66% of parents surveyed identified this intervention as ‘very effective,’ while 33% of parents surveyed identified this intervention as ‘somewhat effective.’ See Figure 8.

To what extent do you feel that this intervention (parent coaching) seemed effective in increasing positive interactions and affect with your child?

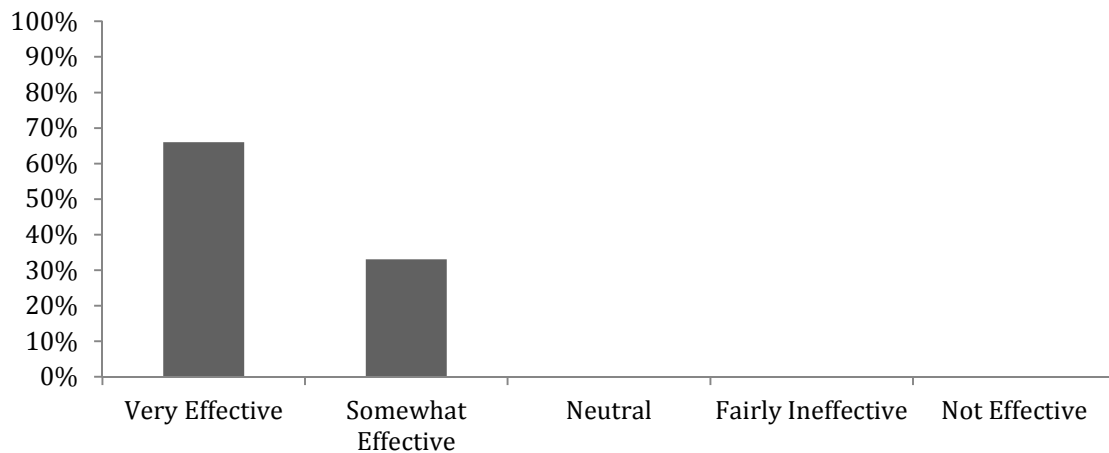


Figure 8. Parents interactions and affect with their children.

When asked to what extent did parents feel this intervention equipped them with the behavior strategies and skills to help decrease their child’s challenging behavior in their home, 66% of parents surveyed identified this intervention as ‘very effective,’ while 33% of parents surveyed identified this intervention as ‘somewhat effective.’ See Figure 9.

To what extent do you feel that this intervention (parent coaching) seemed effective in decreasing your child's engagement in challenging behavior at home?

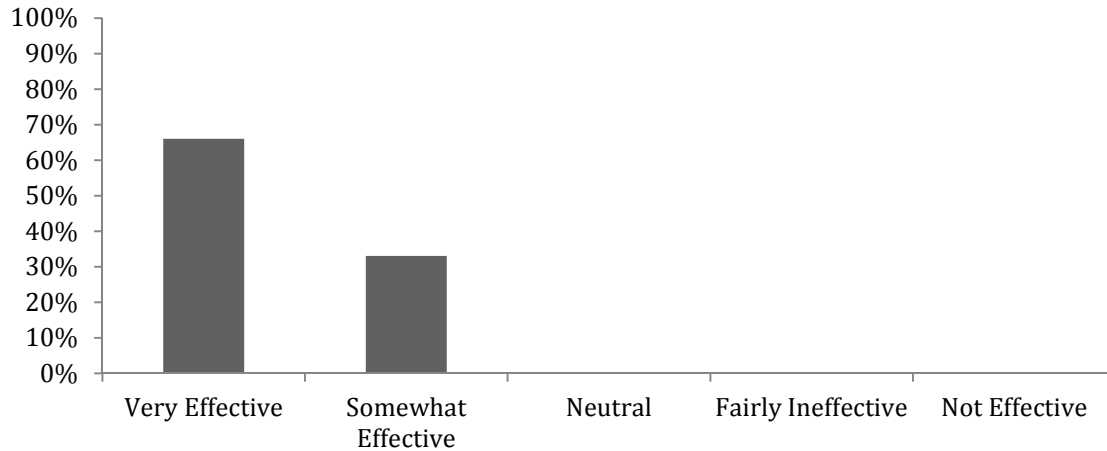


Figure 9. Children's engagement in challenging behavior.

In regards to increased confidence in responding to their child's challenging behavior, 66% of parents surveyed identified this intervention as 'very effective,' while 33% of parents surveyed identified this intervention as 'somewhat effective.' See Figure 10.

To what extent do you feel that this intervention (parent coaching) seemed effective in increasing your confidence in parenting and responding to your child's engagement in challenging behavior?

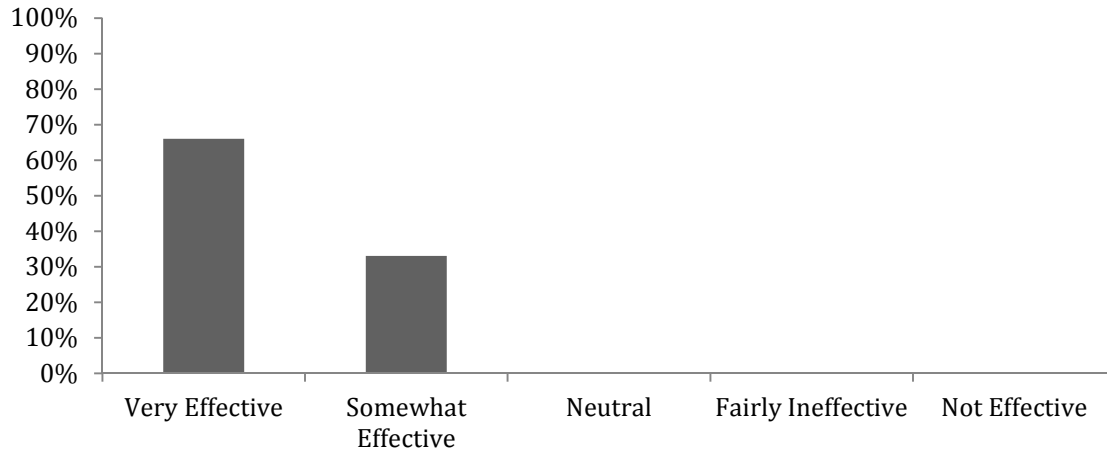


Figure 10. Parent's confidence levels.

When asked if to what extent did parents feel this intervention decreased parent stress levels, 66% of parent surveyed identified this intervention as 'very effective,' while 33% of parents surveyed identified this intervention as 'somewhat effective.' See Figure 11.

To what extent do you feel this that intervention (parent coaching) seemed effective in decreasing parent stress levels?

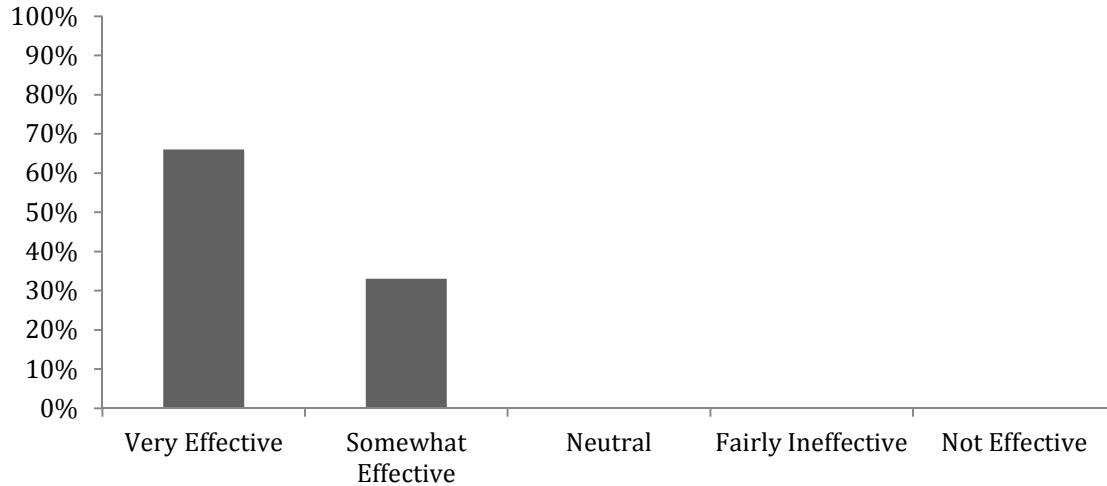


Figure 11. Parent’s stress levels.

Parents were given the opportunity to share any additional comments or thoughts at the end of the social validity survey regarding the effectiveness of intervention. One parent stated:

“Very helpful! Had some great insights on intervention strategies.”

Additionally, another parent stated:

“This intervention has been extremely effective in giving us tools with which to meaningfully encourage positive behaviors in my child and discourage unwanted behavior. I am confident as a parent and feel I have a firmer grip on situations that used to baffle me.”

Lastly, one parent identified the following:

“This intervention has really helped to increase the amount of time that my child stays at the table during meals and activities. I used to think 10 minutes was so long, now he can stay at the table for 20-30 minutes when I use the strategies I learned in this study.”

These anecdotal statements regarding the effectiveness of intervention emphasizes high social validity and acceptability of intervention as a whole.

Inter-observer Agreement and Fidelity of Implementation

Total count IOA was calculated on 20% of video data collection identifying fidelity of parent implementation of target skills and quality of parent/child interactions. Total Count IOA for fidelity of implementation of target skills was 89% across both video data collection settings and across all participants. Implementation of intervention was implemented with 100% fidelity across all three participants.

Discussion

The results of this study suggest that this parent coaching treatment package demonstrated positive outcomes for families and children with ASD. This study extends the literature on parent coaching by intentionally developing parent coaching materials based on adult learning principles. The parents who participated in this study increased their use of specific behavioral strategies across two settings in their homes. When implemented, parent coaching treatment packages can increase parent-mediated intervention at home, increase the quality of parent-child interactions, and decrease children's engagement in challenging behavior. Additionally, this intervention showed high social validity results. All parents found the intervention to be helpful, believed that participation in the intervention improved their interactions with their children, and reported using the strategies outside of the assessment times and settings.

This study adds to the growing literature demonstrating importance of parent coaching and parent mediated interventions. Results indicate that with implementation of effective parent coaching, parents can implement early intervention services in their homes and other environments with fidelity.

Rate of implementation of target skills taught during free time play activities served as the primary dependent variable in this study. Results demonstrated that when parents were taught how and when to explicitly implement the target skills, fidelity and rate of implementation of these skills increased across all three participants. Although gains in implementation of these skills was observed across five target skills, some skills showed higher increases in level than others. For example, the majority of parents implemented the “providing choices” intervention at a higher rate than “closing the teaching loop.” This may be related to the nature of these skills, and the context in which they can be implemented. Opportunities to implement some skills, such as positive reinforcement naturally occurs at higher rates than opportunities to implement skills such as the Premack Principle and closing the teaching loop, as they require more specific conditions for implementation. Ultimately, this affects the rate of implementation and at first glance may appear to be ineffective in increasing targeted skills. It may be that more directed instruction for parents could increase the rates of these behaviors, or it may be that the normative or appropriate rate of these different behaviors strategies is just different. It is important to remember that when parents were implementing the targeting intervention, they did so with fidelity. Parents may implement some more than other. Part of this may be due to their own personality, parenting style, or needs of their child. Future research may want to address strategies for how to set appropriate levels of implementation of behavioral strategies at home. Encouraging parents to use positive reinforcement, or other behavioral strategies, at a rate higher than necessary may actually be detrimental for children. Understanding how much parent support is needed to reach

the sweet spot of appropriate child behavior and adequate parent guidance is an important topic for researchers to address in the future.

The activities and setting in which video data collection occurred in this study represented snap shots of implementation of target skills throughout each parent/child dyads day. These snap shots were brief segments of free play and mealtime activities, presenting brief opportunities to implement target skills. Because of this, changes demonstrated in rate of implementation of specific target skills for some participants were minimal, however, the significance of these small changes in rate of implementation is compelling. When analyzing the frequency of days in which parents implemented a rate of 0 instances per minute of implementation of target skills between baseline and intervention phases, data demonstrated that the frequency of days in which parents implemented a rate of 0 instances per minute of target skills decreased drastically. For example, during baseline there were many days across all participants when parents did not implement any strategies, yet during intervention increases in frequency of implementation was seen. Further, although rates of implementation for providing choices, the Premack Principle, and closing the teaching loop, occurred at lower rates in intervention phases when compared to positive reinforcement and behavior specific praise, these changes are promising. Given the short observation window, expecting higher rates of implementation may have been unrealistic and set up parents to fail in this intervention.

Another important factor considered when analyzing changes in rate of implementation and the effects of intervention as a whole, is the question of what is an ‘appropriate’ or ‘normal’ rate of implementation of these behavioral skills. Target skills

that generally demonstrated small changes in rate of implementation following implementation of intervention (the Premack Principle and closing the teaching loop) in this study are implemented often in response to specific events or behaviors and include the delivery of a direction or demand. If implementation of these target skills were to occur at higher rates, it may suggest that parents are placing high levels and frequencies of demands and directions on their child in a short 10-minute segment, ultimately affecting positive interactions with their child. Implementation of these target skills in lower frequencies demonstrates that parents effectively learned how to implement these skills and the frequency of implementation did increase, but is also in alignment with what is an appropriate frequency of implementation.

Anecdotally, parents reported that they used the target skills throughout their daily activities and routines and in a number of settings in addition to the 10-minute videos of free choice and mealtime collected for data collections. Further, all three parents reported that they implemented the target skills when their child engaged in challenging behaviors at times and places outside of this intervention. This suggests that the PND may underestimate the true impact of this intervention. It is important for research using single case research design to continue to use visual analysis and listen to consumers about the effectiveness of interventions rather than relying on a statistical analysis to determine whether or not an intervention has helped to allay a socially important issue.

Data collected analyzing the quality of parent and child interactions showed variable results across participants in happiness, general behavior, interest, and enthusiasm. For two parent/child dyads, minimal effects were seen following implementation of intervention. This data is contradicts what parents reported in social

validity surveys. In follow up surveys parents reported that intervention was effective in increase positive interactions and affect with their child. These social validity data collection measure suggests that the coding system utilized in this parent coaching study did not accurately assess changes seen in quality of parent and child interactions.

For Peter/Jacob, an increase in averages of these four affect ratings was seen following completion of intervention. Upon analysis of intervention data collected, one variable that sets Peter/Jacob apart from the other participants was Jacob's frequency and intensity of engagement in challenging behavior prior to implementation of intervention. Further, this parent/child dyad showed lower rates of implementation of target skills in baseline, and higher rates of engagement in child challenging behavior in comparison to the other two parent/child dyads that participated in this study. Jacob was the only child who demonstrated repeated challenging behavior during the baseline sessions. His parent's ability to be more confident and competent in addressing these behaviors, along with his lower rating during baseline may be related to the increase in ratings for this parent/child dyad.

Analysis of implementation of the Parent Stress Index (Abidin, 1990) pre and post implementation of intervention showed no statistical significance. This is interesting as it contradicts results of the social validity survey collected upon completion of intervention. One explanation may be that in the social validity survey completed by parents, questions pertaining to levels of stress were contextualized to specific challenging behavior that this intervention addressed through teaching target PBS skills to decrease these behaviors. However, the PSI (Abidin, 1990) identifies broader areas of causes of stress and anxiety pertaining to having a child with autism. It is possible that this intervention did in fact

decrease parent stress levels pertaining to engagement in challenging behavior, but the conglomerate effects of raising a child with a disability may be beyond the scope of this measure. Further, intervening on some behaviors with positive outcomes may decrease stress because the occurrence of engagement in these behavior is decreased, however, the additional stress of implementation of intervention may also affect these measures.

The lack of change on the affective ratings and the PSI suggest that as a field we do not have a reliable and sensitive method for measuring these types of behavior changes in family members of children with disabilities. As we continue to address quality of life issues for families in our interventions, it is important that we develop measurement strategies so that we can understand the impact of our interventions on the affective behavior of parents. Do our interventions actually reduce stress, but our measures are not sensitive; or do our intervention actually improve child behavior and increase parent stress by adding to the list of things that parents need to do everyday?

This intervention showed high social validity and acceptability among consumers. Although not the primary data collection measure, this measure shows one of the most important, promising outcomes demonstrating the effectiveness of intervention. Social validity affects the sustainability of intervention. If parents do not feel that this intervention is effective, implementation of intervention will likely not sustain, and potential effectiveness of intervention is diminished. Factors that affect this acceptability include thorough understanding of steps of implementation, ease of implementation, and overall effectiveness of intervention as a whole. The anecdotal remarks reported regarding acceptability of intervention from parents following completion of intervention speaks volumes to the effectiveness of this study as a whole.

Unexpected Findings

One unexpected finding of this study was that when implementation of parent coaching sessions targeting positive reinforcement occurred, rate of implementation of behavior specific praise also increased along with rates of positive reinforcement. This occurred naturally for many of the participants in this study in both meal and free play video collection settings. This increase in implementation demonstrates that parents identified specific behaviors that their child engaged in within their implementation of positive reinforcement without explicit instruction to do so. It is probable that in future implementation of this intervention, behavior specific praise can be targeted without first teaching positive reinforcement.

Another unexpected finding was the generalization of skills parents implemented outside of data collection session and with other siblings. In some video data collection segments, participants' typically developing siblings were present during these sessions. Many of these data collection sessions demonstrated the parents using the target skills with their typically developing child, as well as the target child participating in intervention. This suggests that these target skills do not only work for children with autism and other related disabilities, but that they have a broader impact on promoting positive behaviors with typically developing children.

An additional unexpected finding of this study was implementation of target skills taught during intervention by siblings and other members of each participant's families. This was evident in multiple parent/child dyads that participated in the study. As parents' implementation of target skills increased, siblings and other family members observed higher rates of parents modeling these target skills. It was interesting to see that without

specific instruction, their fidelity and rate of implementation of target skills also increased just by observing their parent implement these skills. Additionally, this study also demonstrated that siblings sought out instruction on how to ‘help’ their sibling. Specifically, Jessica reported that Ryan’s sister often asked her how to implement these target skills with Ryan, and consistently checked in with Jessica to make sure was implementing them correctly. This suggests that including siblings and other members of a child’s immediate family to implement these strategies is a promising intervention. This evidence is compelling, as it expands generalization of implementation of target skills across other environments and people that children with autism often come in contact with in their daily life.

During parent coaching sessions, many parents stated that the support of a Behavior Analyst coming into the home each week to help and problem solve around challenging behaviors increased their motivation and confidence in responding to their child’s challenging behaviors and other related problematic situations. It was not intended for this intervention to serve as a support network for parents. The parents’ need social and technical support (Schwartz, Ashmun, McBride, Scott & Sandall, 2017), however, this demonstrates the well documented level of stress that parents of children with ASD experience. It also aligns with the adult learning research that identifies building a climate of respect and strong relationships as one of the principles of effective adult learning. This intervention created a safe place for parents to share what is difficult for them in their parenting, and to collaborate to identify outcomes to increase quality of life. It is compelling that positive outcomes were seen in this intervention with the development of a strong, trusting relationship that extend beyond the initial goals of this intervention.

Limitations

Although intervention increased fidelity of implementation of target behavior skills taught during parent coaching, and in turn, increased quality of life for the child and parents participating in this study, some limitations remain.

First, parent/child dyads were identified as good candidates for implementation of this parent coaching treatment package if they reported engagement of challenging behavior at home, and were currently receiving minimal home-based behavioral intervention. It is possible that these parents showed potential for higher gains in knowledge and implementation of the skills taught in this intervention, as they had received limited home-based early intervention (all of these children were involved in a school based Early Intervention Behavior Intervention (EIBI) program). Additionally, because children that participated in each parent/child dyad engaged in challenging behavior prior to implementation of this intervention, the potential threshold for learning to occur and knowledge to gain may have been higher than other families of children diagnosed with autism. It is possible that this intervention may not have been as successful for families of children with autism who engaged in lower frequency and intensity of challenging behavior, or have received some kind of consistent early intervention services prior to participation in this study.

Additionally, in some video data collections videos, siblings and other members of the family were present. This is a limitation because with other siblings present, the parent implementing target skills often did not give all their attention only their child who was participating in the study. These occurrences of shared attention between other children and family members may have ultimately affected the frequency of potential

implementation of target skills taught in intervention. Although intervention sought to collect data in settings that were naturally occurring for families, these activities often included other members of each family and ultimately could have impacted parent mediated rate of implementation of target skills taught in intervention. This may be considered a limitation in terms of experimental rigor, but might also be considered strength when considering the ecological validity and sustainability of the intervention.

Next, lack of experimental control in Peter's rate of implementation of target skills in the free play data collection setting may be identified as a limitation of this study. Due to scheduling conflicts and family cancellations, data collection was limited for Peter and Jacob's family. Further, implementation of the start of intervention on positive reinforcement and behavior specific praise occurred on days that showed increasing data trends. Because of this, it is possible that rate of implementation of these target skills would have continued to increase in level and trend without implementation of intervention.

Another critique of this study may be the inconsistency in activities that each parent/child engaged in during free play data collection. Further, because these 10-minute play segments sought to mimic naturally occurring play between children and their parents already occurring in parent/child dyad's homes, a variety of different play activities were completed among all parent/child dyads. Although this broad operational definition of what activities could occur during free play data collection was intentional to individualize intervention, it is important to identify as a limitation because various activities presented different frequencies of opportunities for implementation of target skills taught during intervention. For example, completing an open-ended play segment

of jungle using themed animals and people may present higher rates of opportunities for parents to implement these target skill because of the higher frequency of interactions that a play activity like this one presents. On the contrary, an example of an activity that may have presented limited opportunities for implementation of target skills taught during intervention includes readings books and other close-ended play activities, as they do not present numerous opportunities for interactions among participants. This individualization of activities engaged in by parent/child dyads during free play data collection ensured that parents and children were playing with materials that were within their repertoire of skills and within their normal routine of play. However, this lack of protocol identifying what play activities should be engaged in during free play activities may be viewed as a methodological shortcoming.

Lastly, because this intervention included multiple individual components of intervention implemented together to create a comprehensive treatment package (i.e., one on one training sessions, session hand outs, text message/email check ins, etc.), a critique of this intervention could be that it is unclear whether the entire intervention as a whole lead to positive outcomes demonstrated in this study, or if specific components were more effective than others in producing these results. It is possible that specific components of this intervention treatment package were more instrumental in producing the results in this study, and not the treatment package as a whole.

Implications for Future Research

This study provided explicit incorporation of adult learning research and education within a parent coaching treatment package for families affected by ASD. Although many of these principles are included within other parent coaching procedures

across literature, this study laid the groundwork for identification of where and how to explicitly implement these important aspects of adult learning into coaching protocols. As incorporation of parents into early intervention is increasingly becoming required for insurance coverage of in home services, additional research should be completed developing parent coaching protocols that align with this body of literature.

Given the effectiveness of this study in increasing parent implementation of early intervention in participants' homes, future research should further examine parent coaching procedures and expanding skills taught during these sessions to more complex, individualized behavioral strategies used in Applied Behavior Analysis. As identified in limitations, this parent coaching protocol included multiple components of intervention. Future research should be conducted examining specific components of this parent coaching protocol, seeking to isolate and identify which components of this intervention were most effective in increasing knowledge and fidelity of implementation of target skills. This research will inform future development of early intervention services, as researchers will be able to develop additional high quality interventions incorporating most effective intervention practices.

As identified in unexpected findings, siblings also showed increased rates in implementation of target skills taught during parent coaching sessions. This finding is compelling, and suggests that not only can parents benefit from coaching sessions teaching specific target skills within early intervention, but siblings also have the potential to do so, too. Research demonstrates that relationships between typically developing siblings and siblings with disabilities are often strained (e.g., Moyson & Roeyers, 2012; Mascha & Boucher, 2006), highlighting the important of this finding.

This study demonstrated that implementation of target skills resulted in increases seen in knowledge, implementation, confidence, positive interactions and stronger relationships. Future research should be conducted to identify effective coaching protocols and procedures that are aligned with how children and adolescents learn in order to create effective interventions teaching siblings and peers to implement intervention.

Lastly, it was unexpected that rating scales used in this study to measure the quality of parent and child interactions did not represent what parents reported in social validity surveys. This contradictory data suggests that future research should focus on developing rating scales that better represent the changes in quality of these interactions. It may be that qualitative interviews with parents should be conducted to more accurately identify changes in these behaviors. Further, additional research should be conducted to develop stronger qualitative data collection measures that are true representations of the effects resulting from intervention.

Conclusions

This study identified that implementation of parent coaching interventions rooted in evidence based practice and aligned with adult learning research showed positive outcomes for families affect by ASD. There is still a great deal of research to be conducted within parent coaching, but results of this study are promising.

Results of this study identify that effective parent coaching practices can increase parent implementation behavior strategies developed in early intervention. This intervention lead to a variety of positive outcomes, including fidelity of implementation of target skills, increases in quality of interactions between children and their parents, decreases in child engagement in challenging behavior at home, and increased parent

knowledge and confidence in implementing intervention at home. Furthermore, this study demonstrated that results of this study may ultimately lead to increased quality of life for children and families affected by ASD, as parents feel they have a better understanding of how and when to implement intervention strategies with their child.

Lastly, this intervention seems to show strong sustainability among parents as all parents identified high acceptability of intervention. This is especially compelling, as interventions with low acceptability often results in weak sustainability, and a lack of implementation of intervention at home. This study suggests that more emphasis should be placed on parents' perceptions of interventions when analyzing the effectiveness of intervention. As a whole, this study demonstrated that with reliable implementation of effective parent treatment packages, parents have the capacity to learn and implement behavioral strategies, resulting in positive outcomes in a variety of behaviors for both parents and children.

Appendix A: Consent Form

**UNIVERSITY OF WASHINGTON
CONSENT FORM****The Effects of an Antecedent Based Parent Coaching Package to Increase Quality of Parent/Child Interactions for Young Children with Autism Spectrum Disorder**

Researchers: Katherine Bateman
College of Education
Special Education,
Kjb27@uw.edu
(805) 815-9579

Faculty Advisor: Dr. Ilene Schwartz
Ilene@uw.edu
(206) 543-4011

Researchers' Statement

We are asking you to participate in a research study looking at the effects of a high-quality, evidence based parent-coaching package to increase quality of parent-child interactions. The purpose of this consent form is to make sure you are given the information needed to help you decide if you would like to participate in this study or not. You may ask any questions you may have about the purpose of this research, procedures, what you would do in the study, the risks and benefits of the study, as well as any other questions you may have. Once we have answered any questions you and your family may have, you can decide if you would like to participate in this study or not.

This process is called "informed consent." Following your decision to participate in this study or not, we will provide you with a copy of this form for your records.

PURPOSE OF THE STUDY

The purpose of this study is to explore the effects of a 6-8 weeklong parent-coaching package to increase quality of parent-child interactions. Intervention will be provided to parents each week for 45 minutes. Skills taught during intervention include strategies for parents to use to increase their quality of parent-child interactions, while decreasing challenging behaviors in the home. Intervention is meant to provide parents with the behavioral strategies and skills they need to increase quality of life for their child and family.

STUDY PROCEDURES

If you choose to participate in this study, you will receive this parent coaching intervention for 8 weeks, as well as complete two surveys at the beginning and end of intervention. It is important to note, that although intervention is 8 weeks long, data will

be collected before parent-coaching begins to make sure we have data to compare to and examine the effects of the parent-coaching package.

Surveys

At the beginning and end of intervention, I will ask you to complete two surveys. Each survey will be done independently, and should not take more than 15-20 minutes to complete. These will be done with paper and pencil, and can be completed at your convenience.

Intervention

By participating in this intervention, you will receive 45-minute parent coaching sessions one time per week with the researcher, for a duration of 8 weeks. These sessions are one on one with the researcher and parent(s). In these coaching sessions, you will receive training on 3 different behavioral strategies to increase quality of parent-child interactions and decrease challenging behaviors in your home. These training sessions are scheduled at your convenience, and include opportunities for you and your family to address any questions or concerns regarding your child and their behavior.

Additionally, a Behavior Interventionist will come twice per week to collect two 10-minute video recordings. Video recordings will be of a snack or meal time, as well as a free play activity. These videos should include the child and parent(s). Behavior interventionists will have all technology needed to complete these videos.

Text message support will be provided twice per week throughout intervention. These text messages will come from the researcher, checking in on progress of implementation of skills taught during intervention, as well as answering any questions or troubleshooting any issues that may arise.

All child data (videos and survey information) will be stored on a password-protected computer, in a locked office. Once videos are collected, only the researcher will have access to this data and all data will be destroyed three years after the study.

RISKS, STRESS, OR DISCOMFORT

Some people that participate in research studies feel that providing this type of information about your child and family is an invasion of privacy. Some people feel nervous or self-conscious when observations are completed during coaching sessions. These concerns are addressed below.

BENEFITS OF THE STUDY

You and your child may benefit from participating in this study. One possible benefit would be increased quality of parent and child interactions. Additionally, these high quality interactions have shown in research to lead to decreases in challenging behaviors. Research has shown that when challenging behavior is decreased, overall parent stress levels are decreased. This intervention may give you and your family skills that may lead to an overall increase quality of life for your child and your family.

OTHER INFORMATION

You may decide to not participate in this study and have the option to withdraw from this study at any time without penalty of loss of benefits to which you are currently receiving or otherwise entitled.

If results from this study are presented or published, I will remove all identifying information. I may use this data as a foundation for my doctoral dissertation.

If you have any questions about this research study, please contact Katy Bateman at the telephone number or email on the top of this form.

Printed name of researcher

Signature

Date

Subject's Statement

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions later about the research, I can ask one of the researchers listed above.

PARTICIPANTS STATEMENT

Parent Coaching Package

This study has been explained to me. I volunteer to take part in this research. If I have questions later on about the search, I can as the researcher listed above.

I give my permission for this researcher to record parent-child interactions in my home.

I do NOT give my permission for this researcher to record parent-child interactions in my home.

I give my permission for the researcher to re-contact me to clarify information

I do NOT give permission for the researcher to re-contact me to clary information.

 Printed name of subject

Signature of subject

Date

Copies to:

Katherine Bateman

Subject

Appendix B: Child Affect Rating Scale

<u>Happiness</u>			
Rating	<u>Unhappy</u>	<u>Neutral</u>	<u>Happy</u>
	Cries, pouts, tantrums, appears to be sad, angry, frustrated. Child seems not to be enjoying self.	Does not appear to be decidedly happy or particularly unhappy. May smile or frown occasionally but overall, seems rather neutral in this situation.	Smiles, laughs appropriately, seems to be enjoying self.
Score	0 to 1: Dependent upon extent of unhappiness	2 to 3: Dependent upon extent of happiness.	4 to 5: Dependent upon extent of enjoyment.
<u>General Behavior</u>			
Rating	<u>Poorly Behaved</u>	<u>Neutral Behavior</u>	<u>Well-Behaved</u>
	Child/Parent is disruptive-may tantrum, attempt to leave chair or room, interrupt teacher's instructions, and/or show aggression toward teacher, self, or objects. Child/Parent is generally off-task-may fidget and squirm, show inappropriate vocal behavior (e.g., off-task laughter and noises), or motor behavior unrelated to task. Shows little attention to task, and may be noncompliant.	Child/Parent is neither very disruptive nor exceptionally attentive. Child/Parent/Parent may fidget and appear inattentive, but is not aggressive or rebellious. Generally complies with instructions, but may not do so readily.	Child/Parent sits quietly, attends to teacher and to task. Responds to instruction, is compliant and appears to try to perform successfully. May laugh or show other emotional behavior under appropriate circumstances.
Score	0 or 1, depending upon extent of disruptiveness).	2 or 3, depending on extent of attentiveness.	4 or 5, depending upon extent of attention and compliance.

<u>Interest</u>			
Rating	<u>Disinterested</u>	<u>Neutral Interest</u>	<u>Interested</u>
	Child looks bored, noninvolved not curious or eager to continue activity. May yawn or attempt to avoid (or escape) situation. Spends much time looking around and little time attending to task. When child does respond, there may be a long response latency.	Neither particularly interested nor disinterested. Child seems to passively accept the situation. Does not rebel but is not obviously eager to continue.	Attends readily to task: responds readily and willingly. Child is alert and involved in activity.
Score	0 to 1: Dependent on extent of disinterest.	2 to 3: Dependent on extent of interest.	4 to 5: Dependent upon level of alertness and involvement.

<u>Enthusiasm</u>			
Rating	<u>Negative Enthusiasm</u>	<u>Neutral Enthusiasm</u>	<u>Positive Enthusiasm</u>
	Tries to leave the room, throws tantrums, kicks, screams, throws material around the room, cries, pushes the task away or refuses to perform the task.	Generally complies with instructions, but tends to get fidgety; there are moments of staring or inattention, “toying” with stimulus materials, wiggling feet and so on.	Performs task readily and frequently attention to parent or other people present, or stimulus materials between trials.
Score	0	2	4
	Remains in chair, but generally does not comply with instructions; behavior consists primarily of vocalizations and motor behavior unrelated to the task- yawning, rocking, loud tapping, and so on.	Complies with instructions, but does not perform task readily; exhibits neutral behavior by occasionally focusing on (watching) parent or other people present, or stimulus materials between trials.	Attends to task quickly, laughs or smiles while working on the task, predominantly watches parent or other people present and stimulus materials intently, performs

Appendix C: Parent Coaching Sessions Procedural Fidelity Checklist

Procedural Fidelity Checklist
Parent Coaching Sessions

<i>PART 1: 15 minute- Didactic/Information Sharing</i>	<i>Completed?</i>	<i>Notes</i>
1. Target behavior is explained	<input type="checkbox"/>	
2. Rationale provided	<input type="checkbox"/>	
3. Examples and non examples	<input type="checkbox"/>	
4. Questions?	<input type="checkbox"/>	
<i>PART 2: 15 minute- Modeling/Feedback</i>		
5. Model target skills	<input type="checkbox"/>	
6. Role-play with parents (as needed)	<input type="checkbox"/>	
7. Have parents implement- practice and support	<input type="checkbox"/>	
8. Collaborative problem solving	<input type="checkbox"/>	
9. Performance Based Feedback	<input type="checkbox"/>	
<i>PART 3: 15 minute-Debrief</i>		
10. Self Reflection	<input type="checkbox"/>	
11. Performance Based Feedback	<input type="checkbox"/>	
12. Collaborative problem solving	<input type="checkbox"/>	
13. Opportunity for questions	<input type="checkbox"/>	

Appendix D: Weekly Parent Coaching Intervention Components Fidelity Checklist

Procedural Fidelity Checklist
Weekly Parent Coaching Intervention Components

Parent/Child Dyad Initials: _____

Week: _____ Skill Targeted: _____

<i>Intervention Components</i>	<i>Completed?</i>
1. Parent Coaching Session	<input type="checkbox"/>
2. Handout	<input type="checkbox"/>
3. Text message/Email check in	<input type="checkbox"/>
4. Questions?	<input type="checkbox"/>

Parent Coaching Session Notes:

Appendix E: Parent Coaching Session 1 Handout

Parent Coaching- Session 1- 45 minutes
General Overview of Intervention Procedures

Agenda

- Intervention Overview
- Questions/Concerns
- Child Strengths
- Challenges at home
- Family priorities

Intervention Format

<i>PART 1: 15 minute- Didactic/Information Sharing</i>	<i>Corresponding Adult Learning Principles</i>
<ul style="list-style-type: none"> • Target behavior is explained • Rationale provided • Examples and non examples • Questions? 	<ul style="list-style-type: none"> ✓ Create a Climate of Respect ✓ Build on Experience
<i>PART 2: 15 minute- Modeling/Feedback</i>	
<ul style="list-style-type: none"> • Model target skills • Role-play with parents (as needed) • Have parents implement- practice and support • Collaborative problem solving • Performance Based Feedback 	<ul style="list-style-type: none"> ✓ Encourage Active Participation ✓ Build on Experience ✓ Employ Collaborative Inquiry ✓ Learn for Action
<i>PART 3: 15 minute-Debrief</i>	
<ul style="list-style-type: none"> • Self Reflection • Performance Based Feedback • Collaborative problem solving • Opportunity for questions 	<ul style="list-style-type: none"> ✓ Employ Collaborative Inquiry ✓ Learn for Action ✓ Empower Participants

Parent Coaching Intervention: 8 weeks, 45 minute sessions

Intervention At a Glance

- Parent coaching session once per week (45 minutes each).
- Following this week, a different skill will be taught every 2 weeks for a total of 3 skills throughout session. These skills are meant to be preventative strategies to decrease the occurrences(s) of challenging behavior.
- The last session of intervention (week 8) will be a closing session where we discuss where to go from here and look at the data collected together.
- Parent interviews and rating skills will be completed again at the end of intervention.
- Throughout intervention, twice per week we will collect video of a 10-minute segment of play and 10-minute segment of meal times. In these videos, we will be

looking at parent implementation of the skills taught during parent training, as well as the quality of interactions between parent and child.

Appendix F: Parent Coaching Session 2 Handout

Parent Coaching- Session 2- 45 minutes

Positive Reinforcement

Agenda

- Questions/Concerns
- Check in
- Skill Introduction

Intervention Format

<i>PART 1: 15 minute- Didactic/Information Sharing</i>	<i>Corresponding Adult Learning Principles</i>
<ul style="list-style-type: none"> • Target behavior is explained • Rationale provided • Examples and non examples • Questions? 	<ul style="list-style-type: none"> ✓ Create a Climate of Respect ✓ Build on Experience
<i>PART 2: 15 minute- Modeling/Feedback</i>	
<ul style="list-style-type: none"> • Model target skills • Role-play with parents (as needed) • Have parents implement- practice and support • Collaborative problem solving • Performance Based Feedback 	<ul style="list-style-type: none"> ✓ Encourage Active Participation ✓ Build on Experience ✓ Employ Collaborative Inquiry ✓ Learn for Action
<i>PART 3: 15 minute-Debrief</i>	
<ul style="list-style-type: none"> • Self Reflection • Performance Based Feedback • Collaborative problem solving • Opportunity for questions 	<ul style="list-style-type: none"> ✓ Employ Collaborative Inquiry ✓ Learn for Action ✓ Empower Participants

Parent Coaching Intervention: 8 weeks, 45 minute sessions

Positive Reinforcement

- Positive Reinforcement is a response immediately following engagement in a behavior that increases future engagement in this behavior. In other words, positive reinforcement is providing social praise or an object or tangible, that increases this behavior in the future.
- Sometimes we think we are providing positive reinforcement by saying “good job” or “you did it,” but unless the behavior actually increases- this is not positive reinforcement.
- The key component is finding something that is motivating to work as a reinforcer, to make sure that we are actually reinforcing this behavior.
- Reinforcers can be anything, as long as the behavior is increasing. This means that sometimes these reinforcers are things that many not be age appropriate.

However, if that is what is going to increase behavior, we can use that as a starting point and then move forwards trying to find other potential reinforcers.

Appendix G: Parent Coaching Session 3 Handout

Parent Coaching- Session 3- 45 minutes

Behavior Specific Praise

Agenda

- Questions/Concerns
- Check in
- Skill Introduction

Intervention Format

<i>PART 1: 15 minute- Didactic/Information Sharing</i>	<i>Corresponding Adult Learning Principles</i>
<ul style="list-style-type: none"> • Target behavior is explained • Rationale provided • Examples and non examples • Questions? 	<ul style="list-style-type: none"> ✓ Create a Climate of Respect ✓ Build on Experience
<i>PART 2: 15 minute- Modeling/Feedback</i>	
<ul style="list-style-type: none"> • Model target skills • Role-play with parents (as needed) • Have parents implement- practice and support • Collaborative problem solving • Performance Based Feedback 	<ul style="list-style-type: none"> ✓ Encourage Active Participation ✓ Build on Experience ✓ Employ Collaborative Inquiry ✓ Learn for Action
<i>PART 3: 15 minute-Debrief</i>	
<ul style="list-style-type: none"> • Self Reflection • Performance Based Feedback • Collaborative problem solving • Opportunity for questions 	<ul style="list-style-type: none"> ✓ Employ Collaborative Inquiry ✓ Learn for Action ✓ Empower Participants

Parent Coaching Intervention: 8 weeks, 45 minute sessions

Behavior Specific Praise

- Behavior specific praise is a type of verbal reinforcement where we verbally include the exact behavior that the child did correctly and that we want to continue.
- Example: “Good job hanging up your jacket!” “I love that way you ate all your strawberries.”
- This week, try to really catch your child engaging in appropriate behaviors and use behavior specific praise to reinforce those behaviors.

Appendix H: Parent Coaching Session 4 Handout

Parent Coaching- Session 4- 45 minutes

Providing Choices

Agenda

- Questions/Concerns
- Check in
- Skill Introduction

Intervention Format

<i>PART 1: 15 minute- Didactic/Information Sharing</i>	<i>Corresponding Adult Learning Principles</i>
<ul style="list-style-type: none"> • Target behavior is explained • Rationale provided • Examples and non examples • Questions? 	<ul style="list-style-type: none"> ✓ Create a Climate of Respect ✓ Build on Experience
<i>PART 2: 15 minute- Modeling/Feedback</i>	
<ul style="list-style-type: none"> • Model target skills • Role-play with parents (as needed) • Have parents implement- practice and support • Collaborative problem solving • Performance Based Feedback 	<ul style="list-style-type: none"> ✓ Encourage Active Participation ✓ Build on Experience ✓ Employ Collaborative Inquiry ✓ Learn for Action
<i>PART 3: 15 minute-Debrief</i>	
<ul style="list-style-type: none"> • Self Reflection • Performance Based Feedback • Collaborative problem solving • Opportunity for questions 	<ul style="list-style-type: none"> ✓ Employ Collaborative Inquiry ✓ Learn for Action ✓ Empower Participants

Parent Coaching Intervention: 8 weeks, 45 minute sessions

Providing Choices

- Providing choices is a preventative strategy used in ABA. This strategy is called an antecedent strategy, or one that is implemented help decrease the occurrence of challenging behavior and give more options and choices to your child.
- When giving a direction/instruction to your child, provide two choices for this instruction to be completed. For example, if the instruction is to sit down at the table for dinner, you could provide two choices of, “do you want to tip toe to the dinner table, or jump?”
- In the end, our goal is met (in the above example, the goal of going to the dinner table is met), but research has shown that giving these choices have decreased children with ASD engaging in challenging behavior because of the control hat they are giving over the demand.
- When implementing this, think about the following:
 - 1. What is the end goal of this instruction?

- 2. What choices can I give me child to give him some control over completing this instruction?

Appendix I. Parent Coaching Session 5 Handout

Parent Coaching- Session 5- 45 minutes

Premack Principle

Agenda

- Questions/Concerns
- Check in
- Skill Introduction

Intervention Format

<i>PART 1: 15 minute- Didactic/Information Sharing</i>	<i>Corresponding Adult Learning Principles</i>
<ul style="list-style-type: none"> • Target behavior is explained • Rationale provided • Examples and non examples • Questions? 	<ul style="list-style-type: none"> ✓ Create a Climate of Respect ✓ Build on Experience
<i>PART 2: 15 minute- Modeling/Feedback</i>	
<ul style="list-style-type: none"> • Model target skills • Role-play with parents (as needed) • Have parents implement- practice and support • Collaborative problem solving • Performance Based Feedback 	<ul style="list-style-type: none"> ✓ Encourage Active Participation ✓ Build on Experience ✓ Employ Collaborative Inquiry ✓ Learn for Action
<i>PART 3: 15 minute-Debrief</i>	
<ul style="list-style-type: none"> • Self Reflection • Performance Based Feedback • Collaborative problem solving • Opportunity for questions 	<ul style="list-style-type: none"> ✓ Employ Collaborative Inquiry ✓ Learn for Action ✓ Empower Participants

Parent Coaching Intervention: 8 weeks, 45 minute sessions

Premack Principle

- Premack Principle is a behavioral strategy used in ABA to give directions to children.
- This strategy is used when delivering a direction to your child that may be non-preferred. It is followed by a preferred direction or activity- serving as reinforcement for completion of the non-preferred activity.
- When giving a direction/instruction to your child, use the language “First_____, Then_____.” The first direction is the instruction or direction that has a lower probability of your child engaging in independently. The second direction is an instruction that is a high probability demand, or one that your child will likely engage in. The second direction reinforces engagement in the first direction.
- Examples:
 - “First clean up, then all done”
 - “First eat your dinner, then you can have ice cream.”

- “First play with blocks, then we can play outside.”

Appendix J: Parent Coaching Session 6 Handout

Parent Coaching- Session 6- 45 minutes
Following Through- Closing the Teaching Loop

Agenda

- Questions/Concerns
- Check in
- Skill Introduction

Intervention Format

<i>PART 1: 15 minute- Didactic/Information Sharing</i>	<i>Corresponding Adult Learning Principles</i>
<ul style="list-style-type: none"> • Target behavior is explained • Rationale provided • Examples and non examples • Questions? 	<ul style="list-style-type: none"> ✓ Create a Climate of Respect ✓ Build on Experience
<i>PART 2: 15 minute- Modeling/Feedback</i>	
<ul style="list-style-type: none"> • Model target skills • Role-play with parents (as needed) • Have parents implement- practice and support • Collaborative problem solving • Performance Based Feedback 	<ul style="list-style-type: none"> ✓ Encourage Active Participation ✓ Build on Experience ✓ Employ Collaborative Inquiry ✓ Learn for Action
<i>PART 3: 15 minute-Debrief</i>	
<ul style="list-style-type: none"> • Self Reflection • Performance Based Feedback • Collaborative problem solving • Opportunity for questions 	<ul style="list-style-type: none"> ✓ Employ Collaborative Inquiry ✓ Learn for Action ✓ Empower Participants

Parent Coaching Intervention: 8 weeks, 45 minute sessions

Following Through

- Following through is a simpler term for “closing the teaching loop.” What this means is that when you give a direction or instruction to your child, you provide a consequence- whether that be reinforcement because your child completed the direction requested, or we provide a prompt to help out child complete the requested direction/instruction.
- Here is the break down of what following through looks like:
 - 1. Give the direction/instruction to your child.
 - Example: “Sam, clean up.”
 - 2. Child Response
 - Child cleans up:
 - Give reinforcement immediately (Remember to use that behavior specific praise- “I love how fast you cleaned up!”)

- Child does not respond-
 - First, if you can offer a choice- do so! (“Do you want to clean up the red or blue Legos?”)
 - Next-
 1. If you offered a choice- follow through by letting your child know you are going to chose for them if they do not make a choice, and make a choice. (Verbally state this choice.)
 2. Let your child know that you are going to help them clean up, or whatever instruction/direction you instructed your child to do.
- Prompting:
 - Full Physical
 - Partial Physical
 - Model Prompt
 - Verbal Prompt
 - Gestural Prompt
- Once your child does complete the direction independently or with help, don’t forge to reinforce this!

Appendix K: Social Validity Survey

Parent Coaching Intervention- Social Validity

1. To what extent do you feel this intervention (parent coaching) seemed effective for increasing implementation behavior strategies taught in intervention?

- Very effective
- Somewhat effective
- Neutral – not sure either way
- Fairly ineffective
- Very ineffective

Comments:

2. To what extent do you feel this intervention (parent coaching) seemed effective in increasing positive interactions and affect with your child?

- Very effective
- Somewhat effective
- Neutral – not sure either way
- Fairly ineffective
- Very ineffective

Comments:

3. To what extent do you feel this intervention (parent coaching) seemed effective in decreasing your child's engagement in challenging behavior at home?

- Very effective
- Somewhat effective
- Neutral – not sure either way
- Fairly ineffective
- Very ineffective

Comments:

4. To what extent do you feel that this intervention (parent coaching) seemed effective in increasing confidence in parenting and responding to your child's engagement in challenging behavior?

- Very effective
- Somewhat effective
- Neutral – not sure either way
- Fairly ineffective
- Very ineffective

Comments:

5. To what extent do you feel that this intervention (parent coaching) seemed effective in decreasing parent stress levels?

- Very effective
- Somewhat effective
- Neutral – not sure either way
- Fairly ineffective
- Very ineffective

Comments:

6. In the space provided below, please share your thoughts on this intervention.

Thank you so much for your time, this study could not have been done without you and your child's participation!

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