

An Analysis of Training, Generalization, and Maintenance Effects of Enhanced Primary Care  
Triple P for Parents of Preschool-Age Children with Disruptive Behavior

By

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## Abstract

A brief primary care intervention for parents of preschool-age children with disruptive behavior, Primary Care Triple P (PCTP), was assessed using a multiple probe design. PCTP teaches parents procedures such as praise, modeling, incidental teaching, differential reinforcement, time-out, planned ignoring, least-to-most methods of prompting, and behavior management routines for noncompliance. Parents learn about causes of common behavior problems, goal-setting, and how to self-monitor their implementation, as well as their children's behavior change. The study examined if newly learned parenting skills would generalize from training to non-training settings, if generalized skills would result in corresponding decreases in child disruptive behavior in non-training settings, and if these decreases would generalize over time. The 4-session intervention was sequentially introduced within a multiple probe format to each of 9 families with a total of 10 children whose ages were between 3-to 7-years. Direct observation of parent-child interaction in the homes found PCTP to be associated with lower levels of child disruptive behavior in target training and various generalization settings. Parent report data also confirmed reductions in intensity and frequency of disruptive behavior, an increase in task-specific parental self-efficacy, improved scores on the Parent Experience Survey, and high levels of consumer satisfaction. However, no significant reductions in aversive parent behavior were shown, nor increases in parent management skills, although trends for both were in the predicted direction. Decreases in observed child disruptive behavior were maintained by most families in training and generalization settings at follow-up. Parent-reported changes in task-specific parental self-efficacy measured at post-intervention continued into follow-up, thus providing

further support for the short-term durability of PCTP. Implications for the delivery of brief interventions to prevent conduct problems are discussed.

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## Introduction

Prior to the 1960s there was no evidence base for parenting advice. Before the 20<sup>th</sup> Century, all parenting “advice” was from family, close friends, or interpretations from religious sources. *The Common Sense Book of Baby and Child Care* (Spock, 1946) was the primary source for medical and behavioral advice for parents and is still widely used today. Nondirective “client/centered” approaches for adults, popular in the 60s and 70s, were extended to children in a popular book for parents, *Parent Effectiveness Training* (Gordon, 1970). Bernal, Klinnert, and Schultz (1980) conducted the only comprehensive study comparing child-centered parent training to behavioral parent training and found that behavioral parent training was more effective and parents preferred it considerably to a child-centered approach. Studies showing an evidence base for adaptations of learning theory for training parents began with case studies and then simple single-case research design studies. In the 1980s, evidence-based parent training was extended to a broader range of child behavior disorders. From the 1990s to now, some evidence-based practices grew such that group designs were used to evaluate and compare them. Now, many programs are engaged in implementation research aimed at examining how to take efficacy to effectiveness while maintaining favorable outcomes and fidelity to the original models (Lutzker & Edwards, 2009). Though behavioral parent training research has established what interventions parents must implement to effectively manage their children’s behavior, it is not clear whether research has firmly established whether parents’ implementation will generalize to relevant persons, settings, and situations outside the training setting. Presented next is a brief history of behavioral parent training that highlights key points in its progression from case studies in

the 1960s to larger-scale studies that have established behavioral parent training as an empirically validated intervention for child disruptive behavior. This historical review will identify what has been accomplished in answering questions about generalization and set the foundation for the rationale behind the current study.

In its earliest stages, behavioral parent training research was primarily concerned with establishing the efficacy of interventions. Typically, parents were trained in simple discrete skills with direct observation of short-term changes serving as the measure of intervention success. Possibly the earliest intervention to decrease undesirable child behaviors based on learning principles can be traced to a case study which described parents being trained to eliminate their child's bedtime crying and screaming by ignoring it (Williams, 1959). Single-case research design and descriptive case studies that followed in the 1960s mostly focused on determining the utility of training individual parents as change agents and establishing the effectiveness of interventions based on behavioral principles for decreasing undesirable child behavior (O'Dell, 1974). A common approach to intervention in early studies was to interview parents about their concerns and provide for them a set of instructions to follow to reduce undesirable behaviors (Cone & Sloop, 1974). Target behaviors included nocturnal enuresis, tantrum behaviors (Wetzel, Baker, Roney, & Martin, 1966), fire setting (Holland, 1969), school refusal (Kennedy, 1965), bowel retention (Peterson & London, 1964), and defiance (Shah, 1969). Although positive outcomes were reported, there were few procedural details, and follow-up data were most often absent. Thus, in its earliest form, behavioral parent training consisted of demonstrations showing that learning theory could be effectively applied to address discrete child behaviors in the short term, under the direction of professionals.

A step towards a stronger evidence base for behavioral parent training occurred when researchers began assessing outcomes by systematically manipulating independent variables and directly observing effects on child behavior. These studies demonstrated the effectiveness of social learning principles and procedures in addressing child disruptive behavior with parents as change agents. Some studies involved AB designs, which involved collecting baseline data for a single family, followed by introduction of some kind of intervention. However, these studies lacked experimental control, which limited the strength of conclusions that could be drawn. Overall, the absence of randomized control trials or replications of robust single-case designs weakened conclusions about internal and external validity.

Another step toward building a stronger evidence base for behavioral parent training occurred with more studies utilizing reversal, or ABAB designs, in which direct observation baseline data were collected, intervention was introduced, intervention was withdrawn, and then introduced again. For example, Wahler (1969) trained two sets of parents to reduce child disruptive behaviors and increase desirable behaviors by implementing differential reinforcement, timeout, and extinction procedures. An ABAB design demonstrated that when these procedures were introduced, desirable child behaviors increased. When parents stopped implementing the procedures, child disruptive behaviors were observed to return to baseline levels. With reintroduction of the procedures, desirable child behaviors again increased. Thus, the introduction of more controlled research designs permitted stronger conclusions about the effectiveness of behavioral parent training interventions.

Further improvements in research methods and quality of training occurred in the late 1960s and throughout the 1970s, with more use of ABAB, multiple baseline, and group

designs. Use of multiple baseline and group designs further expanded the strength of the evidence base for behavioral parent training to non-reversible behaviors that could not be assessed through reversal or withdrawal designs. Research during this time showed that individual parents could be successfully trained to carry-out procedures for discrete behavior problems under the direction of a professional by simply following instructions, however, parents may have had little or no understanding of behavioral principles. This approach begged questions about generalization, such as whether parents would again need the assistance of a professional when confronted with new behavior problems. Further, many of the studies during that time frame failed to provide sufficient detail on training procedures to enable replication (Johnson & Katz, 1973). For example, descriptions of treatment dosage, prescribed reinforcement schedules and how they were faded or not, and instructional techniques used to train parents to gather reliable data on child behavior were omitted. There were confounding variables such as history and maturation, parent reactivity to direct observations, and instrument decay/absence of reliability measurements as deficiencies that precluded clear-cut interpretation in the majority of the studies reviewed. The absence of formal follow-up observations was frequent, with follow-up measured indirectly, for example, by telephone. Thus, while research improved with the introduction of better single-case designs, there were still a number of procedural limitations that precluded systematic replication of interventions using parents as change agents.

Some of these limitations were addressed by three prominent parent training research groups in the late 60s and 70s: Patterson and colleagues (Patterson & Reid, 1973; Patterson, 1974; Wiltz & Patterson, 1974; Arnold, Levine, Patterson, 1975; Patterson & Fleischman, 1979) in Oregon, Wahler and colleagues (Wahler, Winkel, Peterson, Morrison, 1965;

Wahler, 1969; Wahler & Fox, 1980) in Tennessee, and Hanf and colleagues (Hanf, 1969; Hanf, 1970; Hanf & Kling, 1973), also in Oregon (Roberts, 2008). Each added to the strong evidence base of research showing that parents could be taught to correctly implement interventions with their children that resulted in improved child behavior. Further, each contributed to the developing technology of behavioral parent training by using sophisticated measurement systems and training techniques. What follows is a brief history of how each influenced or contributed to key milestones in research on generalization of parenting skills in behavioral parent training.

*Generalization.* Several key developments by behavioral parent training researchers are noteworthy in contributing to the body of evidence of parenting skills generalizing to situations outside the training setting. Patterson and colleagues (Patterson et al., 1973; Patterson & Reid, 1973) introduced programmed text into training which enabled parents to use behavioral terms and apply behavioural procedures for child behavior change outside of training sessions. They also expanded training to group-based formats, which allowed more efficient delivery, a shared learning experience for families, as well as the opportunity to conduct controlled group designs evaluating generalization of parenting skills. Wahler (1965; 1969) and colleagues, and Hanf (1969) developed sophisticated treatment protocols that were used by subsequent researchers, such as Forehand (McMahon & Forehand, 2003) and Eyberg (Eyberg & Boggs, 1989) to develop parent training programs that have shown evidence of parenting skills generalizing to setting/situations outside the training setting. Sanders and colleagues (Sanders & Dadds, 1993) focused heavily on the investigation of parent skill generalization, by incorporating generalization strategies into programming which were subsequently included in a universal parenting program. Below, the work of these researchers

is briefly reviewed to establish what has been accomplished in answering questions about generalization.

One of the first researcher groups to address questions regarding generalization to situations outside of training settings was Patterson and colleagues (Patterson et al., 1973; Patterson & Reid, 1973). Parents were first educated through study of a programmed text on child management techniques. This provided them with comprehensive materials on behavior change (Patterson & Reid, 1973; Patterson, Cobb, & Ray, 1973; Wiltz & Patterson, 1974). Once parents passed a mastery-based test on the programmed material, they were taught to identify target behaviors and observe and collect data. With knowledge of the principles that support the techniques they were implementing, parents were theoretically better equipped to generalize what they had been taught to new situations in the natural environment.

Another new development was the introduction of clinic-based group parent training meetings in which parents actively participated in the design of their own programs. Wiltz and Patterson (1974) had parents collect data on a second behavior in the home not targeted for intervention. Parents were expected to independently apply the strategies learned in clinic-based, group parent meetings to non-targeted behavior. At five-week follow-up, reductions in target behaviors in homes in the experimental group were statistically significant compared to families in the control group. Non-targeted behaviors in the home were also reduced; however, differences between experimental and control groups were not statistically significant. Patterson and colleagues' work suggested that parents could generalize strategies for child disruptive behavior addressed in the clinic to the behaviors in the home. However, questions remained about whether parenting skills would also generalize to child disruptive behavior not directly addressed in training.

Hanf (1969) influenced a number of researchers in behavioral parent training in examining generalization of parenting skills as a critical outcome. He developed treatment protocols based, in part, on the work of Wahler and colleagues (1965; 1969), which addressed child noncompliance. Hanf's (1969) model had parents first trained to recognize and reinforce age-appropriate play, decrease instructions and questions, and to use planned ignoring for minor misbehaviors. They were then trained to deliver instructions, praise compliance, give warnings for noncompliance, and implement timeout when instructions and warnings did not produce compliance. This approach was adopted by Forehand and colleagues (e.g., McMahon & Forehand, 2003), and Eyberg and colleagues (e.g., Eyberg, 1988), who produced much of the research on behavioral parent training in the next few decades.

During the 1970s and 1980s the work of Forehand's group played a major role in promoting evidence of generality from the clinic to home and to untreated siblings in the short term. Subsequent work (Peed, Roberts, & Forehand, 1977) replicated these findings by demonstrating that generalization of new parenting skills was maintained in the home at 6- and 12-month follow-up (Forehand, Sturgis, McMahon, Aguar, Green, Wells, & Breiner, 1979). Forehand et al. (1979) also examined generalization to the school setting. Although, generalization occurred in the home, direct observation of child behaviors in the school setting showed that treatment did not generalize to the school. Forehand's work showed that parents participating in behavioral parent training could generalize skills from the clinic to the home, but that contingencies operating in the home might not generalize to other settings in which intervention was not directly programmed.

Research in generalization also expanded to investigate if parents could generalize skills across a variety of child disruptive behaviors. Wells et al. (1980) found that statistically significant reductions in child noncompliance also resulted in statistically significant decreases in other child disruptive behaviors not targeted in training. Parent data on implementation of parenting skills were not reported (Wells, Forehand, & Griest, 1980). Thus, it was unclear whether changes in child behavior were due to changes in parenting skills, or changes simply represented treatment generalization, that is, child behavior skills generalized from treated to untreated behaviors. In general, data on parent implementation was lacking during this time frame.

The work of Hanf and colleagues informed the development of Eyberg's parent-child interaction therapy (Eyberg & Boggs, 1989), another program on which parent skill generalization research has been conducted. Parent-child interaction therapy is distinguished from other social learning-based parent training in its emphasis on the quality of the parent-child relationship and incorporation of techniques used by traditional play therapists (Eyberg, 1988). Parent-child interaction therapy sessions began with parents learning through direct instructions, role-play, and handouts. Sessions were conducted in stages with the first focusing on child-directed interactions within structured play sessions. The parent was coached by the therapist using a "bug-in-the-ear" device on nondirective interaction skills that include following the child's lead, describing what the child is doing, imitating the child's play, reflecting what the child says, withholding commands, questions, and criticisms, specific praise for appropriate play, and planned ignoring of inappropriate child behaviors. In a session review, parents received feedback from the therapist by discussing a summary sheet of their progress based on data produced from the Dyadic Parent-Child Interaction Coding

System (Eyberg & Robinson, 1983), a behavioral measure of parent and child interactions. This measure allowed researchers to determine if increases in parenting skills corresponded to decreases in child disruptive behavior. Parents were also given homework to practice their newly learned skills at home for five-minutes per day. Then, in the parent-directed interaction (in a clinic), parents lead the play activity, were taught to use clear, age-appropriate instructions, and provide consequences for compliance and noncompliance (e.g., timeout and a “back-up spank” for escaping from the timeout chair) during structured play sessions. Parent-child interaction therapy has been found to be effective in the reduction of noncompliance and child disruptive behaviors in the home for up to two-years posttreatment (Boggs, Eyberg, Edwards, Rayfield, Jacobs, Bagner, & Hood, 2004) and has demonstrated generalization to the school (Funderburk, Eyberg, Newcomb, McNeil, Hembree-Kigin, & Capage, 1998) and untreated siblings (Eyberg & Robinson, 1982). The development of an observational measurement system designed to assess whether parenting skills corresponded to decreases in child disruptive behavior further increased the evidence base for behavioral parent training, by improving the strength of conclusions that could be made about positive outcomes based on direct observation.

Sanders and colleagues (Sanders & Dadds, 1993) focused heavily on the investigation of parent skill generalization during the early 1980s. For example, Sanders and Glynn (1981), and Sanders (1982) examined generalization by comparing parents’ performance in training settings to home and community generalization settings. The effect of training using descriptive praise, differential reinforcement, instructions, prompting, contingent consequences, response cost, and timeout with and without parent self-management techniques showed that parent and child behaviors in generalization settings improved only

when parent self-management was included. Self-management techniques had parents learn goal selection, program design, self-monitoring, and planning/arranging their own stimulus environments (Sanders, 1982). These studies provided evidence for including specific generalization strategies into programming as a means for promoting generalization of parenting skills.

Subsequent research examined the effect of planned activities training on parent skill generalization (Dadds, Sanders, & James, 1987; Sanders & Christensen, 1985; Sanders & Dadds, 1982). Planned activities training involves selection/set-up of a child activity, a discussion of rules and consequences, a focus on incidental teaching, and feedback to the child once the activity ends. Parent skills successfully generalized to untrained settings; however, in two of three studies (Sanders & Christensen, 1985; Sanders & Dadds, 1982), the individual effects of planned activities training in promoting generalization were equivocal. This suggested that there were individual differences in parent skill generalization, with some parenting skills generalizing without the addition of planned activities training.

This brief history highlighted key research milestones in generalization of parenting skills in behavioral parent training. Of the researchers featured in this review, only Sanders and colleagues (Sanders, Turner, & Markie-Dadds, 2002) advanced behavioral parent training programs to the levels of secondary (targeted), tertiary (intensive), and primary (universal) intervention. Leading up to this advancement, Sanders (1984) published a review of clinical strategies to enhance generalization in parent training. These generalization promotion strategies were incorporated into what is now a widely disseminated evidence-based behavioral family intervention (Sanders, Turner, & Markie-Dadds, 2002), Triple P (Sanders, 2008). While generalization strategies have been a major focus of Triple P, the

effectiveness of these strategies embedded within Triple P has only been examined to a limited degree. Provided below is a brief overview and rationale for Triple P's program design. This will lead into a more focused discussion of Level 3 Triple P, and subsequently the rationale for examining generalization in this study.

Triple P is based on a social learning approach to family intervention and addresses known risk factors aimed at preventing behavioral, emotional, and developmental problems in children by enhancing knowledge, skills, and confidence of parents in the task of raising their children. Triple P parenting strategies include spending quality time and showing affection with children, delivering descriptive praise and attention for desired behaviors, providing engaging activities, and teaching new skills and behaviors through modeling. Parents are taught to use incidental teaching, least to most methods of prompting, and rewards and behavior charts. Parents learn specific parenting strategies to prevent or address misbehavior including ground rules, using directed discussion when a rule is broken, planned ignoring, delivery of clear, calm instructions, application of logical consequences for misbehavior, quiet time (i.e., inclusionary timeout), and timeout. The system uses five different levels of intervention intensity, tailored to the differing levels of support that parents require (Sanders et al., 2002).

- Level 1 is a universal parent information strategy that provides interested parents with access to useful information about parenting through a coordinated promotional campaign using print and electronic media, as well as user-friendly parenting tip sheets and videotapes that demonstrate specific parenting strategies.

- Level 2 is a brief, one to two-session primary health care intervention providing developmental guidance to parents of children with mild behavior difficulties or developmental delays.
- Level 3, a four-session intervention, targets children with mild to moderate behavior difficulties and includes active skills training for parents.
- Level 4 is an intensive 8-to 10-session individual, group, or self-directed parent training program for children with more severe behavioral difficulties.
- Level 5 is an enhanced behavioral family intervention program for families in which child disruptive behaviors persist, or where parenting difficulties are complicated by other sources of family distress (e.g., marital conflict, parental depression, or high levels of stress).

The rationale for this tiered strategy is that children have differing levels of dysfunction and behavioral disturbance, and parents also have differing preferences regarding the type, intensity, and mode of assistance they require. Triple P operates within a health-promotion framework by giving parents the skills necessary to improve parent-child relationships, and increase the adaptive behavior of their children, thereby improving the overall mental health of their family (Sanders, 2008). It is designed to maximize efficiency by providing the minimum amount of assistance required to effect change at the earliest point of contact. There is a substantial evidence base supporting the efficacy and effectiveness of Triple P. Four different meta-analyses have confirmed that children and parents demonstrate significant improvements in child behavior and parenting practices after participating (de Graaf, Speetjens, Smit, de Wolff, & Tavecchio, 2008a; de Graaf, Speetjens, Smit, de Wolff, & Tavecchio, 2008b; Nowak & Heinrichs, 2008; Thomas & Zimmer-Gembeck, 2007).

Of the five different levels of Triple P intervention intensity, the current study focuses on Level 3, Primary Care Triple P. While most research has focused on the more intensive levels of intervention, relatively fewer studies have examined the efficacy of brief parenting interventions, such as Level 3, Primary Care Triple P (Turner & Sanders, 2006). Turner and Sanders (2006) conducted the only randomized trial of Primary Care Triple P to date and found that parents reported significantly fewer conduct problems after intervention than parents in the waitlist control condition. Thus, evidence concerning the efficacy of Primary Care Triple P is promising, but limited. This research sought to extend the literature on brief parenting interventions through a single-case evaluation of Primary Care Triple P and its effect on generalization of parenting skills. What follows is a brief description of Primary Care Triple P, the rationale for studying generalization of parenting skills in Primary Care Triple P, and the specific generalization strategies it employs.

Primary Care Triple P is designed for use in a variety of primary care settings, including general medical practices, community child health clinics, and home visiting services. These settings are potentially advantageous for detecting parent-child difficulties because of the high prevalence of behavioral and emotional problems parents present regarding their children in those settings (Giel, Koeter, & Ormel, 1990; Vasquez-Barquero, 1990), and for providing early intervention for parents whose children are at risk for mental health problems (Bower, Garralda, Kramer, Harrington, & Sibbald, 2001). These settings may also better serve parents that who are resistant to attending mental health services due to perceived social stigma (Nicholson, French, Oldenberg, & Connelly, 1997). Delivery of parenting programs in primary care settings also addresses the lack of service availability and

inadequate resourcing of specialist mental health services (Zubrick, et al., 2005; Sanders, 2008; Taylor & Biglan, 1998) available to low-income or hard to reach populations.

An important question regarding Primary Care Triple P is whether the brief training provided to parents is sufficient to promote generalization. Children with conduct problems can display disruptive behaviors in multiple community and home settings, particularly where parents have competing demands and time constraints, or where parenting is under public scrutiny (e.g., shopping, visiting, getting ready to go out). If parents do not implement positive parenting and contingency management procedures predictably and successfully in diverse settings, children may discriminate the lack of reinforcers for prosocial behavior or the lack of accessible back-up consequences (e.g., timeout). As a result, their behavior may deteriorate or remain unchanged from pre-intervention levels.

While studies in the early 1980s showed that parent training programs could result in improvements in children's behavior in multiple settings (Sanders & Dadds, 1982; Sanders & Glynn, 1981; Sanders & Christensen, 1985), those studies typically involved intensive home-based parenting interventions. It is not known if brief consultation models, such as Primary Care Triple P would produce similar outcomes. Furthermore, previous studies incorporated elements into the intervention designed to specifically promote the generalization of parent and child behavior changes across settings. Observational studies showed that when parent training incorporated generalization enhancement procedures such as parental self-management training (Sanders & Glynn, 1981; Huynen, Lutzker, Bigelow, & Touchette, 1996), planned activities training (Sanders & Dadds, 1982; Huynen et al., 1996), and training sufficient exemplars (Powers & Roberts, 1995; Sanders & James, 1983; Stokes & Baer, 1977), parenting skills generalized to multiple settings. Primary Care Triple P also

emphasizes the promotion of generalization by training parents in general behavior change principles, using sufficient exemplars through parenting tip sheets covering a range of problem behaviors and age-specific videos that demonstrate positive parenting principles and techniques. It also makes use of a self-regulation framework that includes parental goal-setting, self-monitoring, and self-evaluation.

The specific clinical strategies for promoting generalization that have been embedded in Triple P procedures at Level 3 and above include: (a) emphasizing common stimuli in training and non-training settings; (b) training in the natural/home environment; (c) teaching discrete skills that are likely to be reinforced in the non-training setting; (d) verbally reinforcing self-reports of accurate skill use in non-training settings, that is, spontaneous generalization; (e) training loosely by extracting general principles from specific examples of implementation; and, (f) reinforcing response classes, such as planning ahead, rather than explicitly focusing on discrete behaviors that make up those response classes.

Parents choose which parenting strategies are appropriate for their family and participate in the design of the parenting program. Using the parent participatory model, Triple P practitioners verbally prompt parents to use the parenting information to which they were exposed to make choices and solve problems related to their own and their children's behavior. Parents are encouraged to identify other situations and settings with practitioner prompting (e.g., the parent is asked to think of other situations in which the parenting strategies may be helpful); applicable parent responses are then reinforced with praise. This prompting strategy is used instead of a direct instruction to generalize. Triple P also assigns parents homework that involves practicing in all identified problem settings, and self-

monitoring of implementation using a Triple P checklist. The homework tasks are then reviewed in subsequent sessions.

While generalization strategies have been a major focus of Triple P, the effectiveness of these strategies embedded within Level 3, Primary Care Triple P has only been examined to a limited degree. That is, whether the generalization strategies actually result in parenting skills generalizing from training to non-training settings, and if use of such skills subsequently produces reductions in child disruptive behaviors.

Thus, the present study sought to answer these questions with parents participating in Level 3, Primary Care Triple P through the use of an intra-subject replication design, specifically a multiple-probe-design across-families to explore across setting generalization effects. Parents of preschool-age children with moderate severity conduct problems were sequentially introduced to Primary Care Triple P. We predicted that families participating in Primary Care Triple P would show: (1) decreased observed and parent-reported child disruptive behavior in training and non-training settings; (2) reduced observed and parent-reported dysfunctional parenting practices in training and non-training settings; (3) increased observed parenting skills, as measure by the Parent Management Skills coding system; (4) increased parental self-efficacy, as measured by the Parenting Tasks Checklist; and, (5) maintenance of intervention gains over time. These predictions have previously been used in the literature to evaluate the effectiveness of other levels of Triple P. Thus, we predicted that newly learned parenting skills would generalize from training settings to non-training settings, that parent skill generalization would result in corresponding decreases in child disruptive behavior in non-training settings, and these decreases would generalize over time. Because several aspects of the research design may have positively influenced study

outcomes, it is important to clarify that an *enhanced* version of Primary Care Triple P was evaluated in this study.

Also, satisfaction with the Australian-based Triple P materials was assessed for the first time with a U.S. sample. All of the materials were in English; however, the spoken language in videos reflected Australian pronunciation and some aspects of the written materials included idioms (e.g., whinge) exclusive to Australian culture. Thus, it was important to determine if cultural aspects of the intervention materials affected parents' ratings of satisfaction with Primary Care Triple P.

## Method

### *Participants*

Participants included families receiving Primary Care Triple P, and those delivering the intervention and implementing the research: Triple P practitioners, videographers, a coder, and the experimenter who served various functions including project coordinator.

*Families.* Recruitment occurred through solicitation by local pediatricians, print media, flyers, and word of mouth. Three families responded to print media; the remaining families were recruited through a parent listserv for employees of a large federal agency. Responding parents were asked to complete the Eyberg Child Behavior Inventory (Eyberg & Pincus, 1999), and were interviewed about family details such as the child's behavior problems, developmental history, health status, educational history, and family relationships and interactions. Inclusion criteria required that parents: (1) had to be the legal guardian and primary caregiver of a child whose age was between 3- and 7-years; and, (2) present with concerns about behavior problems that occurred primarily in the home. Exclusion criteria for parent and/or child were: (1) intellectual disabilities; (2) chronic medical problems; (3)

psychological and/or psychiatric problems; (4) drug-addiction problems; (5) non-English-speaking; and, (6) children diagnosed with a conduct-related disorder.

Nine families were selected to participate, with a total of 10 children. All were cohabitating, married, middle-class, two-parent families residing in Georgia and South Carolina. Six of 9 families reported their income; all indicated an annual income of more than \$70, 000 per year. Families were asked to sign consent forms for their participation and were compensated (up to \$300) for completion of research observations. The families were yoked in sets of either two or three families. Table A1 lists demographic information, target behaviors, and experimental settings, for participating families.

*Triple P practitioners.* Primary Care Triple P was delivered by two accredited Triple P practitioners supervised by a clinical psychologist who was also an accredited Triple P practitioner.

*Coder and videographer training and reliability.* Two videographers followed written instructions that outlined: (a) the procedures for videotaping two settings (target and generalization settings); (b) how to handle observation interruptions and cancellations; and, (c) how to interact with parents. Videographers were trained and then calibrated for protocol fidelity before being deployed with families.

The coder was a bachelors-level student preparing for her Master's degree in public health. Her training included instructions, observation, feedback, over 50-hours of practice, and quizzes on operational definitions. Training was complete when the coder achieved 85% reliability or more on three consecutive occasions on three different videos. The coder was responsible for coding video observations as well as serving as a reliability observer for the experimenter.

*Experimenter.* The experimenter was a doctoral student in child and developmental psychology and a recently accredited Triple P practitioner. She was trained for coding by clinicians from The University of Queensland Research and Training Lab in Brisbane, Australia, and received additional consultation from the creator of the coding system. The experimenter achieved 85% reliability or more with a coding trainer from the Brisbane Lab on three consecutive occasions before designing the training curriculum for the Triple P coder. The experimenter trained and supervised the videographers and coder, and provided clinical support to the clinical psychologist supervising the Triple P practitioners regarding the need for booster sessions at posttreatment. This additional clinical support represents one of three enhancements to Primary Care Triple P that would not be available to families receiving the intervention in applied settings.

#### *Materials*

Observations were recorded using digital video equipment and then converted to DVDs for coding via Windows Media Player. Treatment sessions were recorded using a Digital Voice Recorder. Audio was downloaded to Windows Media player for coding.

Primary Care Triple P resource materials included: the *Practitioner's Manual and Consultation Flip Chart for Primary Care Triple P* (Turner, Sanders, & Markie-Dadds, 1999; Turner, Markie-Dadds, & Sanders, 1999), *Positive Parenting booklet* (Sanders, Markie-Dadds, & Turner, 1996a), selections from the *Tip Sheet Series* (Turner, Markie-Dadds, & Sanders, 1996a; Turner, Markie-Dadds, & Sanders, 1996b) on common problems such as noncompliance and tantrums encountered by parents with infants, toddlers, and preschoolers, and the *Every Parent's Survival Guide Video* (Sanders, Markie-Dadds, & Turner, 1996b). All of the materials were in English; however, the spoken language in the

video reflected Australian accents and idioms and some aspects of the written materials included idioms exclusive to Australian culture.

### *Measures*

*Videotaped Family Observations.* Observations of parent-child interactions ranged from 7-to 10-hours across experimental conditions; whether all 11 observations were completed was dependent on family availability and cooperation. All families completed a follow-up observation 4-to 8-weeks after the final session. Parents were instructed to handle misbehavior as they typically would. At posttreatment and follow-up, parents were instructed to implement the parenting strategies they learned during sessions.

Videotapes were coded in 10-second intervals for positive and aversive parent-child interactions using the coding scheme from the Revised Family Observation Schedule (FOS-R-III) (Sanders, Waugh, Tully, & Hynes, 1996). Positive parent behavior was measured by calculating the percentage of intervals in which the parent displayed praise, physical contact, specific instructions, vague instructions, questions, attention, affection, and responsiveness to child interruptions. Parent aversive behavior was measured by calculating the percentage of intervals in which the parent displayed physical contact, specific instructions, vague instructions, questions, attention, affection, and responsiveness to child interruptions with an angry or hostile voice volume, pitch, or facial expression/body posture. Child disruptive behavior was the percentage of intervals in which the child displayed noncompliance, complaints, aversive demands, interruptions, physical attacks on persons/objects, or oppositional behavior. An oppositional behavior code served as a catchall code for child disruptive behaviors not captured by other codes. Child disruptive behavior served as the dependent variable.

Videotapes were also coded in 10-second intervals for correct implementation of parenting strategies using the Parent Management Skills (PMS) coding system. The PMS was developed for this study to measure changes in parenting skills before and after participation in Triple P. In order to determine which measurable and observable Triple P parenting strategies [n=11] were most important for inclusion in the coding system, a survey was administered to 13 experts in Triple P implementation. Based on these ratings, eight Triple P strategies were included in the PMS coding system: clear, calm instructions, the compliance routine, descriptive praise, incidental teaching, logical consequences, planned ignoring, quiet time, and timeout. Parenting strategies were operationally defined and task analyzed in a checklist that included all procedural components of the strategies. PMS were coded as correct, partially correct, or incorrect based on the number of procedural errors that occurred during implementation (See Appendix C for PMS operational definitions and criteria for scoring accuracy of implementation). Two types of outcome scores were computed: a percentage score for correct implementation of individual PMS (e.g., praise and timeout), and a total PMS score based on the mean of individual PMS scores.

*Interobserver Reliability for FOS and PMS.* Table A2 displays interobserver reliability scores by family, coding method, and condition. Reliability was calculated for the Family Observation Schedule (FOS) by dividing agreements by the total number of agreements and disagreements and multiplying by 100. Reliability was calculated for Parent Management Skills (PMS) using the same equation; however, scored intervals only were included in the calculation. Interobserver reliability scores were high for FOS coding across families ranging from 81% to 96% in baseline, to 85% to 94% in posttreatment. Interobserver reliability for

PMS coding across families ranged from 82% to 97% in baseline, to 65% to 97% in posttreatment.

*Parent self-report measures.* The Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999), which assesses child problem behavior, was administered by the experimenter in telephone interviews during initial screening and follow-up. ECBI test-retest reliability (12-week interval,  $r = .80$  and  $.85$ , respectively) is good, and high internal consistency has been reported on ECBI intensity ( $r = .95$ ) and problem scores ( $r = .91$ ). The Parenting Tasks Checklist (PTC) (Sanders & Woolley, 2005), which assesses parents' self-efficacy in performing common parenting tasks, was administered in-person during the secondary screening, at the end of session four, and by telephone follow-up by the experimenter. The PTC consists of two subscales, Behavioral and Setting Self-Efficacy, each with excellent internal consistency ( $\alpha = .97$  and  $.91$ , respectively).

The other three measures described were administered as part of Primary Care Triple P. The Family Background Questionnaire was adapted from the Western Australian Child Health Survey (Garton, Zubrick, & Silburn, 1995), and assesses biographical and demographic information. Parents completed this questionnaire between sessions one and two. Essential biographical data include contact details, the child's details, parents' marital status, current employment, and educational background. The Parenting Experience Survey was adapted from the Living with Children Survey (Sanders et al., 1999), and assesses perceptions of parenting skill and partner support in parenting. Parents completed the Parenting Experience Survey between sessions one and two and after session four. The Client Satisfaction Questionnaire (CSQ), adapted from the Therapy Attitude Inventory (Eyberg, 1993), was used to assess parents' satisfaction with the quality, ease of use, and

appropriateness of Triple P. Parents entered responses on a scale of 1 to 7, where a higher score was better, and 4 was neutral. The CSQ was revised for this study to include 12 items regarding: (1) satisfaction with the Triple P parent handouts and video; (2) participants' perceptions regarding cultural differences in parenting between themselves and the Australian actors in the Triple P parenting video; and, (3) the effect Australian accents and idioms had on the parents' ability to understand what was said in the video. The questionnaire was completed by the parents at the end of session four. High internal consistency ( $\alpha = .96$ ) was reported in a clinic sample receiving behavioral family interventions (Sanders et al., 2000).

*Treatment Fidelity.* In order to assess practitioner fidelity to Triple P intervention protocols, all Triple P sessions were audiotaped and monitored as needed for clinical supervision of the Triple P practitioners. Two sessions were reviewed by the experimenter from each family and coded for content using a checklist that detailed instructions from the practitioner's manual; one session was randomly chosen for coding. Session two was always coded, as it contained the core of the intervention, which was the parenting plan. The experimenter listened to audiotaped sessions twice before scoring. The practitioner completed a session summary checklist by placing a checkmark next to each session topic covered during the sessions, which served as reliability for the experimenter's coding.

Table A3 displays treatment fidelity scores by family, practitioner, and session number. The scores for the South Carolina practitioner ranged from 57% to 77% ( $M = 67%$ ,  $SD = .08$ ) across two families. Because these scores were low, a treatment fidelity score was calculated based on the portion of session two in which the parenting plan was specifically addressed. For South Carolina families 1a and 2b, parenting plan treatment fidelity was 100% and 67%,

respectively. The South Carolina practitioner's Session Summary Checklists, which served as a self-report of the content covered in sessions, indicated that 100% of the content was covered in each session for both families. The treatment fidelity scores for the Atlanta, Georgia practitioner ranged from 48% to 85% across the 7 families treated ( $M = 73\%$ ,  $SD = .10$ ). Parenting plan treatment fidelity ranged from 61% to 89% ( $M = 75\%$ ,  $SD = .10$ ). The Georgia practitioner's Session Summary Checklists, though completed at the time of the study, were reported lost by the Georgia practitioner.

### *Intervention.*

Primary Care Triple P consists of four, 20-minute sessions. During session one, practitioners assessed parental concerns regarding the target child's behavior problems with an intake interview. Questions probed the history of the problem, and discussion focused on developing a thorough understanding of the problem behavior. Parents were asked to record the rate of problem behavior throughout the intervention using data collection forms provided by the Triple P practitioner. Between sessions one and two, parents were instructed to watch *Every Parent's Survival Guide Video*, which discusses causes of child behavior problems and demonstrates the core Triple P parenting strategies. Although there was not a quiz or other means of ensuring that parents watched the video, parents received a phone call before session two; if parents self-reported that they did not watch the video, session two was rescheduled.

During the second session, the Triple P practitioner worked with the parent to design the parenting plan. First, the Triple P practitioner provided feedback to the parent on assessment results. Then, the practitioner worked with the parent to identify causes of child behavior problems based on understanding of the video, set goals for parent and child behavior

change, and helped the parent choose positive parenting and behavior management strategies for inclusion in the parenting plan. The menu of core parenting strategies included: spending brief quality time, talking with and showing affection towards children, descriptive praise, attention for desired behavior, providing engaging activities, teaching new skills and behaviors by modeling, incidental teaching, least to most methods of prompting, and using rewards and behavior charts. Parenting strategies used to prevent or address misbehavior included: ground rules, using directed discussion when a rule is broken, planned ignoring, delivery of clear, calm instructions, application of logical consequences for misbehavior, quiet time (i.e., inclusionary timeout), and timeout. Standard parenting routines were taught for noncompliance to instructions. The compliance routine addressed transitions that evoked noncompliance, such as stopping a preferred activity and starting a new one, and the behavior correction routine addressed stopping and applying consequences if the noncompliant behavior continued. Between sessions two and three, parents were expected to implement the parenting plan.

During session three, the Triple P practitioner reviewed progress. Then, the practitioner refined and rehearsed parenting strategies, prompted the parent to problem-solve obstacles to implementation, and addressed additional or new behavior problems.

During session four, the Triple P practitioner followed-up with the family to discuss progress, give suggestions for maintenance, address other implementation issues, and if necessary, discuss referral options with the parent.

Each session finished with a succinct overview of topics covered, assignment of homework, an overview of the next session, questions, setting the next meeting time, and gratitude for participation.

Sessions one through three were scheduled to occur within three-weeks. Session four was scheduled to occur with one-to two-weeks after Session three. Families that did not show behavior change at posttreatment in the target or generalization settings were offered a booster session which covered content that needed review (as identified by the experimenter through examination of observations and session audiotapes), and/or content the parent requested. All families completed the intervention within the recommended time frame.

Throughout sessions, the Triple P practitioner used the “parent participatory model” to guide parents through the information presented. The model involves encouraging parent choice, decision-making, and problem-solving throughout the process of assessing the problem, designing a parenting plan, and programming for maintenance and generalization. Parents were verbally prompted to use the parenting information to which they were exposed (e.g., “In what other situations might this strategy be helpful?”), to facilitate selection of parenting strategies perceived as socially acceptable for their family and that would have the greatest effect on their child’s behavior. Parents completed homework assignments throughout the intervention such as monitoring the frequency, duration, and antecedents of problematic child behavior.

Procedures designed to promote generalization are part of the standard Triple P program. For the purposes of this study, however, implementation procedures that promote generalization were explicitly highlighted in a generalization document that was used to provide a booster training for Triple P practitioners-this was an enhancement to Primary Care Triple P not available to practitioners implementing the intervention in applied settings. The generalization document was created through a careful examination of the Triple P practitioner’s manual and included examples of how to implement generalization strategies.

This booster training was provided to ensure that Triple P educators used the procedures evaluated especially for this study. Table A4 shows examples of Triple P components and strategies identified from manual protocols that promote or provide opportunities to program for generalization.

*Design.*

A multiple probe design across participants (Horner & Baer, 1978) assessed Primary Care Triple P effects on parent and child behavior. This design was chosen because asking families to comply with a lengthy baseline, given their children's disruptive behaviors, would have been unethical and could have fostered dropping out. Also, families may have experienced boredom and frustration with repeated baseline observations. This single-case design involved repeated (noncontiguous) assessments of each family, before, during, and after the intervention. In the multiple probe design, two or more participants, or in this case families, were yoked for comparison across experimental conditions.

The order and sequence of yoking was determined primarily by each family's availability. Within each set, one family was labeled 'Family A' and the other 'Family B'. Baseline measures were collected concurrently for the yoked families in a set. Primary Care Triple P was introduced in Family A when the rate of targeted child behavior in Family A was either stable, showing a trend in a direction opposite of that desired, or not showing a stable downward trend. When an intervention effect was evident with Family A (the child's behavior change was in the desired direction), the intervention was introduced with Family B. Thus, experimental control is demonstrated when the intervention is sequenced across time and when behavior change occurs after intervention is introduced. This sequence rules out the role of variables other than the intervention when behavior change in the second

family occurs after intervention begins. If no behavior change in Family A's child was observed after the full four sessions of Primary Care Triple P, up to two booster sessions were conducted. The reason for this was that families were included with more severe child disruptive behaviors than would typically be the case for Primary Care Triple P. By including families with more severe behavior problems, we were trying to ensure that baseline was stable and that a definitive decrease in observed outcomes would be evident after intervention. The addition of booster sessions is included in the procedures outlined in the Primary Care Triple P manual. The manual states that when there is no improvement or multiple child disruptive behaviors, additional contact after session four may occur in the form of another session, continuing on to Level 4 or Level 5 Triple P, or referral to another appropriate agency or program in the community. However, the availability of a booster session was considered an *enhancement* in the study because parents were offered the booster session based on little or no improvement in observed child disruptive behavior, rather than on Triple P practitioner recommendation or parent request.

The research was bound by the Center for Disease Control and Prevention Internal Review Board's protection of human subjects policies because it was conducted under a grant funded by this agency while the experimenter completed a fellowship. These policies stipulated that parents be aware of all parameters of the observations, including the exact number of videotaped observations. For this reason, in addition to the other concerns noted, the experimenter decided to limit the number of baseline observations to five, and posttreatment and follow-up observations to six.

Within each family, generalization was examined by assessing behavioral changes in a *sibling* with whom the family was not trained and/or a *setting* in which the family was not

specifically trained. Family 3a presented with two siblings with child disruptive behavior. The sibling displaying higher rates of behavior was targeted for intervention. To determine if parenting skills generalized from one sibling to another, observations were conducted to examine changes in parent and child behavior with *both siblings*. In all other families, one setting was targeted for intervention (e.g., dinner time), while changes in parent and child behavior in another setting were assessed (e.g., bed time).

## Results

### *Analyses of Observational Data*

Data were visually inspected for each individual family within a multiple probe format across families. Graphic data are presented for child disruptive behavior only. Observational data for other study variables that did not show noticeable changes in parent and child behavior through visual inspection are summarized in the text below. First group data for child disruptive behavior will be summarized; this is followed by presentation of individual family data. Then, observational data for parent behaviors are summarized. This is followed by an analysis of parent self-report measures.

### *Changes in observed child disruptive behavior.*

*Group analysis.* Figures B1 through B4 show the percentage of child disruptive behavior across experimental conditions for Families 1a through 4b2 in training and generalization settings. Mean child disruptive behavior for all families was 37% during baseline, decreased to 17% during posttreatment, and increased slightly to 19% at follow-up in training settings. All children targeted for intervention showed a decrease in child disruptive behavior at posttreatment in training settings; reduced levels of child disruptive behavior maintained for all but one child (Family 2a).

In generalization settings, mean child disruptive behavior for all families was 27% during baseline, decreased to 14% during posttreatment, and remained stable at 14% at follow-up. All children targeted for intervention showed a decrease in child disruptive behavior at posttreatment in generalization settings; child disruptive behavior returned to, or approached baseline rates at follow-up for Families 2a, 3b, and 4c. Because decreases in child disruptive behavior occurred primarily after introduction of Primary Care Triple P in both settings, the data suggest that the intervention produced the decreases.

*Individual analysis.* Figure B1 presents the percentage of child disruptive behavior across experimental conditions for Family 1a and 1b in the training and generalization settings. Child disruptive behavior scores in the training setting for Family 1a decreased from a mean of 54% at baseline (range = 34% to 74%) to 12% at posttreatment (range = 6% to 17%), and 28% at 6-week follow-up. Child disruptive behavior scores in the training setting for Family 1b reduced from a mean of 47% at baseline (range=38% to 64%) to 25% at posttreatment (range=1% to 59%), and then after a booster session to 12% at 8-week follow-up. In the generalization setting, child disruptive behavior for Family 1a decreased from a mean of 49% at baseline (range=37% to 66%) to 18% at posttreatment (range= 8% to 30%), and then 20% at 6-week follow-up. Child disruptive behavior in the generalization setting for Family 1b reduced from a mean of 41% at baseline (range=36% to 52%) to 25% at posttreatment (range=0% to 95%). After a booster session following posttreatment observation one, child disruptive behavior in the generalization setting increased to 21%; however, remained below baseline rates at 8-week follow-up

Figure B2 displays the percentage of child disruptive behavior across experimental conditions for Family 2a and Family 2b in the training and generalization settings. Baseline

child disruptive behavior in the training setting for Family 2a changed from a mean of 59% at baseline (range=35% to 73%) to 21% at posttreatment (range=16% to 27%), and then despite a booster, increased to 55% at 8-week follow-up. Child disruptive behavior in the training setting for Family 2b changed from a mean of 39% at baseline (range=13% to 74%) to 15% at posttreatment (range=4% to 28%), and then after a booster session, to 5% at 7-week follow-up. In the generalization setting, child disruptive behavior for Family 2a decreased from a mean of 27% at baseline (range=12% to 34%) to 18% at posttreatment (range=8% to 29%), then returned to baseline rates at 21% at 8-week follow-up. Family 2b child disruptive behavior in the generalization setting decreased from a mean of 26% at baseline (range=7% to 41%) to 8% at posttreatment (range= 2% to 13%), and then 9% at 7-week follow-up.

Figure B3 displays the percentage of child disruptive behavior across experimental conditions for Family 3a for both the target and generalization child, and Family 3b in training and generalization settings. For Family 3a, in the training setting, the target child's baseline child disruptive behavior decreased from a mean of 28% at baseline (range=9% to 40%) to 10% at posttreatment (range=8% to 15%). After a booster session following posttreatment observation four, child disruptive behavior increased to 19% at 8-week follow-up. In the training setting, the generalization child's child disruptive behavior mean was 14% at baseline (range=2% to 30%); three baseline observations created a low ceiling. No change was observed during posttreatment (mean=17%); hence, generalization from the target to generalization child did not occur in the training setting. At 8-week follow-up, rate of child disruptive behavior increased to 29%, similar to upper range baseline rates in the training setting. In the generalization setting, child disruptive behavior scores for Family 3a's target child decreased from a mean of 13% at baseline (range=10% to 19%) to 10% at

posttreatment (range=3% to 22%), then decreased further to 4% at 8-week follow-up. Child disruptive behavior for Family 3a's generalization child, in the generalization setting, reduced from 9% at baseline (range=7% to 12%) to 4% at posttreatment (range=0% to 13%). At 8-week follow-up, the rate of child disruptive behavior began to trend upward to 7% of intervals in the generalization setting.

Treatment for Family 3b addressed training and generalization settings because the Triple P practitioner unintentionally discussed intervention strategies for both settings. However, more emphasis was placed on the training setting during the intervention plan discussion. Because less training was provided overall for the generalization setting, it appears under "generalization" in all relevant Tables. Child disruptive behavior in the training setting decreased from a mean of 51% during baseline (range=45% to 54%) to 38% at posttreatment (range=11% to 63%). After a booster session following posttreatment observation one, child disruptive behavior decreased to 20% at 7-week follow-up in the training setting. In the generalization setting, child disruptive behavior for Family 3b decreased from 33% at baseline (range=23% to 58%) to 21% at posttreatment (range=14% to 33%). During posttreatment, child disruptive behavior rates in the generalization setting remained just below or at baseline rates despite a booster session. At 7-week follow-up, the rate of child disruptive behavior returned to baseline rates at 33% of intervals.

Figure B4 displays the percentage of child disruptive behavior across experimental conditions for Family 4a, Family 4b1 and Family 4b2 (Family 4b1 and 4b2 had concurrent baselines) in training and generalization settings. Family 4a child disruptive behavior in the training setting changed from a mean of 30% during baseline (range=21% to 44%) to 18% at posttreatment (range=8% to 25%), then decreased to 6% at 7-week follow-up. Child

disruptive behavior for Family 4b1 in the training setting decreased from 28% at baseline (range= 16% to 41%) to 6% at posttreatment (range=0% to 19%). After a booster session following posttreatment observation eight, child disruptive behavior decreased to 3% at 4-week follow-up. Child disruptive behavior in the training setting for Family 4b2 decreased from a mean of 23% at baseline (range=14% to 30%) to 5% at posttreatment (range=1% to 12%). At 8-week follow-up, rate of child disruptive behavior began to trend upward at 15%. In the generalization setting, child disruptive behavior for Family 4a decreased from a mean of 17% at baseline (range=14% to 19%) to 8% at posttreatment (range=1% to 14%); decreases maintained at 4% at 7-week follow-up. Child disruptive behavior for Family 4b1 in the generalization setting decreased from a mean of 32% at baseline (ranged from 28% to 40%) to 19% at posttreatment (range=13% to 30%), and then decreased to 5% at 4-week follow-up. Child disruptive behavior for Family 4b2 in the generalization setting decreased from a mean of 23% at baseline (range=6% to 54%) to 8% at posttreatment (range=0% to 15%). At 8-week follow-up, child disruptive behavior returned to baseline at 19%.

*Changes in observed parent behavior.*

*Parent Aversive Behavior (PAB).* All families had a very low ceiling for PAB. Of six families with 1% or more PAB in the training setting, four showed decreases at posttreatment; two of these four (50%) families maintained decreases at follow-up. Of the four families with 1% or more PAB in the generalization setting, four (100%) showed decreases at posttreatment; three of these four (75%) families maintained decreases at follow-up. Although data are insufficient to make any strong conclusions about the effect of Primary Care Triple P on PAB, outcomes were in the expected direction for most families in training settings, and all families in generalization settings at posttreatment.

*Parent Management Skills (PMS) Mean Scores.* PMS were coded only when implementation occurred, consequently, a low ceiling for PMS scores resulted. The PMS mean score is an average of individual PMS scores. Individual PMS scores (e.g., praise) represent the percentage of intervals during an observation in which a PMS is implemented correct or partially correct. Only two of eight Triple P strategies coded for this study occurred consistently when families were videotaped practicing their new parenting strategies: praise and calm, clear, instructions. Hence, PMS mean scores mostly represent these two parenting strategies. Seven of nine (78%) families showed increases in their PMS mean score in the training setting at posttreatment. Three of these 7 (43%) families maintained increases in the training setting at follow-up. Three of nine (33%) families showed increases in their PMS mean score in the generalization setting at posttreatment. One of these three (33%) families maintained increases at follow-up. Although data are insufficient to make any strong conclusions about the effect of Primary Care Triple P on PMS, outcomes were in the expected direction for most families in training settings at posttreatment; this effect was less evident in generalization settings. In both settings, maintenance at follow-up was weak at best.

#### *Analyses of parent self-report measures*

Tables 5, 6, and 7 present the means and standard deviations for the Eyberg Child Behavior Inventory, the Parenting Tasks Checklist, and the Parenting Experience Survey, respectively. Results were analyzed using a paired samples t test.

*Eyberg Child Behavior Inventory (ECBI).* There was a significant reduction in ECBI intensity scores, from pretest to follow-up,  $t(9) = 7.704; p < .001$ , and in ECBI problem scores from pretest to follow-up,  $t(9) = 13.47; p < .001$ . Also, see Table A5 for the total

percent decrease from baseline to follow-up in intensity and problem scores for each family. Of the three families that were above the ECBI intensity score clinical cutoff at baseline (2a, 3a, and 4a), all showed clinically significant changes with scores decreasing into the normal range at follow-up. Similarly, of the five families that were above the ECBI problem score clinical cutoff at baseline (1b, 2b, 3a, 4a, and 4b2), all showed clinically significant changes with scores decreasing into the normal range at follow-up. Also, with the exception of two families (2a and 3a (generalization child), decreases in ECBI intensity and problem scores correspond with decreases in direct observation data. See Figure B5 for ECBI Intensity and Problem Score group means at baseline and follow-up. Overall, parent report on the ECBI suggest that clinically significant changes occurred in child disruptive behavior after participation in Primary Care Triple P.

*Parenting Tasks Checklist (PTC).* There was also a significant increase in PTC scores (see Table A6) between pretest and posttest,  $t(6) = -7.105$ ;  $p < .001$ , and between pretest and follow-up,  $t(8) = -8.188$ ;  $p < .001$ . There were no significant differences in PTC scores from posttest to follow-up,  $t(7) = -1.567$ ;  $p = .161$ . See Figure B6 for group mean PTC Scores across experimental conditions. Participation in Primary Care Triple P increased parents' report of self-efficacy in performing common parenting tasks across multiple settings and situations suggesting that learned parenting skills generalized outside of the training setting.

*Parenting Experience Survey.* There was a significant increase in Parenting Experience Survey scores (see Table A7 for individual scores) from pretest to posttest,  $t(16) = 4.772$ ;  $p < .001$ , indicating that after program participation parents were more satisfied with their parenting experiences .

*Client Satisfaction Questionnaire (CSQ)*. See Table A8 and A9 for descriptive statistics for the CSQ. The mean CSQ score for the first 13 items from the CSQ that focus specifically on satisfaction with Triple P was 71.4 ( $SD = 9.99$ ) (minimum score = 13; maximum score = 91) indicating moderate to high satisfaction with the program. The mothers' mean program score ( $M = 72.22$ ,  $SD = 10.2$ ) was comparable to mothers' CSQ scores ( $M = 72.89$ ,  $SD = 11.48$ ) in Turner and Sanders (2006) Primary Care effectiveness trial.

The CSQ mean score for the next 10 items that focus specifically on satisfaction with Triple P *materials* (e.g., tip sheets, video) was 51.7 ( $SD = 11.94$ ) (minimum score = 10; maximum score = 70) indicated moderate satisfaction with Triple P materials. High ratings for two items probing if pronunciations/idioms exclusive to Australian culture affected understanding of video content suggested that these cultural differences were *not* a barrier to comprehension of program content. However, moderate ratings ( $M=4.8$ ;  $SD=1.47$ ) for items asking if parents “related to parents in the Triple P video” and high ratings ( $M=6.7$ ;  $SD=.48$ ) for the statement, “Australian parents, like the ones in the video, have similar problems with their kids as parents in the United States” suggest that although U.S. parents perceive Australians to have similar behavior problems with their children, they did not strongly relate to them as peers. The Triple P video received neutral to moderate ratings on questions that probed parents' satisfaction with content quality ( $M=4.5$ ;  $SD=1.28$ ), helpfulness in managing behavior problems ( $M=4.8$ ;  $SD=1.42$ ) and applying parenting strategies ( $M=4.6$ ;  $SD=1.41$ ), and if parents would recommend the Triple P video to family and friends ( $M=4.9$ ;  $SD=1.39$ ).

Two open-ended questions asked parents for comments and if they would change anything about Triple P materials. Responses partly revealed why the video did not receive high satisfaction ratings. Parents suggested updating the video format from VHS to DVD,

and that Australian actors should be replaced with actors from the U.S. Parents also commented that acting ability was poor, and that the videotape itself was old (dated) and of poor quality. Two items assessed satisfaction with the tip sheets and parenting booklet; the mean score for these items was 5.45 ( $SD = .35$ ) indicating satisfaction with these materials. Overall, self-report data indicate that parents were satisfied with the outcomes of their participation in Primary Care Triple P. Moreover, use of Australian-based materials did not affect parent's comprehension of program content. However, use of Australian actors in the Triple P video may have affected their ability to relate to parents depicted in videos, and thus affected their ratings of satisfaction with the content and overall helpfulness of the video.

### Discussion

*Predictions.* The present study provides additional support for the efficacy of Primary Care Triple P as a brief parenting intervention to reduce child disruptive behavior in preschool age children. Further, the study extends the literature on generalization of parenting skills from training to non-training settings. However, in considering the interpretation of the study results below, it is important to note that Primary Care Triple P was enhanced in this study by the addition of: (a) a booster session on generalization techniques and clinical supervision for Triple P practitioners; (b) observation of parent implementation by the experimenter who provided specific information about parents' incorrect use of parenting strategies to practitioners, and, (c) the addition of a booster session where parent skill deficits were addressed when immediate decreases in child disruptive behavior were not observed at posttreatment. Such enhancements were added to allow an evaluation of Primary Care Triple P under the most optimal of conditions given the limitations brought on by elements of the research design, such as use of children with more

severe disruptive behaviors than are normally addressed by Primary Care Triple P. Thus, positive outcomes discussed below should be interpreted with caution.

Prediction one was confirmed. Observed child disruptive behavior decreased in target and generalization settings for most families and parent-report measures of child disruptive behavior confirmed observed decreases. These findings are consistent with a recent comprehensive meta-analysis of Triple P (Nowak & Heinrichs, 2008) and extend prior work on Triple P showing large intervention effect sizes for parent report measures of child disruptive behavior on the Eyberg Child Behavior Inventory (Intensity Score,  $d=2.32$ ; Problem Score,  $d=2.68$ ). Most importantly, observational measures confirm that changes occurred for most families in generalization settings. These findings provide further support for the value of including generalization strategies in parenting interventions (Sanders & James, 1983) to increase generalization of parenting skills to new situations and settings.

Prediction two, which anticipated lower levels of observed parent aversive behavior, was only partially supported. Observational measures did not show dramatic reductions in parent aversive behavior, although the trend was in the predicted direction. This pattern might be explained by floor effects across experimental phases. That is, parent aversive behavior scores could not decrease further, because they were already at zero or very low at baseline.

Similarly, prediction three, that parents would demonstrate increases in parent management skills (PMS), was only partially supported. Observational measures did not show dramatic increases in PMS in training or generalization settings.

Prediction four, that there would be an increase in parental self-efficacy as measured by the Parenting Tasks Checklist was confirmed. Importantly, the parent-reported increases in parental self-efficacy corresponded with observed decreases in child disruptive behavior for

most families across all settings, indicating generalization of effects. This observed increase in parental self-efficacy is encouraging and consistent with the theoretical basis of Triple P, which argues for the central importance of improving parental self-efficacy so that parents can parent more consistently and positively. The finding is also consistent with the de Graaf et al. (2008b) meta-analysis that showed consistent changes in parents' sense of competence after participating in Triple P.

Prediction five which anticipated that intervention gains would maintain over time was partly supported. Decreases in observed child disruptive behavior were maintained by 67% of families in the training setting and generalization setting at 4-to 8-week follow-up. Also, parent reported changes on the Parenting Tasks Checklist measured at post-intervention continued into follow-up, thus providing further support for the short-term durability of Primary Care Triple P. However, questions are warranted about why some families did not maintain treatment gains, such as Family 2a. At follow-up, child disruptive behavior in the training setting returned to baseline rates at 55% of intervals. Further, decreases in child disruptive behavior in the generalization setting were marginal for this family. One explanation for a return to baseline rates may be that the family needed a more intensive level of intervention such as level 4 Triple P, which is a 10-session intervention. As discussed earlier, families reporting more severe child disruptive behaviors than would typically be the case for Primary Care Triple P were included in the sample. Family 2a scored *above* the clinical cutoff on the Eyberg Child Behavior Inventory intensity scale at baseline (see Table A5), suggesting that this family and others (e.g., Family 4b2) may have benefitted from a more intensive level of intervention. However, maintenance for families' 3a, 3b, and 4b2, may have been affected by poor implementation of intervention. Table A3 shows that

treatment fidelity scores for these families were below 80% for some/all sessions in which treatment fidelity was assessed.

*Sibling Generalization.* Parenting skills for Family 3a did not generalize from the target to generalization child in the training setting. However, these skills did generalize from the target child/training setting to the generalization child in the generalization setting. One explanation is that settings at high-risk for child disruptive behavior were chosen for training, and lower risk settings were chosen as generalization settings. Thus, it is possible that parents were more successful in implementing strategies learned in generalization settings because child disruptive behaviors were less frequent or intense in those settings. Similar to Family 2a, the twins in this family scored in the clinical range on the intensity and problem scales of the Eyberg Child Behavior Inventory. It is likely that this family required more intensive intervention than was offered by Primary Care Triple P.

*Magnitude of generalization effects.* Visual inspection of outcome data indicated that generalization effects differed for individual families with a few showing what appeared to be weak or no generalization effects across settings or siblings. To better assess the amount of generalization that occurred for each family, it was quantified by calculating a “generalization score” for child disruptive behavior to illustrate how much change occurred in generalization settings compared to changes in training. The formula<sup>1</sup> was “percent change” and was calculated separately for training and non-training settings. Generalization scores were calculated by dividing percent change scores for non-training settings by percent change scores for training settings. Thus, generalization scores quantify if change in non-training settings was less than (<99%), equal to (=100%), or greater than (>100%) change

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<sup>1</sup>  $((y2 - y1) / y1) * 100$  to calculate a percent increase or  $((y1 - y2) / y1) * 100$  to calculate a percent decrease where  $y1$  = baseline and  $y2$  = posttreatment or follow-up score

that occurred in training. Table A10 shows computed generalization scores for each family for child disruptive behavior. Scores, were grouped into categories: poor (0% to 25%), fair (25% to 49%), moderate (50% to 79%), high (80% to 100%), and very high (>100%). There was a great deal of variability in generalization scores for child disruptive behavior across families; however, it is clear that the majority of families showed high or very high levels of change in child disruptive behavior at posttreatment in generalization settings. Five of the families showed decreases in their child disruptive behavior generalization scores at follow-up, and four showed increases.

*Satisfaction with Australian-based Triple P materials.* The study also found that the intervention was acceptable to participating families and that pronunciations/idioms exclusive to Australian culture included in the intervention video did not affect understanding of video content. Thus, cultural differences did not seem to be a barrier to *comprehension* of program content. As this was one of the first clinical trials of Triple P with parents from the US, these findings are encouraging and support a large international body of evidence from Australia, and a number of Asian and European countries which collectively attest to the cross cultural success of Triple P. However, commentary is warranted on several other Client Satisfaction Questionnaire (CSQ) items that suggest updating Triple P materials for U. S. populations may be beneficial. First, high CSQ ratings indicated that U.S. parents perceived Australians to have similar behavior problems with their children. This was in contrast to the finding that they did not strongly relate to Australian parents in the video as peers. Although CSQ ratings indicate that these factors did not influence comprehension, it is a topic for future research if participants would respond better to video models they perceive are more similar to themselves. Suggestions from open-ended CSQ questions to use U.S. actors

reinforce the premise that some parents might feel more comfortable with video models to which they can relate. Suggestions to update the video technology (from a VHS to DVD format) and comments that videotape was old (dated) and of poor quality visually suggest ease of use is an important factor influencing program satisfaction. Finally, these suggestions and comments slightly confound the overall results for the intervention video, which received lukewarm scores for content quality and helpfulness in use of parenting strategies. It is possible that mild dissatisfaction with the presentation/entertainment value of the video may have influenced overall ratings for video content, and parents' perceptions of the effectiveness of parenting strategies presented. That said, it is even possible that mild dissatisfaction with the video may have negatively influenced study outcomes. Further study is needed to determine whether the content of the video should be improved, or if a U.S. production with the same content, but with U.S. actors would suffice. Triple P has since switched from a VHS to a DVD video format; thus, issues identified by participants regarding technology may no longer be of concern.

### *Study Limitations*

Although the study demonstrated several strengths, including the use of replicated single-case research designs, the use of independent observational measures, multi-informant assessment and measurement of follow-up, it was not without limitations.

*Measures and reactivity.* There was possible reactivity on the part of the child and the parent. The measure of parent aversive behavior produced baseline floor effects suggesting the possibility of a reactivity effect. A similar pattern occurred for the measure of parent management skills, which did not capture *missed opportunities* to implement strategies included in parenting plans.

Some parents indicated that they were self-conscious about using and correctly implementing Parent Management Skills during videotaped observations. Such admissions suggest that parents may have also modified their typical responses to child disruptive behavior by refraining from reprimands, for example, during baseline. Also, a few parents reported that their children were unusually compliant or misbehaved more than was typical; hence, there is also the possibility of reactivity effects in the measure of child behavior.

Provision of a “booster session” for Triple P practitioners may have influenced their implementation. The booster involved review of a document that explicitly highlighted existing procedures in the Triple P manual that promote generalization, as well as, examples of how to implement generalization strategies. Although no actual modifications were made to delivery of Primary Care Triple P, the question is begged as to whether there would have been less skill generalization if Triple P practitioners had not been explicitly reminded to use generalization strategies.

Generalization probes were not conducted in out-of-home settings. Although results from the Parenting Tasks Checklist showed that parent self-efficacy remained across all settings, future observational studies on generalization would be useful to establish whether changes occur in varied out-of-home settings. Also, Primary Care Triple P is intended for delivery in settings such as general medical practices and community child health clinics with implementation by health care professionals. Because Primary Care Triple P is not typically conducted in-home with implementation by clinicians as in this study, outcomes produced here may not be representative of those produced by other providers in community settings.

*Treatment fidelity.* Another limitation was low treatment fidelity scores for both practitioners implementing the intervention. In fact, it is possible that weak treatment fidelity may have negatively affected study outcomes. Anecdotal reports by practitioners suggested that competing contingencies such as answering parent questions, politely listening to long-winded parent concerns and stories, and competing with parents' attention to their children interfered with fully covering program content in the recommended session time. To assess whether sessions ran in the time they were designed (20-minutes), the mean session time across families was computed showing 40-min., 93-min., 40-min., and 40-min. for sessions 1, 2, 3, and 4, respectively. Additionally, six of nine families received an extra "booster session," and one family required five sessions instead of four. The average dosage, including boosters, was about 4-hours. This is a dramatic departure from the recommended total intervention time of 1-hour and 20-minutes. Moreover, an added booster session does not constitute "Triple P as usual." Overall, the inability of the practitioners to fully cover program content and adhere to the recommended time frame for each session limits conclusions about the feasibility of addressing parent concerns in four, 20-minute sessions. However, this departure from Primary Care Triple P (PCTP) protocol was possibly useful in maintaining treatment gains and may be a necessary modification to PCTP. Data for 50% of children showed downward trends in child disruptive behavior shortly after receiving a booster session and maintained gains at follow-up. Therefore, the results of this research must be considered with caution.

*Participant Selection.* Sample size might be considered another limitation. Some families were atypical participants in Primary Care Triple P because they reported child behavior problems in the clinical range on the Eyberg Child Behavior Inventory, thus, these

families may have required more time than typically offered in Primary Care Triple P. This is supported by the Turner and Sanders (2006) Primary Care Triple P evaluation study in which mean recorded session duration was 40-min. across 4 sessions with families reporting Eyberg Child Behavior Inventory scores in the clinical or elevated range. The results must be interpreted with caution given the mismatch between the study sample and recommended dosage of Primary Care Triple P, as well as, the less than optimal treatment fidelity scores obtained by practitioners. Nevertheless, it is encouraging that most families showed reductions in child disruptive behavior. The use of children with mild child disruptive behavior may have better represented the intended outcomes of Primary Care Triple P. Future replications would benefit from using a more diverse population of parents with a greater representation of minority and low-income families and a longer follow-up. This is especially significant, for example, with child welfare populations for whom many evidence-based parenting practices are intended.

Another participant factor to consider in interpretation of study results is the broad age range (3-to 6-years of age) of the children participating in the study. Although Primary Care Triple P addresses the development of behavior problems for children up to 12-years of age, the newly emerging tantrum behaviors of a 3-year-old may not present the challenges of an older child with a longer history of reinforcement for the same behaviors. In this study, the families with the longest session times (1a and 2b) were those with 5-and 6-year-olds. Session times for 5-and 6-year olds ran significantly longer ( $m=311$ -min.) than families with children in the 3-to 4-year-old range ( $m=198$ -min.). Certainly, disparities in dosage by age skew interpretation of this study's outcomes, as well as, question whether Primary Care

Triple P's four-session consultation model is equally efficient and effective for children of all ages.

### *Clinical Limitations*

*Individual differences in treatment effects.* Another limitation was that individual differences in treatment effects for child disruptive behavior and parent management skills were apparent across experimental conditions, and in some families gains were not stable or maintained. Two influencing factors were identified from assessment of videotaped observations and audiotaped treatment sessions: (1) punishment procedure side effects that resulted in temporary increases in child disruptive behavior; and, (2) lack of adherence to parenting plans. In terms of the former, Family 1b showed a substantial increase in child disruptive behavior at posttreatment before rates decreased below baseline. Video observations revealed that incorrect implementation of quiet time and timeout procedures (and to some extent logical consequences) preceded a spike in child disruptive behavior in both settings that surpassed baseline rates. After a booster session in which correct use of clear, calm instructions and praise was emphasized, a substantial decrease below baseline occurred.

Prior to participation in Primary Care Triple P, this same family reported avoiding misbehavior by reducing task demands and capitulating when noncompliance occurred, thereby reducing the overall amount of punishment. This pattern of interaction developed to avoid escalation of noncompliance to tantrum behaviors that jeopardized the safety of the mother and younger brother. A more individualized approach to delivery of Triple P with this family may have involved an emphasis on nonaversive strategies exclusively.

Evidence of side effects (e.g., increases in child disruptive behavior subsequent to quiet time and/or time-out procedures) was also seen in Family 2b, 3a, and 4a. Lack of adherence to procedural steps of the parenting plan, though observed, was not always the apparent trigger for behavior escalation. Children in these families cried when instructed to go to the quiet time or time-out area. Because of the crying, some families reported difficulty adhering to the procedural steps of quiet time or time-out.

Triple P educators do address parents' resistance to implement quiet time or time-out as a result of behavioral escalation. In this study, parents were advised to persevere in their implementation of quiet time and/or time-out even with behavioral escalation. Parents were told that their children's reaction to quiet time and/or time-out would likely be temporary and that the use of the positive parenting procedures would quickly diminish the need for these procedures. However, based on the observational data, these advisements did not have their intended effect for some parents in this study.

Child behaviors chosen by parents may have affected variability in the amount of generalization shown across families for child disruptive behavior. In some cases, parents chose a generalization setting in which the behavior was functionally dissimilar to the training setting behavior. It became clear that families with high rate behaviors in the training setting were less likely to focus on implementation in the generalization setting. This suggests that direct instruction was likely necessary, especially if the function of the behavior was dissimilar. It also suggests that existing plans were not easily generalized, for example, a parenting plan for eating at dinnertime was not easily generalized to the behavior of fighting with a sibling while the mother was busy. Thus, it may be that a generalization gradient was

not evidenced in families in which training setting stimuli were too dissimilar to the generalization setting.

Poor implementation of parenting skills included in parenting plans was a limitation. This was identified through analysis of videotaped observations of parent management skills (PMS). Although PMS coding produced a low ceiling of scores, mean sample scores at posttreatment showed improvement - a 97% increase in the training setting and a 39% increase in the generalization setting. However, decreases in PMS scores from posttreatment to follow-up provide evidence to support this study's observational findings that parents' overall correct implementation of Triple P strategies declined over time. The PMS score reflects a parent's "partially correct" and/or "correct" implementation of PMS; the data show that the posttreatment scores for the group mostly reflect "partially correct" implementation. Given the lack of mastery at posttreatment in PMS, and somewhat diminished skill level at follow-up, it is questionable whether improvements in child disruptive behavior seen here at short-term follow-up would have maintained.

A factor that possibly influenced adherence to parenting plans that emerged from listening to audiotapes of treatment sessions was the parenting philosophy that children should not receive "rewards" for behaving appropriately and following instructions. Some parents expressed discomfort with providing tangible rewards, or using praise, as part of a parenting plan. This may have influenced adherence to delivery of praise contingent upon instruction-following, delivery of attention, affection, and contingent praise for the absence of misbehavior, and follow-through on token reinforcement systems. These parents may have benefited from additional training that emphasized child disruptive behavior, such as noncompliance, as a skill deficit in instruction-following (rather than just a problem

behavior) to alter their expectations that children should behave appropriately without contingent consequences.

Finally, it is possible that monetary compensation may have influenced parents' performance in terms of adherence to intervention plans, finishing homework assignments, completing all sessions, etc. Although it is unknown how monetary compensation influenced parents' performance in this study, families had an advantage, in that, they were already highly motivated to complete the intervention. Thus, outcomes of this study may not mirror those found for families receiving Primary Care Triple P in nonresearch settings.

*What was learned about generalization?*

Considering the limitations, study outcomes, and anecdotal data from coded video-observations, what can be said about generalization in Primary Care Triple P? It was especially likely to occur when behaviors were functionally similar across settings. In future studies, selection of a training setting should include careful consideration of a stimulus setting that will closely parallel most other settings or situations in which the target behavior occurs. Based on the current study's results, when parents choose to target a behavior that has different functions across settings, it is likely that more than four sessions may be required. Also, skill generalization was more likely in highly motivated families; it occurred in the majority of families with ECBI problem scores at or above the clinical cutoff. Thus, in order for skill transfer to show the widest effects, practitioners should help parents identify child disruptive behaviors that occur across a variety of conditions with the same or similar function. Targeting these behaviors first may result in more dramatic reductions in the overall rate of child disruptive behavior, as well as, reinforce parent implementation and increase parent satisfaction. Generalization was *less likely* to occur in settings: (1) where parents have

limited supervision; (2) with competing contingencies; (3) in which parents perceive behaviors as tolerable; (4) where discriminative stimuli are dissimilar to the training setting; and, (5) where the behavior is functionally dissimilar. Knowledge of the conditions that make generalization of skills less likely can help practitioners better guide parents which child disruptive behaviors to target first, as well as, which behaviors to address separately.

*Suggestions for future research on Primary Care Triple P.*

In their early generalization studies, Sanders and Glynn (1981) used baseline and posttreatment observation data and probed whether rates of problem behavior matched parents' perceptions. These procedures have been reduced to in-vivo observations during sessions in Primary Care Triple P to maximize efficiency by providing "the minimal amount of assistance required to effect change at the earliest point of contact" (Turner & Sanders, 2006, pp. 3-4) so that Triple P can achieve a wide-reaching effect. Understandably, minimizing data collection procedures, such as collecting baseline data on child disruptive behavior, is imperative to cut costs. Curtailing observational aspects of the intervention also expedites treatment in applied settings. However, adding video data to Primary Care educational sessions with families may improve treatment outcomes and expedite generalization of parenting strategies for the following reasons: (1) parent resistance may be reduced by sharing parent-child interaction baseline data and pinpointing child behavior patterns that parents may inadvertently be reinforcing; (2) reviewing observations of parents' implementation of parenting strategies provides an opportunity for practitioners to reinforce correct implementation or provide feedback for incorrect implementation; (3) occasions for generalization can be pinpointed by highlighting missed opportunities; and, (4) practitioners can review alternative ways to apply parenting strategies when obstacles are encountered.

Practitioner review of observational data may also prompt parents to self-monitor. In this study, many parents believed they were correctly implementing strategies when they were not. This greatly reduces the chances of skill transfer. The question is, without direct observation and feedback by the practitioner, how would they know? The experimenter shared her data analysis of the first posttreatment observation with practitioners, who were able to extrapolate where to focus their attention in booster sessions. Another question for future research is: What happens to families receiving Primary Care Triple P from a family physician or other professional who is unable to observe interactions in the home?

Given that video data would be a costly enterprise at a population level it is unlikely that this quality of feedback is practical for Primary Care Triple P. The South Carolina practitioner in this study, however, used a booster session to observe a structured parent-child interaction after which she provided the parent with detailed feedback on implementation, problem-solved obstacles encountered, and answered logistical questions of language and timing. This level of detail is provided in Standard Triple P (10 sessions). Future research on Primary Care Triple P might examine whether the inclusion of a brief, structured parent-child interaction with feedback from the practitioner to ensure that the parent is correctly implementing the parenting plan would increase skill generalization.

*Primary Care Triple P as a public health intervention.* As many existing evidence-based parenting programs range from 13-to 27-sessions, (Axelrad, Garland, & Love, 2009), the development of lighter touch interventions increases the range of cost effective interventions available to service providers delivering early intervention services for families. Future research might examine whether variations of the Primary Care Triple P intervention could be effective with parents of older children and teenagers, parents at risk for child

maltreatment, or even parents of children with intellectual and developmental disabilities. The potential value of Primary Care Triple P as part of a more comprehensive public health intervention targeting parenting support was recently highlighted in a population trial of the Triple P System in the U. S. (Prinz, Sanders, Shapiro, Whitaker, & Lutzker, 2009). The trial demonstrated that implementation of all five levels of Triple P across the population resulted in significantly lower levels of child maltreatment, foster placements, and child injuries in those counties implementing Triple P compared to those counties receiving services as usual. Within that trial, approximately three quarters of all families accessing Triple P did so through Primary Care Triple P. Costs of building a public health infrastructure for delivering Triple P population-wide were estimated to be less than \$12 per child (Foster, Prinz, Sanders, & Shapiro, 2008), while cost per child for abuse and neglect to taxpayers was estimated at nearly \$100,000 by Corso and Lutzker (2006). In 2009, three million children received child protective services (U.S. Department of Health & Human Services, 2010). Using these data as a rough estimate, it is possible that about 300 billion dollars were spent on child protective services in 2009. In contrast, delivering Triple P population-wide conceivably would have only cost taxpayers approximately 36 million.

Thus, based on preliminary data, costs of building a public health infrastructure to support dissemination of Triple P to improve parenting practices at a population level are quite modest compared to the cost for not doing so.

#### Summary

This study extended existing research relating to Primary Care Triple P (Turner & Sanders, 2006) by exploring the across-settings generalization effects of the intervention. Observations of parent-child interaction in the home supported the efficacy of the

intervention, with findings showing that the intervention was associated with lower levels of child disruptive behavior in target training settings and in various generalization settings. Short-term intervention effects for observed child disruptive behavior were maintained by most families at 4-to 8-week follow-up. Further, quantification of generalization effects using the “generalization score” showed that the majority of families showed high or very high levels of change in child disruptive behavior at posttreatment in generalization settings. Parent self-report data also showed significant reductions in intensity and frequency of disruptive behavior, an increase in task-specific parental self-efficacy, improved scores on the Parent Experience Survey, and moderate to high levels of satisfaction. Parent self-report data are particularly important because they represent the clearest favorable outcomes in terms of parents’ perspectives of improvements in child behavior. Though direct observations represent strong evidence of intervention effectiveness, they capture only snapshots of child behavior, and were potentially limited by parent and child reactivity.

The field of parent training has progressed over the decades from simple single-case designs and case studies to evidence-based practices widely implemented. Triple P has taken a public health approach to parent training, The current research examined the generalization effects of one of its components, Primary Care Triple P, a “packaged” program which makes it easy for practitioners to learn, and for families to accept as a model of parenting. It has the potential to become a universal parenting program disseminated throughout the U.S.; it is already widely recognized and commercialized in the U.K. and Australia (Sanders, Raulph, Thompson, Sofronoff, Gardiner, Bidwell, & Dwyer, 2005). It may be useful to further explore whether parents maintain and correctly implement skills and generalize these strategies to novel situations and/or siblings. Indeed, generalization effects of parenting

interventions such as Primary Care Triple P are important, but remain understudied, and future studies may provide further insight into the mechanisms that underpin generalization effects.

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## Appendix A

Table A1

Demographic information: Child and sibling age and sex, parent age, education, and employment status, target behaviors, and settings.

Family	Child Age/ Sex	Sibling	M Age	F Age	Mother Education/ Employment Status	Father Education/ Employment Status	Target Behavior/ Training Setting	Target Behavior/ Generalization Setting
1a	5-yr. old Male*	NA	43	39	Bachelor's Degree Full-time	Some college Part-time	Food refusal, noncompliance at dinnertime/kitchen	Noncompliance with cleanup after playtime /living room
1b	4.5-yr. old male	2-yr. old male	33	37	Bachelor's Degree Stay home mother	Bachelor's Degree Full-time	Noncompliance with cleanup after playtime/living room	Noncompliance with instructions when getting ready to go out/kitchen
2a	4-yr. old male	2-yr. old female	33	35	Graduate Degree Part-time	Graduate Degree Full-time	Food refusal at dinnertime/kitchen	Pushing, hitting sibling at playtime/playroom
2b	6-yr. old female	2-yr. old female	33	37	Bachelor's Degree Part-time	Bachelor's Degree Full-time	Noncompliance with clean-up/child bedroom	Food refusal at dinner- time/dining room
3a	3-yr. old female	3-yr. old twin female	29	29	Bachelor's Degree Full-time**	Bachelor's Degree Full-time	Food refusal at dinnertime/kitchen	Noncompliance, aggressive behavior w/sibling during play/living room
3b	3-yr. old female	1-yr. old male	34	39	Graduate Degree Full-time	Bachelor's Degree Full-time	Food refusal at dinnertime/kitchen	Noncompliance with bath time routine/ bathroom***
4a	6-yr. old female	6-mo. old female 4-yr. old male	31	33	Graduate Degree Full-time	Graduate Degree Full-time	Noncompliance w/setting table/ dining room	Noncompliance with clean-up and aggressive behaviors w/sibling/ sibling's bedroom
4b1	4-yr. old male	7-yr. old female	37	37	Graduate Degree Full-time	Graduate Degree Full-time	Food refusal at dinner time/kitchen	Noncompliance w/bath time routine/ bathroom
4b2	3-yr. old female	11-mo. old male	33	39	Graduate Degree Full-time	Bachelor's Degree Full-time	Noncompliance, tantrum behaviors at bedtime/bathroom & bedroom	Noncompliance with instructions at dinnertime/dining room

Notes: M=mother. F=father. \* = Successfully completed a 2-year speech therapy program. \*\* = Seen by a mental health professional for "a few visits" in the last 6-months. \*\*\* = Some direct training occurred for the generalization setting.

Table A2

*Inter-observer Reliability Scores for Family Observation Scale (FOS) and Parent Management Skills (PMS) Coding by Family and Condition.*

Family	FOS Baseline	FOS PTTX	PMS Baseline	PMS PTTX
1a	96.01%	87.08%	95.0%	91.6%
1b	88.45%	94.41%	81.86% <sup>a</sup>	64.51% <sup>a</sup>
2a	85.07%	87.3%	91.84%	90.48%
2b	85.6%	89.47%	97.09%	84.3% <sup>a</sup>
3a-TC	87.2%	87.5%	83.01% <sup>a</sup>	88.14%
3a-GC	87.5%	90.0%	89.4%	85.0%
3b	88.89%	84.85%	94.12%	89.58%
4a	81.34%	86.11%	94.39%	69.01% <sup>a</sup>
4b1	92.33%	89.86%	91.89%	96.67%
4b2	90.04%	90.54%	93.67%	95.38%

Note: Target Child = TC; Generalization Child = GC. Posttreatment = PTTX. <sup>a</sup>Below inter-observer reliability criterion for PMS, retraining occurred.

Table A3

*Treatment Fidelity Scores by Family, Practitioner Location, and Session Number.*

Family	Practitioner Location	Session 1	Session 2	Session 2 Parenting Plan Only	Session 3	Session 4
1a	SC	77%	69%	100%		
1b	ATL		73%	78%	70%	
2a	ATL		82%	89%	84%	
2b	SC		64%	67%		57%
3a	ATL		78%	67%		68%
3b	ATL	85%	76%	61%		
4a	ATL	86%	77%	67%		
4b1	ATL		66%	83%		67%
4b2	ATL		68%	78%	48%	

Note: Columbia, South Carolina = SC; Atlanta, GA = ATL.

Table A4.

*Examples of Triple P Components or Strategies that Promote/Provide Opportunities to Program for Generalization*

<b>Triple P Procedures</b>	<b>Example</b>	<b>Mechanism for Promoting Generalization</b>
Parent monitoring of target behavior	Behavior Diary: Tracks setting events, antecedents, and consequences of the target behavior (ABCs)	Helps parents discriminate that a different situation/setting may share similar ABCs
Train Loose: Practitioner refers to target behaviors in general and specific terms	“He refuses to wash his hands before dinner” vs. “He refuses to follow your instructions.”	Helps parents identify behavior that is in the same response class
Practitioner review of <i>Monitoring Forms</i>	“Looking at the behavior diary, can you identify similarities in the circumstances (ABCs) surrounding the behavior?”	Helps parents learn that behavior occurs under a predictable set of circumstances and that there are reliable reinforcing consequences delivered for engaging in the behavior
Practitioner sharing ABCs observed in home sessions	“I noticed that when he didn’t listen to your instructions, you withdrew your request and completed the task for him.”	Provides parents with another exemplar of causal factors for the problem behavior
Prompting	“Can you think of another situation where your reaction to a problem behavior is similar?”	Helps parents independently analyze their child’s and own behavior.
	“Can you think of other situations in which the parenting plan can be applied?”	Helps parents recognize other situations in which parenting plan can be used
Use of the <i>Planning Ahead Form</i>	Parent identifies a situation in which the behavior is likely to occur, decides whether the existing parenting plan will work well in that situation, and modifies the strategies as needed.	Instructs parents that they should be thinking of ways to modify the existing plan to suit the activity, situation, or setting.
Modeling, role-plays, sufficient exemplars	Practitioner role-plays the target behavior and the parent implements the steps of the parenting plan; the parent adjusts implementation as the practitioner changes the circumstances of the role-play.	Parent learns logistics of the parenting strategies. Prepares the parent to react similarly in different situations/settings and/or discriminate when to react differently when modifications to the plan are needed.
Review of practice tasks	Practitioner provides specific positive feedback on novel instances of plan implementation and prompts parents to think of other settings/situations in which the plan can be used.	Reinforces correct use of parenting plan in new situations/settings.
Least to most prompting for new behavior problems	“Can you think of how to modify the existing plan you use in the home to work in the community?”	Helps parents learn to problem-solve new behavior problems using the strategies they have learned.

Table A5

*Eyberg Child Behavior Inventory (ECBI): Intensity and Problem Scores at Baseline and Follow-up, with Percent Decrease from Baseline to Follow-up.*

<u>Family</u>	Baseline ECBI Intensity	Baseline ECBI Problem	Follow-up ECBI Intensity (% Decrease)	Follow-up ECBI Problem (% Decrease)
1a	128	14	63 (51%)	4 (71%)
1b	115	15*	71 (38%)	5 (67%)
2a	186*	14	106 (43%)	4 (71%)
2b	123	20*	74 (40%)	10 (50%)
3a-TC	170*	23*	89 (48%)	9 (61%)
3a-GC	170*	23*	109 (36%)	12 (48%)
3b	115	14	87 (24%)	5 (64%)
4a	138*	18*	62 (55%)	4 (78%)
4b1	107	11	74 (31%)	4 (64%)
4b2	121	19*	100 (17%)	12 (37%)

Note: Target Child = TC; Generalization Child = GC. \*Scores at or above the ECBI clinical cutoff.

Table A6

*Parenting Tasks Checklist (PTC) Scores from Baseline, to Posttreatment, to Follow-up with Percent Change from Baseline or Posttreatment.*

<u>Family</u>	Baseline	Posttreatment (% Increase)	Follow-up (% Increase or Decrease)
1a	38.43	91.25 (137%)	94.64 (4% ↑ from PTTX)
1b	65		98.21 (51% ↑ from Baseline)
2a	35.71	66.07 (85%)	73.93 (12% ↑ from PTTX)
2b	72.14	93.75 (30%)	95.36 (2% ↑ from PTTX)
3a-TC		84.64	95.0 (12% ↑ from PTTX)
3a-GC	48.21		93.5 (94% ↑ from Baseline)
3b	61.79	85.5 (39%)	88.21 (3% ↑ from PTTX)
4a	58.57	91.79 (57%)	91.61 (.20% ↓ from PTTX)
4b1	52.14	72.14 (38%)	68.21 (5% ↓ from PTTX)
4b2	62.86	90.71 (44%)	89.64 (1.20% ↓ from PTTX)

Note: Target Child = TC; Generalization Child = GC. Posttreatment = PTTX. “↑” = increase, and “↓” = decrease.

Table A7

*Parenting Experience Survey (PES) Ratings by Parent at Pretest (Pre) and Posttest (Post) with Total Items Improved and Declined, Total Points Improved and Declined, and PES Pretest and Posttest Scores.*

PES Items	1a	1a	1b	1b	1b	1b	2a	2a	2a	2a	2b	2b	2b	2b	3a	3a	3a	3a
	Pre M	Post M	Pre M	Pre F	Post M	Post F												
1. In an overall sense, how difficult has your child's behavior been over the last 6-weeks?	3	2	4	3	2	3	4	4	4	3	5	3	2	1	3	3	3.5	3
2a. Parenting is rewarding	5	5	3	3	5	4	3	4	3	5	2	3	4	4	3	5	2	5
2b. Parenting is demanding	5	3	3	3	5	4	4	4	4	2	4	3	4	3	4	4	5	5
2c. Parenting is stressful	4	1	3	3	3	3	4	4	4	2	4	4	3	2	4	3	5	4
2d. Parenting is fulfilling	4	5	4	4	5	4	3	5	4	5	3	3	4	4	3	4	3	5
2e. Parenting is depressing	3	1	1	3	1	2	3	1	2	1	2	2	2	2	3	1	2	1
3. In the last 6-weeks, how confident have you felt to undertake your responsibilities as a parent?	2	4	3	3	4	4	3	3	3	4	3	2	3	4	3	3	3	4
4. How supported have you felt in your role as a parent over the last 6 weeks?	2	4	4	4	4	5	3	3	3	5	4	4	4	4	3	5	4	5
5. To what extent do you and your partner agree over methods of disciplining your child	3	3	5	4	5	5	3	2	4	5	3	3	4	4	4	3	4	4
6. How supportive has your partner been towards you in your role as a parent as the last 6-weeks?	3	4	5	4	5	5	4	4	4	5	4	4	5	4	4	4	3.5	4
7. In an overall sense, how happy do you consider your relationship with your partner to be?	5	5	5	5	5	5	4	3	4	4	5	4	5	5	3	4	3	4
PES Pretest & Posttest Scores	33	47	42	39	46	44	32	35	35	49	33	35	42	45	33	41	30.5	42

Table A7 Cont.

PES Items	3b	3b	3b	3b	4a	4a	4a	4a	4b1	4b1	4b1	4b1	4b2	4b2	4b2	4b2
	Pre	Pre	Post	Post												
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1. In an overall sense, how difficult has your child's behavior been over the last 6-weeks?	3	2	2	2	3	3	2	3	3	3	2	2	3	3	2	2
2a. Parenting is rewarding	4	3	5	4	5	4	5	4	3	4	3	5	4	3	4	4
2b. Parenting is demanding	5	4	4	3	4	5	4	5	4	4	4	4	5	4	5	4
2c. Parenting is stressful	4	4	4	4	3	3	2	3	4	3	4	3	4	4	4	3
2d. Parenting is fulfilling	5	3	5	4	5	4	5	5	3	5	3	5	5	3	4	5
2e. Parenting is depressing	2	2	1	2	1	1	1	2	1	2	2	2	1	1	1	1
3. In the last 6-weeks, how confident have you felt to undertake your responsibilities as a parent?	3	3	4	3	3	4	5	4	3	4	3	5	3	3	4	4
4. How supported have you felt in your role as a parent over the last 6 weeks?	3	3	4	3	3	4	4	4	4	4	5	5	5	3	5	4
5. To what extent do you and your partner agree over methods of disciplining your child	4	4	4	4	4	3	5	4	4	5	4	5	4	4	4	4
6) How supportive has your partner been towards you in your role as a parent as the last 6-weeks?	3	3	4	4	5	4	5	4	4	5	4	5	5	5	5	4
7) In an overall sense, how happy do you consider your relationship with your partner to be?	4	4	4	4	5	4	5	5	5	5	5	5	4	3	4	4
PES Pretest & Posttest Scores	36	35	43	39	43	39	49	41	38	44	39	48	41	36	42	43

Note: 1=Not at all, 2=Slightly, 3=Moderately, 4=Very, and 5=Extremely. M=Mother. F=Father.

Table A8

*Client Satisfaction Questionnaire Program Ratings (Scale = 1 to 7; Higher = Better) by Parent with Individual Item, Parent, and Program Score Means and Standard Deviations.*

Client Satisfaction Questionnaire (CSQ) Program Items	1a	1b	1b	2a	2a	2b	2b	3a	3a	3b	3b	4a	4a	4b1	4b1	4b2	4b2	Item	Item
	M	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	Mean	S.D
How would you rate the quality of the services you and your child received?	7	5	5	5	6	6	7	7	4	6	5	7	6	5	6	5	7	5.8	.95
Did you receive the type of help you wanted from the program?	7	5	5	5	5	7	7	6	4	7	5	7	5	5	5	5	6	5.6	1.0
To what extent has the program met your child's needs?	7	5	4	3	3	6	5	5	4	5	5	6	5	4	5	5	6	4.9	1.05
To what extent has the program met your needs?	7	5	4	3	7	7	5	5	4	5	5	7	5	4	5	5	6	5.2	1.20
How satisfied were you with the amount of help you and your child received?	7	6	5	4	6	7	6	5	5	6	6	7	6	5	6	5	7	5.8	.88
Has the program helped you to deal more effectively with your child's behavior?		5	5	5	6	7	7	6	5	7	5	7	7	5	5	5	7	5.9	.96
Has the program helped you to deal more effectively with problems that arise in your family?	7	5	5	4	6	7	7	5	5	5	5	7	6	5	5	5	7	5.6	1.0
Do you think your relationship with your partner has been improved by the program?	5	5	4	4	5	3	6	5	4	5	4	6	6	3	3	4	5	4.5	1.0
In an overall sense, how satisfied are you with the program you and your child received?	7	5	5	4	6	7	7	6	4	7	5	7	7	5	6	5	7	5.9	1.11
If you were to seek help again, would you come back to Triple P?	7	4	5	5	5	7	7	6	4	7	5	6	6	5	4	4	6	5.5	1.12
Has the program helped you to develop skills that can be applied to other family members?		5	5	5	3	7	7	5	4	7	5	7	6	6	5	5	6	5.5	1.15
In your opinion, how is your child's behavior at this point?	7	6	5	5	5	7	7	5	4	6	6	6	6	6	6	6	6	5.8	.81
How would you describe your feelings at this point about your child's progress?	7	6	5	5	5	7	7	6	4	6	6	7	6	5	6	6	7	5.9	.90
Parent Item Rating Mean	6.8	5.2	4.8	4.4	5.2	6.5	6.5	5.5	4.2	6.1	5.2	6.7	5.9	4.8	5.2	5.0	6.4		
Parent Item Rating S.D.	0.6	0.6	0.4	0.8	1.2	1.1	0.8	0.7	0.4	0.9	0.6	0.5	0.6	0.8	0.9	0.6	0.7		
CSQ Program Score	75	67	62	57	68	85	85	72	55	79	67	87	77	63	67	65	83		
CSQ Program Score Mean and S.D.	71.41	9.99																	
CSQ Program Score Mother (M) Mean and S.D.	72.22	10.20																	
CSQ Program Score Father (F) Mean and S.D.	70.5	10.36																	
Program Items Mean and S.D.	5.5	.43																	

Table A8 Cont.

*Client Satisfaction Questionnaire Materials Ratings (Scale = 1 to 7; Higher = Better) by Parent with Individual Item, Parent, and Material Score Means and Standard Deviations.*

Client Satisfaction Questionnaire (CSQ) <i>Materials</i> Items	1a M	1b M	1b F	2a M	2a F	2b M	2b F	3a M	3a F	3b M	3b F	4a M	4a F	4b1 M	4b1 F	4b2 M	4b2 F	Item Mean	Item S.D.
How would you rate the quality of what is covered in the Triple P parenting video?	5	4	4	3	3	5	5	7	4	6	4	6	6	3	3	5	3	4.5	1.28
How would you rate the quality of what is covered in the Triple P parent tip sheets and parent booklet?	5	5	4	5	7	5	5	6	4	5	5	6	7	5	3	6	6	5.2	1.03
How helpful was the video in understanding or dealing with your child's behavior?	6	4	4	4	3	5	6	7	5	6	5	7	6	3	2	5	4	4.8	1.42
Did you relate to the parents in the Triple P video?	6	4		4	7	5	5	7	6	6	4	6	5	3	2	3	4	4.8	1.47
Seeing parents apply the Triple P parenting strategies in the video helped me understand the parenting strategies I learned	5	3		4	6	4	4	7	5	5	6	7	5	3	3	3	3	4.6	1.41
Were you able to understand what was being said by parents in the Triple P parenting video?	5	7		4	7	6	7	7	6	6	5	6	7	7	7	6	4	6.1	1.06
Were you able to understand what was being said by narrators and presenters in the Triple P parenting video?	6	7		4	7	6	7	7	7	6	5	7	7	7	7	6	6	6.4	.89
Would you recommend the Triple P video to family and friends?	6	4		4	5	4	5	7	6	6	6	7	6	3	3	4	3	4.9	1.39
Would you recommend the Triple P tip sheets and parent booklet to family and friends?	6	4	5	5	7	6	5	7	6	7	4	7	7	5	4	6	6	5.7	1.10
Australian parents, like the ones in the video, have similar problems with their kids as parents in the United States.	7	7		7	7	6	6	7	7	7	6	7	7	7	7	6	6	6.7	.48
Parent Item Rating Mean	5.7	4.9	4.3	4.4	5.9	5.2	5.5	6.9	5.6	6.0	5.0	6.6	6.3	4.6	4.1	5.0	4.5		
Parent Item Rating S.D.	0.7	1.5	0.5	1.1	1.7	0.8	1.0	0.3	1.1	0.7	0.8	0.5	0.8	1.8	2.1	1.2	1.4		
CSQ Material Score	57	49	17	44	59	52	55	69	56	60	50	66	63	46	41	50	45		
CSQ Material Score Mean and S.D.	51.71	11.94																	
CSQ Material Score Mother (M) Mean and S.D.	54.78	8.79																	
CSQ Material Score Father (F) Mean and S.D.	48.25	14.55																	
<i>Materials</i> Items Mean and S.D.	5.4	.79																	

Table A9

*Client Satisfaction Questionnaire (CSQ) Rating Means and Standard Deviations (Scale = 1 to 7; Higher = Better) by Parent, CSQ Total Scores, and Total CSQ Mean and Standard Deviation.*

Parent (Mother = M, Father = F)	1a M	1b M	1b F	2a M	2a F	2b M	2b F	3a M	3a F	3b M	3b F	4a M	4a F	4b1 M	4b1 F	4b2 M	4b2 F
Parent Total CSQ Mean	6.3	5.0	4.6	4.4	4.4	6.0	6.1	6.1	4.8	6.0	5.1	6.7	6.1	4.7	4.7	5.0	5.6
Parent Total CSQ S.D.	0.8	1.1	0.5	.09	1.4	1.2	1.0	0.9	1.0	0.8	0.7	0.5	0.7	1.3	1.6	0.9	1.4
CSQ Total Score	132	116	79	101	127	137	140	141	111	139	117	153	140	109	108	115	128
Total CSQ Mean	5.5																
Total CSQ S.D.	.70																

Note: Highest CSQ Score Possible = 161, Lowest Score Possible = 23.

Table A10

*Generalization scores at posttreatment and follow-up across all families for child disruptive behavior (CDB). Generalization scores were grouped into categories: poor (0% to 25%), fair (25% to 49%), moderate (50% to 79%), high (80% to 100%), and very high (>100%).*

Family	CDB Generalization Score PTTX	CDB Generalization Score FU
1a	81.08 (high)	130.12 (very high)
1b	86.88 (high)	53.87 (moderate)
2a	49.99 (moderate)	522.71 (very high)
2b	114.00 (very high)	79.37 (moderate)
3a target child	28.62 (poor)	57.82 (moderate)
3a generalization child	NA	NA
*3b	132.24 (very high)	58.65 (moderate)
4a	131.42 (very high)	65.24 (moderate)
4b	55.17 (moderate)	47.18 (fair)
4b2	84.51 (high)	191.77 (very high)

Note: NA=A generalization score could not be computer for 3a generalization child because no change occurred in the training setting for the generalization child, that is, parents did not generalize skills across siblings in the training setting. \*= Interpret with caution; this family received some instruction on implementing the parenting plan in the generalization setting.

## Appendix B

Figure B1. Percent intervals child disruptive behavior in all conditions across target and generalization settings in families 1a and 1b

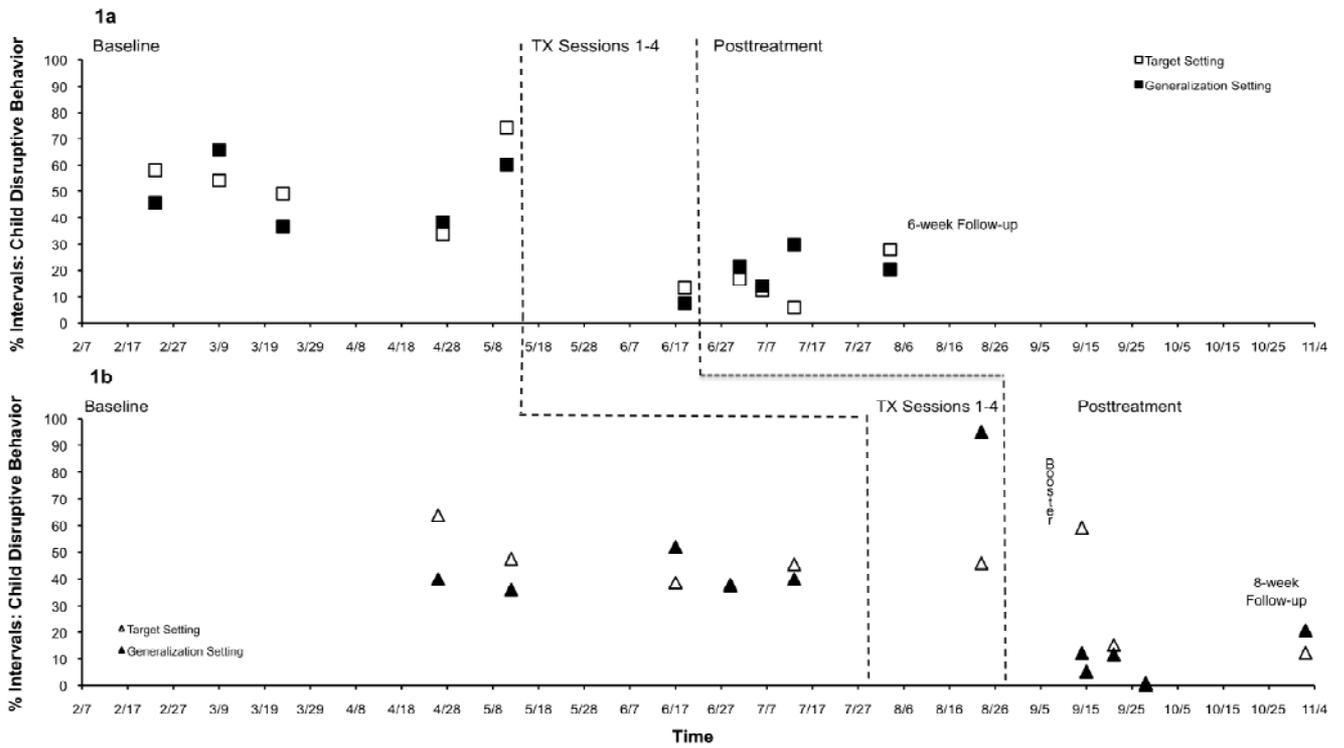


Figure B2. Percent intervals child disruptive behavior in all conditions across target and generalization settings in families 2a and 2b

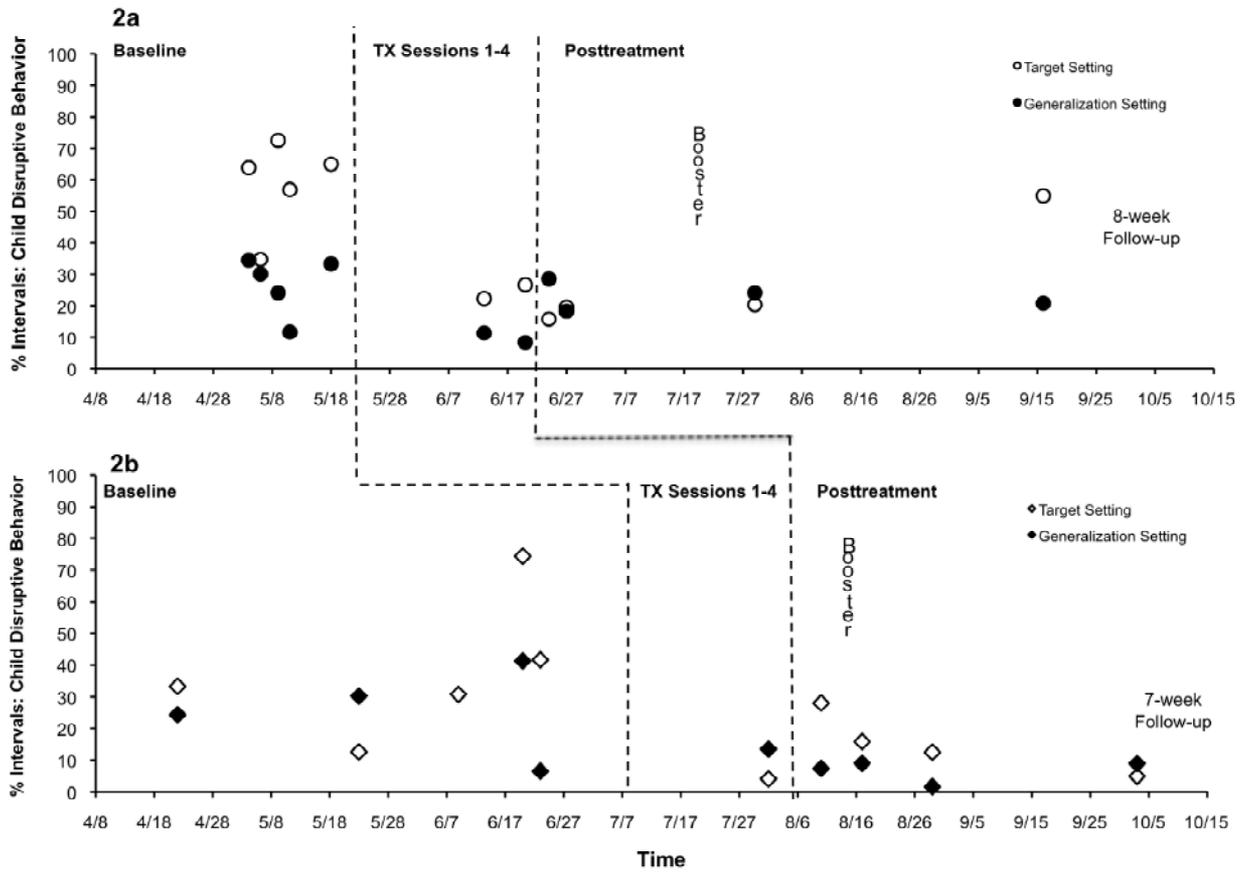


Figure B3. Percent intervals child disruptive behavior in all conditions across target and generalization settings for families 3a (target and generalization child) and 3b.

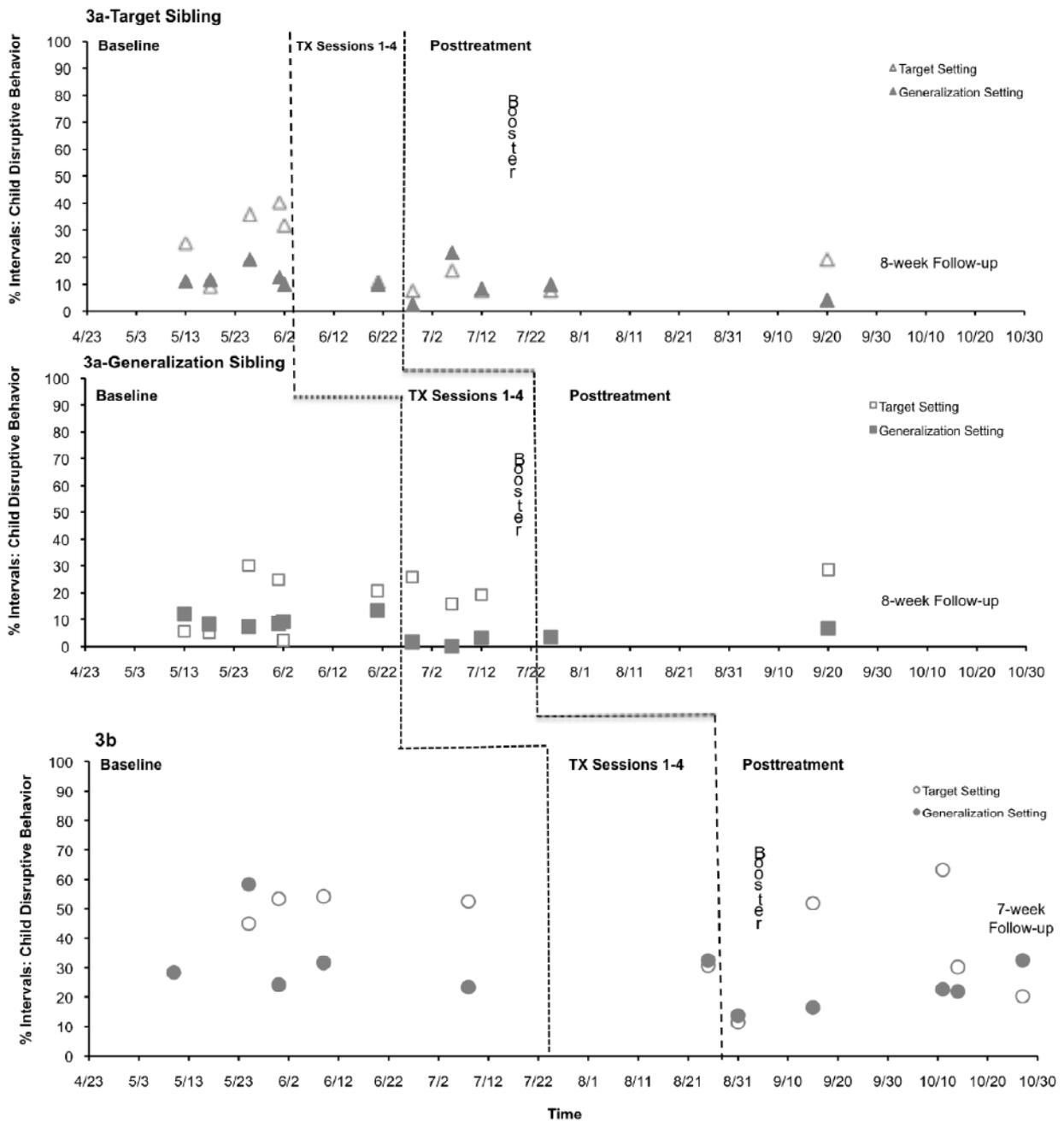


Figure B4. Percent intervals child disruptive behavior in all conditions across target and generalization settings in families 4a, 4b1, and 4b2.

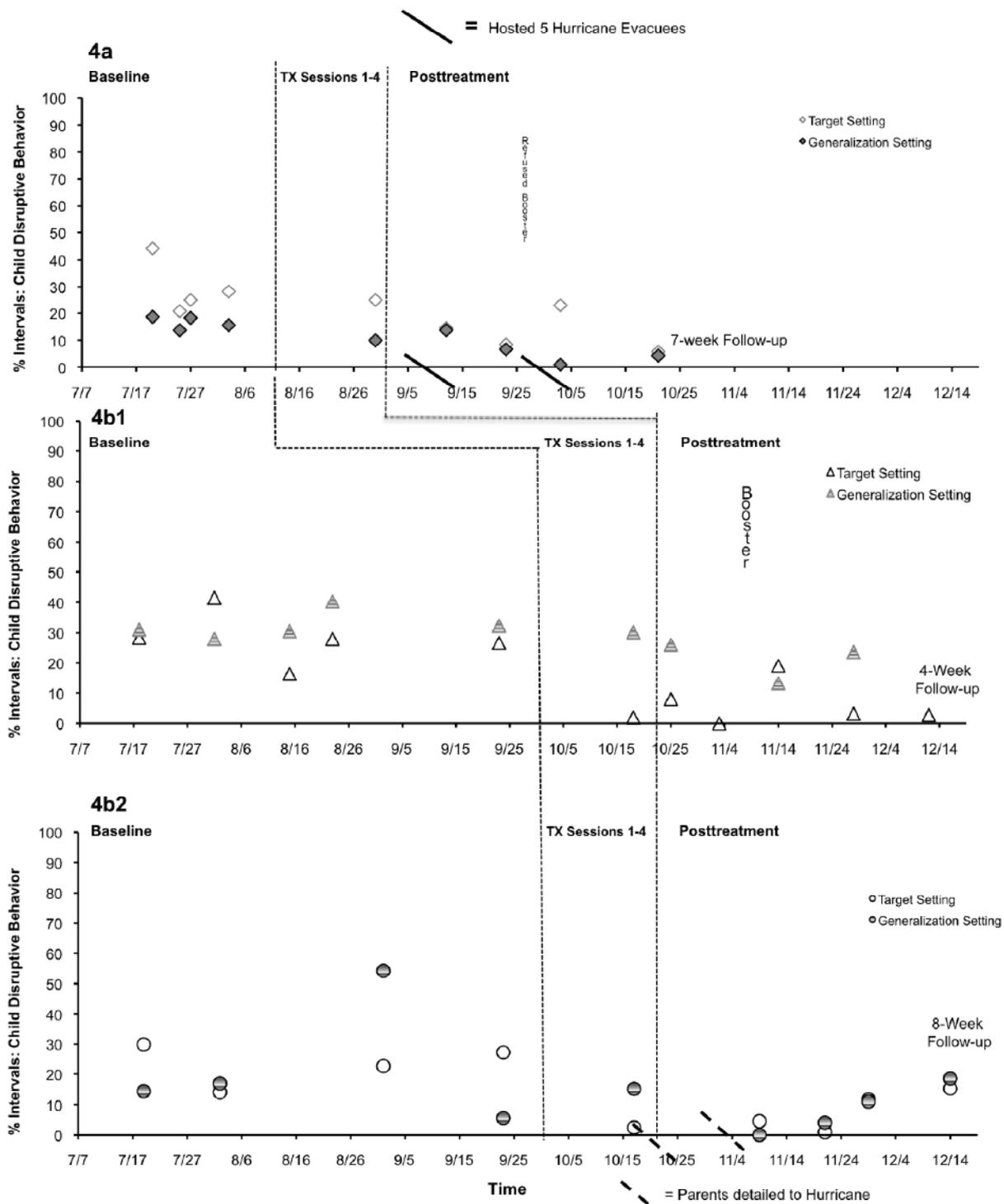


Figure B5. Average Eyberg Child Behavior Inventory (ECBI) Intensity and Problem Scores at baseline and follow-up

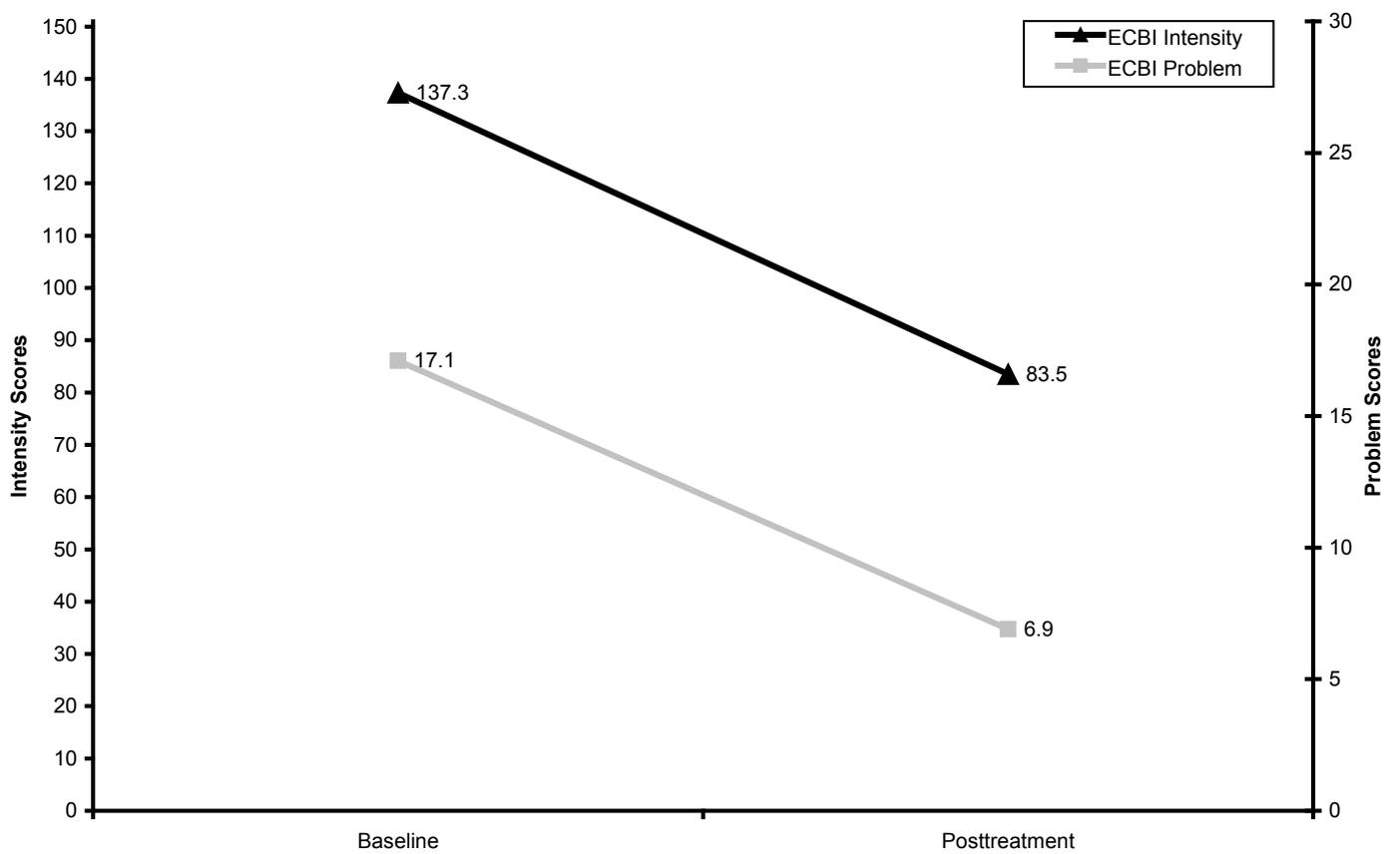
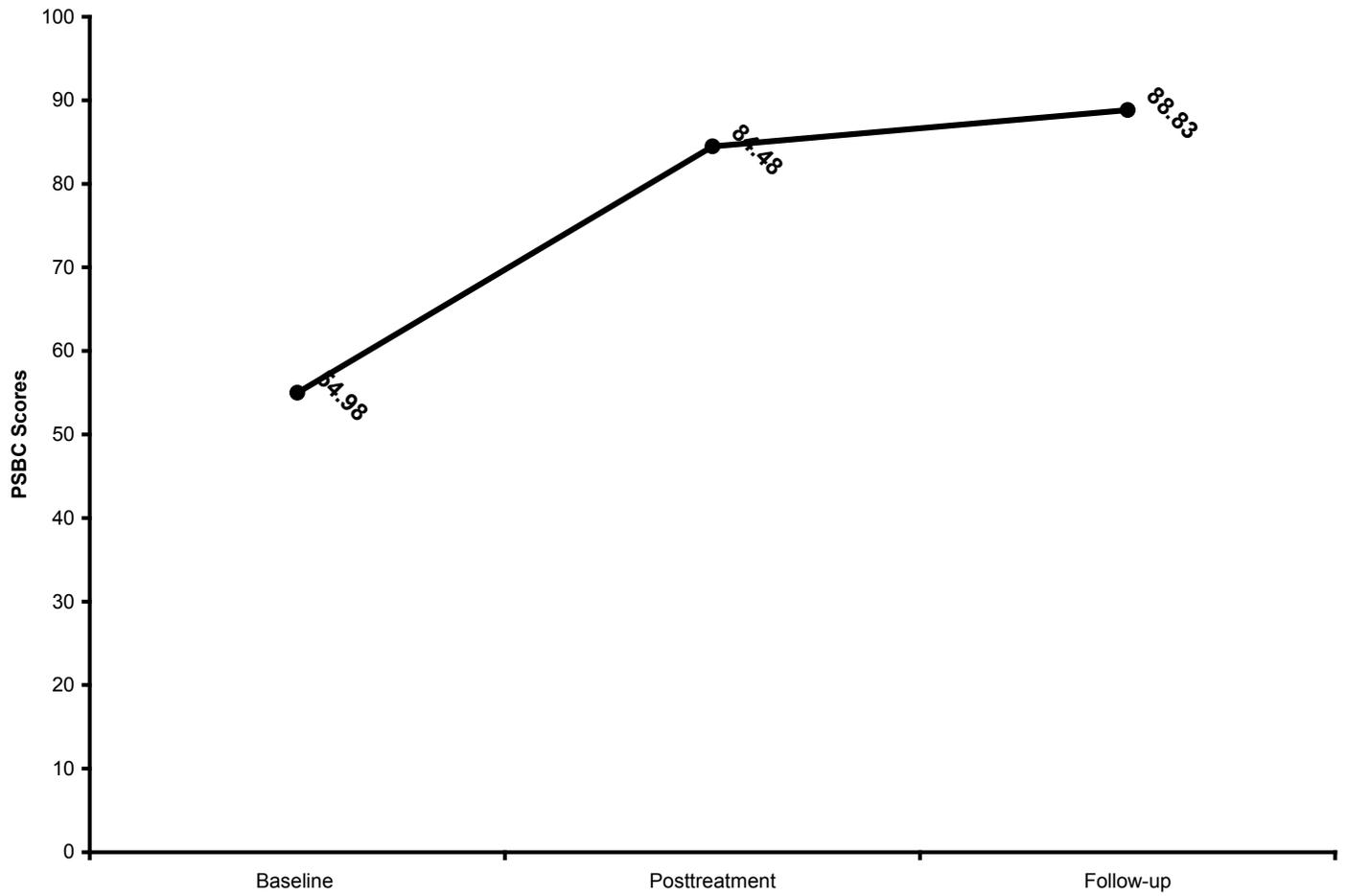


Figure B6. Average Parenting Tasks Checklist (PTC) scores at baseline, posttreatment, and follow-up.



## **Appendix C**

## Parent Management Skill Operational Definitions and Coding Criteria\*

**C** = Any interval where there are NO procedural [P] errors and up to 2 affect/postural [A/P] errors

**PC** = Any interval where one or more parent management categories are scored and there is NO MORE THAN 1 procedural error (postural/affect errors allowed) in the interval

**IC** = Any interval where one or more parent management categories are scored and there are two or more procedural errors in the interval

### Descriptive Praise

- [P] Is Clear:
  - Child understands the words used
  - It is understandable to the child that the parent's comment is positive and approving
- [P] Is Specific: Parent refers to the child's behavior in his/her praise statement (e.g., good sharing)
- [P] Describes an aspect of the behavior the parent likes: An adverb/adjective is attached to the behavior being praised (e.g., thank you for asking nicely)
- [P] Is Contingent & Immediate: Praise occurs in response to an appropriate child behavior that the parent wants to maintain or increase. Praise occurs within 5-seconds of the child behavior or sooner.
- [P] Parent does not bring up comments that bring up a problem behavior in the praise statement (e.g., thanks for asking nicely and not whining)
- [A/P] Parent affect/voice tone is pleasant
- [A/P] Is Sincere: Presentation of praise should convey genuine approval
  - Parent has child's attention and is within an arm's length
  - Parent facial expressions: smiling, excited/smiling eyes, brows raised
  - Parent body language: facing child, at child's eye level, and leaning towards the child
- [P] Contingency errors:
  - Non-contingent praise: Praise delivered for inappropriate child behavior that the parent wants to discourage or decrease
  - Praise that is too delayed: Praise that accidentally reinforces inappropriate or undesirable behavior
  - Poor timing of praise: Praise that is delivered when
    - The child is incapable of listening/hearing
    - The child's attention is otherwise engaged
    - Child behavior is changing from appropriate to inappropriate on a moment to moment basis – praise delivered when child behavior is unstable may inadvertently reinforce inappropriate behavior
    - Embarrassing praise: Praise delivered openly/publicly in a context in which the child finds praise aversive (e.g., praise for toileting in front of peers); this will require a consideration of context and child reaction.

\*Parent Management Skills included in coding system validated by 13 experts in Triple P

- [A/P] Affect errors:
  - Incongruent affect (e.g., sarcastic, dull, exaggerated, or teasing tone/affect) that occurs concurrent with praise statements
  - Nonverbal cues in parent facial expressions or body language that are incongruent with genuine approval

### Incidental Teaching

In response to a *child* initiation, the parent

- [P] Attends to the child
- [P] Prompts the child to elaborate on what they have shown interest in, questioned, etc.
- [P] If prompt does not work, parent gives a cue, or further prompts a response
- [P] If two prompts have been unproductive, parent gives an answer
- [P] Parent-child interaction should end positively

### Planned Ignoring

In response to a minor behavior problem intended to get attention or a reaction, the parent:

- [P] Deliberately pays no attention to the child by not looking, talking, or touching their child
- [P] If safe, the parent turns and walks away
- [A/P] Parent affect should be calm and facial expression/body language should be neutral
- [P] The parent continues planned ignoring as long as the minor behavior problem continues
- [P] As soon as the behavior problem stops, the parent attends to the child and delivers praise for whatever appropriate child behavior is occurring
- [P] The parent discontinues planned ignoring if the problem behavior escalates to more serious problems (e.g., hurting others or destructiveness)
- [P] Contingency errors: Using planned ignoring in response to desirable/appropriate behavior, more serious behavior problems, or behavior that constitutes a violation of an existing house rule.

### Clear, Calm Instructions

- [A/P] Parent is within arm's length
- [A/P] Parent is at child's eye level
- [P] Parent gains child's attention by saying their name
- [A/P] Parent has eye contact, or attempts eye contact (e.g., the parent is looking in the child's eyes but the child keeps turning away)
- [A/P] Parent speaks in a calm voice
- [P] Parent says exactly what the child should do (i.e., specific instruction-FOS operational definition)
- [P] Parent pauses for 5 seconds to give child time to comply with the instruction
- [P] Parent praises cooperation with instruction (praise is not required if instruction given within the T/O procedure)

- [P] If necessary, parent repeats instruction once if starting a new task (e.g., put your shoes on, come to the table, put your toys back in the box)
- [P] Parent uses a back-up consequence if child does not comply after 5 seconds or after second instruction (for new tasks)
- [P] Other criteria:
  - Parent should deliver instructions at a moment when the child is capable of complying (e.g., if a parent says, “come here” and the child is in the restroom the child may not be able to comply in 5 seconds)
  - Parent should deliver an instruction that is developmentally appropriate and that the child can comply with (e.g., if a parent says, “brush your teeth” and the child is unable to put paste on the toothbrush, the child will not be able to comply with the instruction)
  - Parent should give an instruction that is congruent with previous instructions, house rules, or other parent’s instructions; contradictory instructions can be determined by context or knowledge of family rules/history
  - Parent should not deliver unnecessary instructions or repeat instructions unnecessarily (e.g., the parent says “put the Lego pieces in the box” and the child is already putting the Lego pieces away)
  - Parents should not deliver consecutive, multiple instructions without delivering praise, attention, or naturally occurring reinforcers.

### Logical Consequences

Parent delivers a logical consequence in response to noncompliance with an instruction, house rule, or other oppositional behavior

- [P] Parent calmly [A/P] removes whatever is at the center of the problem (up to 10-minutes for toddlers/preschoolers/up to 30-minutes for elementary aged children), or if this is not possible, parent removes an ongoing privilege or a source of reinforcement in the environment
  - (e.g., You haven’t stopped splashing your brother, now you must come out of the water for 10 minutes, or You are not sitting quietly next to your friend, now you must sit next to me for 10-minutes, or You are haven’t stopped throwing the blocks, so the blocks go away for 5-minutes)
- [A/P] Parent affect is calm and neutral
- [P] Parent does not debate or argue the point with the child
- [P] Parent returns the activity/restores the reinforcing event/environment at the agreed time
- [P] Parent helps the child solve the problem that evoked the problem behavior if relevant, or sees that the child practices behaving appropriately in the context where the aversive behavior occurred, if relevant.
- [P] Parent uses another consequence if the problem behavior occurs again (remove the troublesome object for a longer period of time or use quiet time/time out)
- [P] Contingency errors
  - The logical consequence, or removal of the reinforcer (e.g., toy) is delayed, for example, the child throws the toy 3 times before the parent applies the logical

consequence, or the child throws the toy and 5 minutes later the parent applies the logical consequence

- The parent applies a logical consequence non-contingently, that is, in response to a non-aversive or neutral child behavior
  - The parent uses logical consequences without giving the child a chance to change behavior (e.g., the child is playing roughly with a toy, the parent does not deliver an instruction to stop the behavior, instead the parent just applies the logical consequence by taking the toy away)
- Other errors:
- [A/P] Parent affect/tone of voice or facial expression/body language is upset, angry, or frustrated during the procedure
  - [P] Logical consequences applied for a longer time period than is necessary for child's age/circumstances (may need case notes/parenting plan to help in deciding this)
  - [P] Parent "takes back" the logical consequence in response to child protest (e.g., the child says "I'm sorry, please don't take it" and the parent rescinds the logical consequence), or because the child tries to make amends by correcting the situation once the logical consequence is applied.

### Quiet Time

- [P] At an earlier date, parent prepares child for quiet time by walking them through the steps of the quiet time routine (this information comes from case files)
- [P] Parent calmly[A/P] tells child what they have done wrong
- [P] Parent calmly [A/P] instructs child to go to quiet time with minimum prompts (child has been prepared and knows the steps of quiet time)
- [P] Parent seats child at the edge of the activity where their entry/exit from quiet time can be monitored
- [P] Parent tells child to be quiet for the set time (i.e., 1 minute for 2-year-olds, 2-minutes for 3-to 5-year-olds, and up to 5-minutes for 5-to 10-year-olds)
- [P] Parent does not talk to or look at child while they are in quiet time and removes access to reinforcement (e.g., TV, peers, etc.)
- [P] When quiet time is over, parent sets up child in activity or repeats instruction given prior to quiet time
- [P] Parent finds a behavior to praise as soon as possible after quiet time
- [P] After quiet time is over, parent does not mention the incident
- [P] Parent takes child to time-out, if child does not sit quietly in quiet time
- [P] Contingency errors:
  - The application of Quiet Time (QT) is delayed, that is, the parent waits until the aversive behavior has escalated or occurred on multiple occasions before using QT
  - The parent applies QT in response to appropriate behavior
  - Access to reinforcement (e.g., an activity or parent/peer/sibling attention) is available in Quiet Time

- The pre-QT environment is devoid or has a low density of reinforcers (e.g., the child is not engaged in a reinforcing activity, interaction, or enjoying entertainment [e.g., TV] of some sort)
- ❑ Other errors:
  - [P] The parent has not practiced QT with the child beforehand and/or vague instructions are delivered during the course of the procedure, so the child is confused about the logistics of QT.
  - [P] Contradictory instructions are delivered during the course of QT (e.g., while you are in QT, kiss your sister and tell her that you are sorry, or Dad says “come here” once Mom has put child in QT)
  - [A/P] Parent affect/tone of voice or facial expression/body language is upset, angry, or frustrated during the procedure
  - [P] Parent “takes back” the QT in response to child protest (e.g., the child says “I’m sorry, please no QT” and the parent rescinds QT), “gives up” trying to use QT after the child resists QT, or withdraws QT because the child finds a way to comply/correct the behavior leading to QT during the procedure
  - [P] Excessive force (contact that may cause physical discomfort or injury) is used to prompt the child to go to QT, keep the child in QT, or return the child to QT.

#### Time-Out

- ❑ [P] At an earlier date, parent prepares child for time-out by walking them through the steps of the time-out routine (this info comes from the case files for each family)
- ❑ [P] Parent calmly [A/P] tells child what they have done wrong
- ❑ [P] Parent calmly [A/P] instructs child to go to time out with minimal prompts (child has been prepared and knows the steps of time-out)
- ❑ [P] Parent calmly directs child to sit in the designated safe place away from others where their entry/exit can be monitored
- ❑ [P] Parent calmly instructs child to be quiet for the set time (i.e., 1-minute for 2-year-olds, 2-minutes for 3-to 5-year olds, up to 5-minutes for 5 to 10-year-olds)
- ❑ [P] Parent does not talk to or look at child while they are in time-out (time-out area is devoid of reinforcement)
- ❑ [P] After time-out is over, parent sets up child in activity or repeats instructions given before time-out
- ❑ [P] Parent finds a behavior to praise as soon as possible after time-out
- ❑ [P] When time-out is over, do not mention the incident
- ❑ [P] If child comes out of time-out, parent has a prepared plan to follow (this info comes from the case files for each family)
- ❑ [P] Contingency errors:
  - The application of T/O is delayed, that is, the parent waits until the aversive behavior has escalated or occurred on multiple occasions before using T/O
  - The parent applies T/O in response to appropriate behavior
  - Access to reinforcement (e.g., an activity or parent/peer/sibling attention) is available in T/O

- The pre-T/O environment is devoid or has a low density of reinforcers (e.g., the child is not engaged in a reinforcing activity, interaction, or enjoying entertainment (e.g., TV) of some sort)
- ❑ Other errors:
  - [P] The parent has not practiced T/O with the child beforehand and/or vague instructions are delivered during the course of the procedure, so the child is confused about the logistics of T/O.
  - [P] Contradictory instructions are delivered during the course of T/O (e.g., while you are in T/O, kiss your sister and tell her that you are sorry, or Dad says “come here” once Mom has put child in T/O)
  - [A/P] Parent affect/voice or facial expression/body language is upset, angry, or frustrated during the procedure
  - [P] Parent “takes back” the T/O in response to child protest (e.g., the child says “I’m sorry, please no T/O” and the parent rescinds T/O), “gives up” trying to use T/O after the child resists T/O, or withdraws T/O because the child finds a way to comply/correct the behavior leading to T/O during the procedure
  - [P] Excessive force (contact that may cause physical discomfort or injury) is used to prompt the child to go to T/O, keep the child in T/O, or return the child to T/O.

### Compliance Routine

Parent uses this routine when asking a child to begin a new activity/task

- ❑ [P] Parent gives a warning of a change of activity (e.g., 10-minutes until, 5-minutes until)
- ❑ [P] In a calm voice[A/P], parent delivers an instruction that specifies exactly what the child should do (i.e., delivers a specific instruction – FOS operational definition)
- ❑ [P] Parent pauses for 5 seconds to give child time to comply (ignore protests or refusals during this pause)
- ❑ [P] If child does not comply after 5 seconds, parent repeats the instruction
- ❑ [P] Parent pauses briefly to give child time to comply (ignore protests or refusals during this pause)
- ❑ [P] If child complies, parent praises the child’s behavior
- ❑ [P] If child does not comply after second instruction, use a back-up consequence (e.g., logical consequence, quiet time, or time-out)
- ❑ [P] When the consequence is over, start again with your first instruction
- ❑ Errors:
  - [P] Timing error: Parent delivers an instruction to child to start a new task in the middle of an exciting point of play without warning
  - [A/P] Affect error: Parent affect/voice or facial expression/body language is upset, angry, or frustrated during the procedure
  - [P] Contingency errors:
    - Parent delays consequence after noncompliance to second instruction
    - Parent withdraws, forgets, or changes the parameters of the original instruction after the back-up consequence is over

Parent withdraws the back-up consequence when child complies on the third instruction