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## A Review of Manualized Behavioral Parent Training Interventions for Young Children with Problem Behavior

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A Review of Manualized Behavioral Parent Training Interventions for Young Children with  
Problem Behavior

by

Khendal I. Robinson

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Science in Applied Behavior Analysis  
Department of Child and Family Studies  
College of Behavioral and Community Sciences  
University of South Florida

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## DEDICATION

This thesis is dedicated to the memory of my grandfather, James Leon Isley, who passed away before the completion of my master's studies. In addition, this thesis is dedicated to my loving parents, Donna Isley and Frank Robinson, as well as my other family members and friends that supported me through this process.

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## ABSTRACT

Behavioral parent training (BPT) interventions have been developed to aid in the treatment of children with problem behavior. The goals of these interventions are to reduce child specific problem behavior and improve skills, and enhance parenting skills and competence. However, more information is needed on the manualized BPT interventions in particular, on children and parents who benefited from the BPT interventions, any individualized cultural adaptations made for families from diverse cultural backgrounds, and training provided to the parents to help them address their children' problem behavior during family routines. Therefore, this study reviewed literature on BPT interventions, in particular, single case experimental design studies designed for addressing problem behavior in young children needing individualized interventions. A total of 975 articles were initially identified. Of those, 11 were included in the final review. Results indicate that most studies targeted children with disabilities of families from the White population, provided both initial training and implementation support during intervention to parents, and assessed parent implementation fidelity and social validity. Some studies reported maintenance and generalization effects of the interventions. Findings suggest an increase in research involving parents from diverse cultural backgrounds, evaluating the needed adaptations made to the manualized interventions to support these diverse groups.

Note: Due to the COVID-19 pandemic the thesis requirements for students graduating from the USF ABA program in 2021 have been modified and may include fewer participants, case studies, or a literature review.



## CHAPTER ONE:

### INTRODUCTION

Parents of children with problem behavior endure unique parenting challenges that often require increased resource needs, leading to higher levels of parenting-related stress and a hindrance of positive familial growth (Estes et al., 2019; Hartley & Schultz, 2015; Marcus et al., 2001). The literature reports that problem behavior in early development can lead to lifelong impairments in social interactions with negative consequences in later in life, including criminal behavior and substance abuse (Campbell et al., 1996; Henry et al., 1996; Riddle et al., 2013). Therefore, early interventions for young children displaying problem behavior not only can lead to changes in developmental outcomes, but also prevent future problems and strengthen parent and family functioning (Estes et al., 2019; Marcus et al., 2001). Studies have shown that parents of children with problem behavior are prone to depression and anxiety due to their child's challenging behavior (Bitsika & Sharpley, 2004; Lai et al., 2015). This can then create a significant emotional burden for them to be involved in intervention implementation for their child. Therefore, it is vital to provide parent training interventions to address children's problem behavior in a way that parents can actively be involved in intervention design and implementation (Hartley & Shultz, 2015).

#### **Behavioral Parent Training Interventions for Young Children**

Behavioral parent training (BPT) interventions are generally conceptualized through behavioral or cognitive-behavioral paradigms and teach parents to interact more effectively with their children (Silverman et al., 2008). Using consistent behavioral techniques to increase desired

behaviors and to decrease the occurrence of undesired behaviors is focused (McMahon & Forchand, 2003). The literature indicates that BPT interventions have been effective for young children with problem behavior (Eyberg et al., 2008). In general, BPT interventions emphasize establishing positive parent-child interventions and presenting parents with choices and control over intervention scenarios in involving parents (Chronis et al., 2004; Serketich & Dumas, 1996). Typical intervention strategies for children who need individualized interventions encompass identifying and operationalizing the target behaviors, identifying antecedents and consequences of target problem behavior, using antecedent and consequence strategies that address the functions of problem behavior and teaching new behaviors (Marcus & Vollmer, 2001).

Family empowerment is a critical goal when involving parents and other family members in the intervention process (Brookman-Frazee, 2004). Professionals and researchers who value empowerment perceive parents and other family members as the ultimate decision-makers and actively facilitate collaborative effort during the process of designing and implementing an intervention plan (Brookman-Frazee, 2004). In a study with three 2-year-old boys diagnosed with ASD and their mothers, Brookman-Frazee focused on equal partnerships with family members and professionals in reducing each child's maladaptive behavior and increasing overall engagement in family-chosen activities. The findings of the study provide empirical support for empowering parents to implement in-home interventions due to a reduction in maladaptive behavior with an increase in desirable behavior among children diagnosed with ASD.

Brookman-Frazee stressed the importance of key factors that may influence empowerment or partnership with parents, such as mutually agreed upon goals, joint expertise and responsibility, ecocultural fit, problem solving collaboration, and a strength-based approach.

## Parental Adherence

The BPT intervention literature supports the use of the parents as the primary change agent (Nexon, 2002). Therefore, the success of a BPT intervention in addressing problem behavior in children with and without disabilities is dependent not only upon the effectiveness of the behavior interventions, but also the consistency of implementation by parents or other family members (Allen & Warzak, 2000). Allen and Warzak suggested that the environmental controlling variables that influence parental adherence may be the similar variables that are associated with the child's problem behavior. In addition, parental adherence variables could be organized under behavioral principles such as establishing operations, stimulus generalization, response acquisition, and consequent events (e.g., competing punitive contingencies or competing reinforcing contingencies).

Similarly, Moore and Symons (2009) examined the extent to which parents of children with ASD were adherent to prescribed treatment recommendations developed to manage problem behaviors at home. The authors found that adherence to medical treatment recommendations were greater than adherence to behavioral treatment recommendations, with greater adherence to reinforcement procedures than punishment procedures. The authors indicated that the reason for better adherence to medical treatment recommendations was likely a result of the familiarity of delivery schedule, immediacy of desired behaviors, and low response effort compared to behavior treatments that are often unfamiliar to caregivers. They also indicated that behavioral procedures involved dense schedules with the possibility of increased frequency of maladaptive behavior before desirable behavior became prevalent. The results of the study suggested that practitioners and researchers should work closely with parents to identify effective intervention procedures that are understood and coincide with the parent's

abilities, and that support to parents (e.g., coaching) be provided during parental implementation of the procedures to ensure for a successful outcome (Moore & Symons, 2009).

Yet, little information is available on the levels of training and implementation support the parents need to implement the interventions with fidelity. The current literature on BPT interventions report the dosage of an intervention in terms of the number of intervention sessions or intervention duration, length of each session, or frequency (e.g., weekly) of sessions (Gross et al., 2015; Rivard et al., 2017). Although BPT interventions for children with disabilities require ongoing parent training or implementation support given the intensity of the problem behavior (Baily & Blair, 2015), the BPT intervention literature provides limited information on the dosage of parent training and implementation support.

### **Culturally Appropriate Interventions**

Researchers have made efforts to culturally adapt, implement, and disseminate family-focused BPT intervention across ethnic and cultural groups (Bernal et al., 2009; Bernal & Santiago, 2005; Castro-Olivo et al., 2018). However, it has been reported that children with social-emotional and behavioral issues from culturally diverse backgrounds are significantly under treated or receive inadequate treatment (Peterson et al., 2017). Baumann et al. (2015) found only eight out of 610 studies on evidence-based parent training interventions documented a rigorous cultural adaptation process. In addition, Coard et al. (2004) found that traditional parent training models were developed and evaluated primarily with White, middle-class parents, and limited attention has been paid to families from varying cultural, racial, and ethnic backgrounds, indicating a dearth of empirical research demonstrating the efficacy of culturally relevant parent training interventions. The limited research on varying cultural, ethnic, and

radical groups has led to limited models of treatment delivery and cultural adaptation (Baumann et al., 2015).

Culture adaptation is defined as “the systematic modification of an evidence-based treatment to consider language, culture, and context in such a way that it is compatible with the client’s cultural patterns meanings and values” (Bernal et al., 2009. P. 362). The literature indicates that adaptations made to fit a family’s cultural background may improve the relevance, acceptability, effectiveness, and sustainability of the intervention (Baumann et al., 2015). Furthermore, it is suggested that the deficiency in services pertaining to diverse populations be identified and addressed through examination of clinician-related factors (e.g., obtaining knowledge, skills, and attitudes to increase cultural competence) and system factors (e.g. staff training encompassing cultural competence and employment of diverse staff and clinicians) (Peterson et al., 2017).

In a meta-analysis of mental health interventions, Griner and Smith (2006) found that interventions adapted to a specific cultural group were four times more effective than interventions provided without adaptation. In addition, they found that interventions delivered in the participant’s native language were twice as effective as interventions delivered in English (Griner & Smith, 2006). Yet, the literature provides limited information on using BPT interventions for young children with problem behavior who need individualized interventions and who are from families of culturally diverse backgrounds.

### **Manualized BPT Interventions for Young Children**

Evidence-based BPT training interventions focus on parents utilizing specific behavioral strategies to reduce a child’s problem behavior and increase desirable behavior as discussed earlier. Increased research on parent-child interactions has led to the development of various

manualized BPT training interventions that can be used in the home setting to positively impact child behaviors (Long et al., 2017). The primary focus of manualized interventions is to provide a protocol or manual to maximize the intervention outcomes and promote the sustainability of the interventions (Johnson et al., 2007; Ingersoll et al., 2020).

A number of evidence-based or promising BPT interventions that are manualized and designed to address problem behavior in young children have been reported in the literature Booth & Keenan, 2018), such as Incredible Years parent training program (Webster-Stratton, 2001), Parent-Child Interaction Therapy (PCIT, Fernandez et al., 2011), Triple P-Positive Parenting Program (Sanders, 2003), Helping the Noncompliant Child (Honeycutt et al., 2015), and Prevent-Teach-Reinforce for Families model (PTR-F; Dunlap et al., 2017).

The Incredible Years (IY) training program contains interventions components for parents with the goals of promoting parent competencies and strengthening families targeting children between the ages of 2- and 8-years-old utilizing the BASIC and ADVANCE parent training (Long et al., 2017). The BASIC parent training program takes up to 26 hours to complete and contains 250 vignettes that model parenting skills. A key component of this training is to enhance parent-child relationships through the use of incentives, praise, and child-directed play (Long et al., 2018). In addition, the ADVANCE parent training program can be utilized following the completion of the BASIC parent training program. The primary components of the ADVANCE program include personal self-control, communication skills, problem solving skills, and strengthening social support and self-care (Webster-Stratton & Reid, 2003; Long et al., 2017).

The Parent-Child Interaction Therapy (PCIT) is designed to increase compliance and decrease disruptive behavior in children between the ages 2 and 7 years and is individually

delivered intervention, which involves providing direct coaching and immediate feedback to parents (Fernandez et al., 2011). However, it has been used to address numerous behavioral and emotional issues (Lieneman et al., 2017). The intensive PCIT (I-PCIT) typically requires 90-min sessions each day for 5 days across a 2-week period with the total treatment course lasting 10 sessions (Lieneman et al., 2017). The studies on I-PIT have targeted children who were between the ages of 3 and 8 and reported high satisfaction among participants and was effective in reducing behavior problems, improving parenting skills, and decreasing parenting stress (Graziano et al., 2015).

The Triple-P Positive Parenting Program (Triple P) is a multilevel parent training program that targets children between the ages of 2- and 12-years-old (Sanders et al., 2014; Long et al., 2017). Level 1 provides universal parent information, while Level 2 includes one or two brief intervention sessions to target children with mild behavior problems. Level 3 consists of a more intensive, four session parenting intervention that targets children with mild to moderate behavior problems. Level 4 includes 8 to 10 either individual, or group parent training interventions that target children with more significant behavior problems. Finally, Level 5 is an enhanced behavioral, familial intervention program for significant behavior problems that could be influenced by other factors within the home (Long et al., 2017). The studies on Level 5 has reported lower levels of observed negative child behavior, improved parental competence, and reduced maternal stress (Robert et al., 2006; Plant & Sander, 2007).

Helping the Noncompliant Child (HNC) is a parent training intervention that targets children between the ages of 3 and 8 years old, that exhibit high levels of noncompliance to parental instruction (Forehand & McMahon, 1981; Long et al., 2017; McMahon & Forehand, 2003). The goal of the intervention is to improve child compliance to parental instruction and

decrease disruptive behavior by providing parents with appropriate ways of interacting with their child using two phases. During Phase 1, differential attention skills are taught to increase desirable behaviors and improve the parent-child relationship. Phase 2 involves teaching compliance training skills to assist parents in appropriately handling both noncompliance and other problem behavior (Long et al., 2017). The HNC program has been shown to be an effective intervention that not only reduces problem behaviors in children, but also promotes a reinforcing parent-child relationship (Honeycutt et al., 2016).

The Prevent-Teach-Reinforce (PTR-F) model (Dunlap et al., 2017) is an extension of the school-based PTR model (Dunlap et al., 2010). The PTR-F model is designed to address behavioral challenges in children between the ages of 2 and 10 years old in home and community settings utilizing a 5-step model, who have behavioral challenges that require intensive intervention support. Thus, the studies on this model have mostly included children with ASD (Bailey & Blair, 2015; Sears et al., 2013; Santiago, 2018 ). These steps include: (1) initiating the PTR-F process, (2) PTR-F assessment, (3) PTR-F intervention, (4) coaching, and (5) monitoring plan implementation and child progress. The PTR-F focuses on conducting functional behavior assessments and designing an intervention plan based on the identified environmental variables associated with the occurrence of problem behavior and emphasizes the collaborative effort between family and professional facilitator (coach) to establish contextual fit (Emick, 2018; Santiago, 2018).

Although the current literature on manualized BPT interventions yields various results and a few systematic and meta-analytic reviews support the efficacy of the interventions and provide an overview of findings from empirical studies (Maughan, et al., 2005; McIntyre, 2012), gaps in research remain. Currently, there is limited knowledge on the efficacy of the manualized



BPT interventions for individual children with problem behavior evaluated using single case experimental designs (SCD) that involve a small number of participants, repeated measurements, systematic introduction of intervention, and visual analysis of data. In a systematic review of empirical studies on manualized BPT interventions published from 2003-2012 and designed to reduce challenging behavior in children with intellectual disabilities and developmental disabilities, McIntyre (2012) identified only three SCD studies out of 19 reviewed studies. In addition, there is insufficient review research examining the methods and dose of parent training and implementation support and any individualized cultural adaptations made to the intervention.

### **Current Study**

To fill the gap in the literature, this study set out to examine SCD studies on manualized BPT interventions targeted children between the ages of 3 and 8 years old, exhibiting problem behavior in the home setting. Specific objectives were to: (a) identify general characteristics of the studies (participants' backgrounds, target behaviors, intervention components and dose; (b) cultural adaptations made; (c) methods and dose of initial parent training and implementation support, and (d) prevalence of assessments of fidelity and social validity and evaluation of maintenance or generalization effects.

## **CHAPTER 2:**

### **METHOD.**

#### **Literature Search and Eligibility Criteria**

Study identification included electronic search and selection strategies. PsycINFO, Web of Science, and Google Scholar database searches were performed using combinations of the following terms: ‘manualized parent training’ AND ‘family’ AND ‘prevent-teach-reinforce’, ‘manualized parent training’ AND ‘family’ AND ‘incredible years’, and ‘manualized parent training’ AND ‘family’ AND ‘helping the noncompliant child’ or ‘manualized parent training’ AND ‘family’ AND ‘positive parenting’. Database searches were conducted in February 2021 by selecting peer-reviewed articles and unpublished thesis and dissertation research written in English language. The searches were not limited by year. The initial search resulted in 968 articles collectively (271 from Web of Science, 423 from PsycINFO, and 280 from Google Scholar). Of these, 97 articles were removed due to titles and duplication. The remaining 871 articles were screened and selected according to the following eligibility criteria: (a) involved children exhibiting problem behavior; (b) included all children ages 3 to 8 years; (c) implemented a manualized parent training intervention; (d) used a SCD; (e) published in English; (f) parent or caregiver involvement as implementer; (g) intervention took place in the home setting.

#### **Article Selection Procedures**

Screening of duplicates and titles resulted in the elimination of 871 studies that did not meet setting or design inclusion criteria. Next, 77 records were excluded following abstracts screening due to not meeting the design inclusion criterion. Following abstract screening, nine

articles remained to undergo full-text review to determine eligibility for inclusion. The abstract screening excluded 11 studies for not using a SCD ( $n = 8$ ) or age of child participants not meeting the criterion ( $n = 3$ ). The full-text reviews excluded one article for not using an SCD. In total, one article was eliminated during the full-text review, leaving eight studies for in-depth review. An additional seven studies were included in the literature review search. Of the seven additional articles, one was excluded because it was not a SCD and three were excluded because the intervention did not take place in the home setting. Finally, through reviews of previous systematic or meta-analytic review studies, three additional articles meeting the inclusion criteria were identified. Figure 1 depicts the study selection process. Of these, five studies were unpublished thesis (Joseph, 2016; Santiago, 2018) or dissertation (Majszak, 2017; Phosaly, 2017; Wagner, 2011).

### **Variable Coding**

To examine the child participant characteristics: (a) age, (b) diagnosis, (c) number of participants, and (d) gender were coded. Child age was converted into years when the age information was provided in months. In addition, diagnosis was coded when this information was available. To examine the parent participant characteristics: (a) number of participants, (b) race or ethnicity, and (c) education level were coded. To examine the study characteristics, the following variables were coded: (a) name of intervention, (b) dependent variables, (c) cultural adaptations, (d) target routine, (e) frequency of intervention, and (f) duration of intervention.

Additional variables included: (a) initial parent training, (b) parent implementation support, (c) implementation fidelity, (d) social validity, (e) maintenance, and (f) generalization. Initial training examined duration and method. Implementation support examined frequency, duration, and method. Duration was recorded using minutes and hours whereas frequency was recorded

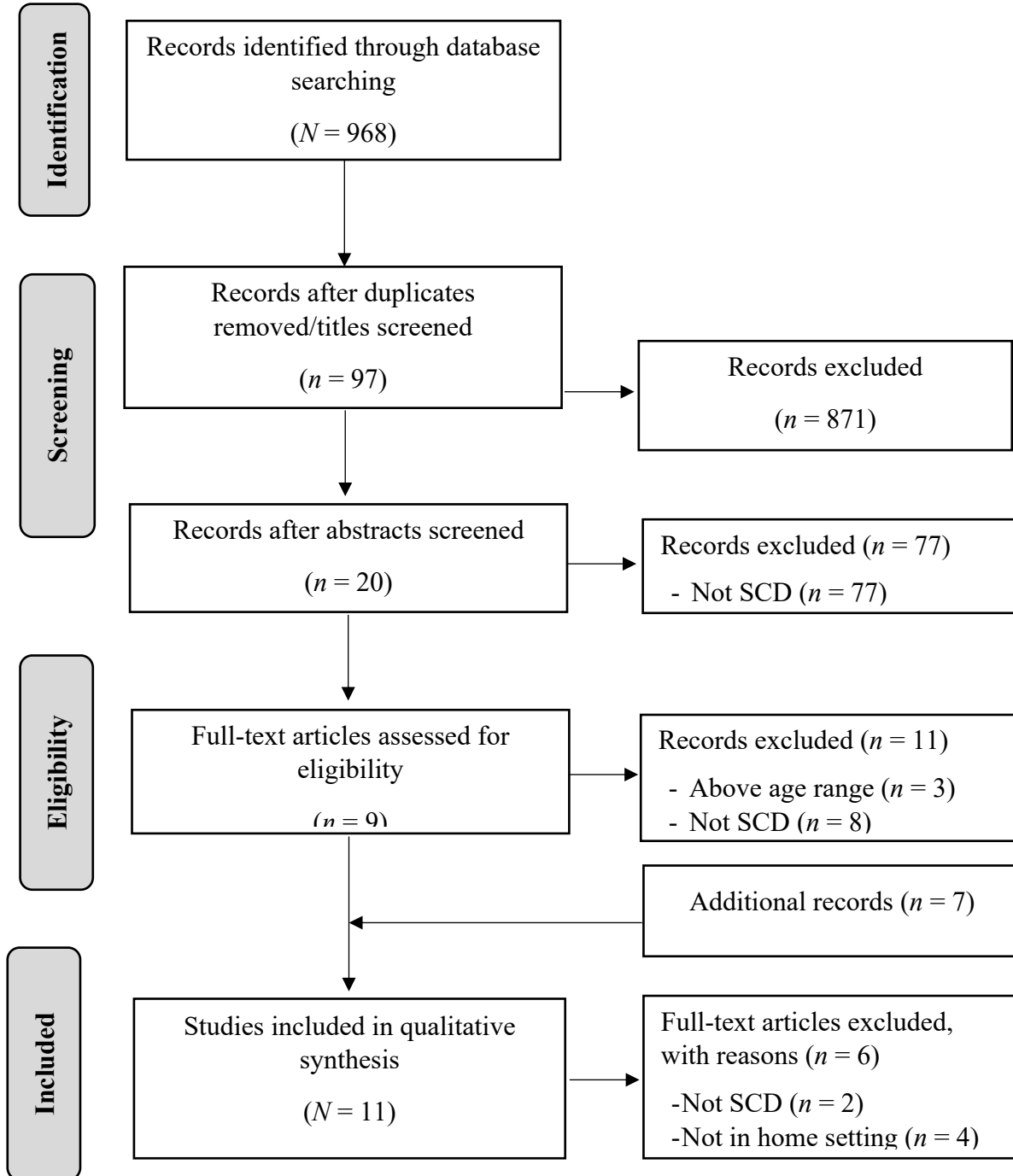
based on the number of events per week. Implementation fidelity examined measurement system and percentage. Percentage was recorded as either a single percentage or range. Social validity examined the response method and respondent. Response method was recorded with 'Q' for questionnaire or 'I' for interview. Respondents were recorded as either parent or parents (if both parents completed the social validity assessment). If any information was not available in the study, 'NR' or not reported was utilized in the column.

### **Interrater Reliability**

In each of the title, abstract, and full-text screening phases, articles were independently reviewed and excluded if they did not meet the criteria by the primary and secondary coder. The primary coder was the researcher and the secondary coder was a doctorate student enrolled in an Applied Behavior Analysis program. In each of the study selection process, the initial interrater agreement averaged 96%, ranging from 90 to 100%. Any discrepancies were discussed to reach 100% agreement. When finalizing the 11 articles for analysis and during variable coding, the full text of each article was independently reviewed and discussed.

Figure 1

Summary of Systematic Search and Screening Procedures



## CHAPTER THREE:

### RESULTS

#### Participant Characteristics

The results indicate that a total of 39 children participated in the 11 reviewed studies. Four of the six children who participated in the study by Boyle (2009) and one of the five children who participated in the study by Ware (2008) were excluded from the analysis due to not meeting the age inclusion criterion. All studies included male children with only two studies (Boyle, 2009; Joseph, 2016; Ware, 2008) including female children (15%; 6/39). The number of child participants ranged from 3 to with the most common diagnosis being autism spectrum disorder (ASD). Finally, the age of the child participants ranged from 3 to 8 years old.

Across the studies, 49 parents participated in the studies. Two studies involved both parents (Bailey & Blair, 2015; Boyle, 2009). The number of parent participants ranged from 3 to 12, and 73% ( $n = 8$ ) of the studies reported the racial/ethnic background of the parents. The most common racial/ethnic background was White, but Russian, Middle Eastern, and Hispanic were included in 25% ( $n = 2$ ) of the studies. Only 36% of the studies ( $n = 4$ ) reported parents' education level.

#### Interventions

Across studies, four manualized BPT interventions were evaluated: PTR-F, Tiple-P, PYWTC, and PCIT. Of the 11 studies, 45% ( $n = 4$ ) of the studies used the PCIT, with four studies evaluating the PTR-F in supporting children with problem behavior and their families, two studies evaluated Play Your Way to Compliance (PYWTC), and one study evaluated Tiple-P.

## **Target Behaviors and Routines**

Target routines were different across all studies; however, they all occurred within daily family routines (e.g., getting dressed, playtime, bedtime, mealtime). The primary dependent variables were child behaviors, which included problem behavior (e.g., out-of-area, aggression, flopping, task refusal) and appropriate or replacement behavior (e.g., on-task, compliance, vocalizations, dressing appropriately). The secondary dependent variables included parent implementation fidelity, compliance (Boyle, 2009; Chengappa, 2017; Masee, 2016; Ware, 2008), parental stress (Majsak, 2017; Phosal, 2017), and satisfaction.

## **Cultural Adaptations**

Cultural adaptations were made only in one study (Santiago, 2018). The adaptations included translation of PTR-F materials from English to Spanish and selecting intervention strategies that were sensitive to the family's culture (e.g., allowing child to cuddle with mom before start of morning routine). Despite families of various cultures involved in Phosal (2017), the author did not report any cultural adaptations made for the families in designing and implementing the interventions.

## **Intervention Dosage**

In examining the intervention dosage, we analyzed the frequency and duration of the intervention implementation. Results indicated that frequency of the intervention ranged from 1 day per week to 4 days per week with one study (Boyle, 2009) not reporting the information. Duration of the intervention was reported across all studies with a maximum of 50 sessions (Phosal, 2017), which was related to implementing PYWTC and a minimum of 9 sessions (Joseph, 2016), which was related to implementing PTR-F.

## **Parent Training**

All except one study (Boyle, 2009) reported information on initial training duration and method. Most initial trainings lasted a minimum of 15 min with a maximum of 1.5 h. The most common training method used during initial trainings was behavioral skills training (BST; Miltenberger, 2008). The intervention required the least training time was PYWTC (Majszak, 2017; Phosalay, 2017), whereas PTR-F required the most training time (Bailey & Blair, 2015; Joseph, 2016; Santiago, 2018; Sears, 2012). Of the 11 studies, 45% of the studies used BST in training parents before they implemented the interventions. The next most common training method was modeling, which was used in 36% of the studies ( $n = 4$ ).

### **Implementation Support Dosage and Methods**

Implementation support was reported in 67% ( $n = 7$ ) of the studies. Four studies (Boyle, 2009; Chengappa, 2017; Masee, 2016; Wagner, 2011) did not provide information on implementation support. Implementation support was delivered for a minimum of 10 min per week (Bailey & Blair, 2015) with a maximum of 90 min per week (Phosalay, 2017). Methods of support included in-vivo coaching, modeling, rehearsal, feedback, problem solving, or side-by-side support.

### **Assessments of Fidelity and Social Validity**

All studies except two studies (Wagner, 2011; Ware, 2008) reported assessment of fidelity. Most implementation fidelity ranged from 80%-100% with the lowest range 48%-100% reported from Boyle (2009). Questionnaires were the most common social validity measure with two studies (Majszak, 2017; Phosalay, 2017) including both child and parent respondents. In one study (Bailey & Blair, 2015), interviews with parents were conducted, in addition to using questionnaires to assess social validity. Although the information on social validity assessment is not provided in five studies (Boyle, 2009; Chengappa, 2017; Masee, 2016; Wagner, 2011;



Ware, 2008), the remaining reviewed studies reported high social validity of the interventions they used, indicating high acceptability of the intervention goals, procedures, and outcomes.

### **Evaluation of Maintenance and Generalization Effects**

More than half of the studies (73%;  $n = 8$ ) evaluated the maintenance effects, and 36% ( $n = 4$ ) studies evaluated generalization effects. Most studies reported maintenance data from a 1-to 2-week follow-up (Bailey & Blair, 2015; Boyle, 2009; Majszak, 2017; Phosaly, 2017; Wagner, 2011). Although data are not included in the table, the types of generalization assessed varied by study and included generalization to a novel routine (Boyle, 2009; Sears, 2012) and generalization to other behaviors (Majszak, 2017; Phosaly, 2017).

## CHAPTER 4

### DISCUSSION

A review of manualized parent training interventions for young children with problem behavior yielded six published studies meeting criteria for the current review (Bailey & Blair; Boyle, 2009; 2015; Chengappa, 2017; Masee, 2016; Sears, 2012; Ware, 2008). While there is a large number of published studies that evaluate the outcomes of BPT interventions through group design research, the results of this review indicate that there is a lack of research evaluating intervention outcomes using a SCD. Due to this lack of manualized BPT intervention research evaluated using SCD, thesis and dissertation articles were included, bringing the total to eleven included articles.

Results indicated that the children with ASD benefited most from the manualized BPT interventions. Across studies, a total of 39 children participated in the study. Of these, 18 children were children with ASD. In two studies both mothers and fathers participated in the study, indicating that mothers alone are typically involved in the intervention process. The target problematic routines included: getting dressed, brushing teeth, leaving home and mealtime. This implies that children with problem behavior in particular, children with disabilities have difficulty adjusting to daily family routines. The results also showed that the BPT interventions targeted various problem behaviors (e.g., out-of-area, aggression, flopping, task refusal) and replacement or desirable behaviors (e.g., on-task, compliance, vocalizations, dressing appropriately), which indicates that BPT interventions can successfully be applied in the home setting.

Though sufficient information was provided on child participants in each article, limited information was available on the parent participants. Although the racial or ethnic background information was reported in most studies (e.g., Bailey & Blair, 2015; Chengappa, 2017; Masee, 2016; Phosaly, 2017; Santiago, 2018; Sears, 2012; Wagner 2011; Ware, 2008), the education level of the parent participants was reported in a few studies (e.g., Boyle, 2009; Chengappa, 2017; Phosaly, 2017; Wagner, 2011). Without specific parent information, it becomes difficult to determine if the BPT interventions are useful for all parents or only parents who belong to a certain demographic. With parents expressing difficulty with accessibility to services for their child, a successful treatment protocol that accounts for the individual characteristics of the family becomes increasingly difficult to achieve (Thomas et al., 2007). If the intervention is only successful for a smaller demographic of parents, future research should focus on these discrepancies and create an intervention that is inclusive to all parents or provide guidelines on how to adapt the interventions.

The results of the current review show that there are a few good choices for BPT interventions for young children with problem behavior who need individualized support although primarily only four types of manualized BPT interventions have been utilized in the literature. Across studies, PTR-F, Triple-P, PYWC, and PCIT were evaluated. Interventions such as IY and HNCC have been heavily researched; however, the outcomes of these interventions have only been evaluated through group study designs. However, the results highlight that little is known about the cultural adaptations of the evidence-based or promising BPT interventions. It was found that only one of the eleven studies included information on adaptations of language and the delivery of the intervention (Santiago, 2018). Santiago focused on modifying components of the worksheets in the areas of behaviors, antecedents, and settings, and shortened

steps to require fewer meetings for setting goals, assessing behaviors, and developing and implementing the intervention. Although Santiago provided helpful information on the areas that need adaptations when using a standardized manualized BPT intervention for parents and their children from diverse cultural backgrounds, more research is needed to provide guidance on how to support these parents and children and enhance the outcome of the BPT interventions (Davenport et al., 2018). Phosaly (2017) included parent participants with varying racial or ethnic background, but did not report any adaptation made to the intervention. Though the outcome of the intervention was positive, the addition of cultural adaptations would have allowed for a more individualized intervention. In order to eliminate disparities among families, evidence-based interventions must be adapted to include the client's culture to create the most effective intervention (Baumann et al., 2015).

In line with previous reviews on behavioral interventions, the results indicate limited research on BPT interventions for children with and without disabilities displaying problem behaviors report maintenance and generalization results (Lundahl et al., 2006). A strength of the body of literature on BPT interventions for children with problem behavior who are in need of individualized intervention was found to be the evaluations of maintenance effects. Maintenance data were reported in eight studies whereas generalization data were reported in four out of the 11 articles included for review. Without reported generalization and maintenance measures, the success of the intervention is unclear. An intervention that increases or decreases a behavior is of little use if the behavior change is not observed in various settings or fails to continue after the intervention (Arnold-Saritepe, 2009).

A major limitation of this review is the inclusion of the immitted number of published studies, which may show the overall lack of SCD research evaluating manualized BPT

interventions. It is also possible that there may be relevant studies that were not found during database search. Using a SCD is a valid and scientific approach when examining experimental control in an intervention study and allows for the measurement of intra-individual effects (Gage & Lewis, 2013). The purpose of SCD research is to isolate the potential causal relationship between both independent and dependent variables to find a functional relationship (Gage & Lewis, 2013). In contrast, group designs focus on a pool of subjects from a population with results focusing on the general population rather than the individual subject. The addition of SCD research on manualized BPT interventions would allow for each participant to be individually assessed, which in turn allows for a more comprehensive intervention. Therefore, future research should further examine SCD studies containing cultural adaptations and suggestions on how each component of the intervention can be adapted.

The present findings confirm that the BPT interventions are effective in addressing problem behavior in young children with problem behavior who need individualized intervention support. Across all reviewed studies, the participating children's targeted problem behavior decreased while appropriate replacement or desirable behavior increased. In conclusion, this review adds to the BPT intervention literature by examining SCD research as well as cultural adaptation components. Future research could focus on the components of both SCD and group design to examine any potential differences in the delivery of the BPT intervention.

**Table 1**

**Participant Characteristics, Dependent Variables, Intervention Characteristics, and Dosage**

Author (year)	Child Participants					Parent Participants		Dependent Variables	Intervention			Intervention Dosage	
	n	Age (yr)	Diagnosis	Gender	n	Racial/Ethnicity	Edu.		Name	Cultural Adaptions	Target Routine	Frequency	Duration
*Bailey & Blair (2015)	3	5-7	ASD or language delay with SPD	3 M	6	White	NR	PB (Prolonging dressing routine, aggression, refusal); RB (dressing, appropriate vocalization, wearing seat belt)	PTR-F	N	Getting dressed, Car ride, Playtime with brother	3 days per wk	30 sessions
*Boyle (2009)	6	3-6	NR	3 M 3 F	12	NR	College degree	Changes in child disruptive behavior, compliance	Triple-P	N	Transitions Child-led play, parent-led play, clean-up	NR 2 days per wk	20-28 sessions
*Chengappa (2017)	3	3, 6, 7	NR	3 M	3	White	High school	Positive parenting composite, effective commands, negative parenting composite, child compliance	PCIT	N			20-30 sessions
Joseph (2016)	3	3	NR	2 M 1 F	3	NR	NR	PB (TR, LV, flopping, noncompliance, elopement); RB (Compliance, accept changes in routine)	PTR-F	N	Leaving home, Bedtime	1 day per wk	9-17 sessions
Majszak (2017)	3	3,5	ASD	3 M	3	NR	NR	Compliance	PYWTC	N	Play, Hygiene, Clean up, Mealtime, Bedtime	3 days per wk	30 sessions
*Masse (2016)	3	3, 4	ASD	3 M	3	White	NR	Compliance, positive parenting, ECBI	PCIT	N	Child-led play, parent-led play, clean-up	2 days per wk	16-21 sessions
Phosalay (2017)	4	6	ASD	4 M	4	Russian, White, Middle Eastern	College degree	Compliance, parental stress	PYWTC	N	Play, Hygiene, Clean up, Mealtime, Bedtime	3 days per wk	30-50 sessions

**Table 1 (Continued)**

Author (year)	Child Participants					Parent Participants		Dependent Variables	Intervention			Intervention Dosage	
	<i>n</i>	Age (yr)	Diagnosis	Gender	<i>n</i>	Racial/Ethnicity	Edu.		Name	Cultural Adaptions	Target Routine	Frequency	Duration
Santiago (2018)	3	3-5	ASD	3 M	3	Hispanic	NR	PB (TR, LV, flopping, AGG, crying); RB: (Completion of morning routine, appropriately getting dressed, completion of tooth brushing)	PTR-F	Translation of materials, cuddle with mom	Getting dressed, Showering & getting dressed, Tooth brushing	2-4 days per wk	13 sessions
*Sears (2012)	2	4, 6	ASD	2 M	4	White	NR	PB (Inappropriate chewing, tantrum) RB; (Independent completion of bathroom steps, eating unfamiliar food, compliance)	PTR-F	N	Car ride, Mealtime, Bathroom	1-2 days per wk	10-20 sessions
Wagner (2011)	4	5, 6	ADHD	4 M	4	White	College degree	On-task, out-of-area	PCIT	N	Coloring	2 days per wk	22 sessions
*Ware (2008)	4	4, 5, 7	DBD	2 M 2 F	4	White	NR	Compliance, caregiver positive behavior, caregiver negative behavior	PCIT	N	Child-led play, parent-led play, clean-up	2 days per wk	7-24 sessions

*Note.* \* = published study, ASD = autism spectrum disorder, DBD = disruptive behavior disorder, ECBI = eyberg child behavior inventory, HS = high school, DO = diploma, NR = no reported; M = male; F = female; Edu. = education; PB = problem behavior; RB = replacement behavior; TR = task refusal; LV = loud vocalizations; AGG = aggression; PTR-F = Prevent-Teach-Reinforce for families; PYWTC = Play Your Way to Compliance; PCIT = Parent-Child Interaction Therapy; wk = week

**Table 2****Parent Training and Implementation Support, Assessments of Fidelity and Social Validity, and Evaluation of Maintenance and Generalization Effects**

Author (year)	Initial Training		Implementation Support		Implementation Fidelity		Social Validity		M	G
	Duration	Method	Frequency & Duration	Method	Measurement System	%	Response Method	Respondent (n)		
*Bailey & Blair (2015)	30 min-1 hr	BST	10-35 min per wk	In-vivo coaching, modeling, rehearsal, feedback	% of steps	87-100	Q, I	Parents (6)	2-wk	N
*Boyle (2009)	NR	NR	NR	NR	% of steps	48-100	NR	NR	2-wk	Y
*Chengappa (2017)	20 min- 1.15 hrs	BST	NR	NR	% of steps	83-100	NR	NR	2- mo	N
Joseph (2016)	1-1.5 hrs	BST	15-30 min per wk	Problem-solving discussion, side-by-side support	% of steps	86-100	Q	Parents (3)	N	N
Majszak (2017)	15 min	Adult-peer modeling video	60-90 min per wk	Modeling, rehearsal, coaching, feedback	% of steps	92	Q	Child (3) Parent (3)	2-wk	Y
*Masse (2016)	1 hr	BST	NR	NR	% of steps	97-99	NR	NR	12-wk	N
Phosalay (2017)	15 min	Adult-peer modeling video	60-90 min per wk	Modeling, role-playing, behavioral coaching, feedback	% of steps	95	Q	Parent (4) Child (4)	2-wk	Y
Santiago (2018)	30-40 min	Modeling,	15-40 min per wk	In-vivo coaching, , side-by-side guidance, feedback, problem solving	% of steps	100	Q	Parent (3)	N	N
*Sears (2012)	30 min	BST	15 min per wk	In-vivo coaching	% of steps	88-100	Q	Parents (4)	N	Y
Wagner (2011)	30 min	BST	NR	NR	NR	NR	NR	NR	2-wk	N
*Ware (2008)	1 hr	Lecture, modeling, role-playing, handouts	30 min per week	In-vivo coaching	NR	NR	NR	NR	1-mo	N

Note: \* = published study, MO = month, I = interview, G = generalization, M = maintenance, Q = questionnaire



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