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Caregivers perceptions of the effectiveness of the Helping Our Toddlers, Developing Our Children's Skills parent training program: A pilot study

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Caregivers' Perceptions of the Effectiveness of the *Helping Our Toddlers, Developing Our Children's Skills* Parent Training Program: A Pilot Study

by

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ABSTRACT

This study was designed to evaluate a parent training curriculum: *Helping Our Toddlers Developing Our Children's Skills (HOT DOCS©)* using archival data collected between August 2006 and April 2007. The evaluation studied the impact of specific components of the parent training program on both participants' knowledge and attitudes and their perceptions of targeted children's behavior. One-hundred-forty-six caregivers of children between the ages of 14 months and ten years of age participated in the parent training program and were included in the analyses. Measures included a pre/post knowledge test, rating scales of child problem behavior, weekly progress monitoring forms for caregiver behavior at home, and a program evaluation survey. Results indicated significant increases in caregiver knowledge following participation in the program. Prior to participation, caregivers' perceptions of the severity of child problem behaviors and deficits in adaptive behaviors were significantly different from a normative sample. Following participation in the program, results showed significant decreases in caregiver perceptions of the severity of child problem behaviors, but no significant differences in child adaptive behaviors. Caregiver feedback indicated high levels of satisfaction with the program.

CHAPTER 1

Introduction

Statement of the Problem

After nearly three decades of cross-disciplinary research, professionals in the fields of psychology, education, and medicine are no longer surprised that their client lists, student rosters, and appointment schedules are filled with young children displaying challenging behaviors. The most commonly cited challenging behaviors in young children (between the ages of 2 and 7 years old) include sleeping difficulties, mealtime and feeding issues, toilet training, temper tantrums, aggression, sibling rivalry and noncompliance. Recent research has shown that approximately 15%-25% of all typically developing preschool children have chronic levels of behavior problems that fall within the mild to moderate range (Campbell, 1995; Keenan & Wakschlag, 2000; Knapp, Ammen, Arstein-Kerslake, Poulson, & Mastergeorge, 2007; Lavigne et al., 1996). Prevalence rates of chronic behavior problems for minority children and/or children in low-income families have been identified as ranging between 25% and 35% of typically developing children (Gross, Sambrook, & Fogg, 1999; Webster-Stratton, 1998).

The long-term outcomes associated with early onset challenging behavior in young children have been well-documented (Coie & Dodge, 1998; Dishion, French, & Patterson, 1995; Kazdin, 1995; Moffitt, 1993; Reid, 1993; Tremblay 2000). In general, the earlier the problem behavior develops the more stable and intense the associated negative outcomes are over time. Dishion, French, and Patterson (1995) found that early

appearing behavior problems in a child's preschool career are the single best predictor of delinquency in adolescence, gang membership, and adult incarceration. Other researchers have identified similarly poor long-term outcomes related to academic and school performance. Kazdin (1993) and Tremblay (2000) concluded from their research that preschoolers with challenging behaviors are at a greater risk of experiencing school failure than typically developing children. Several studies have investigated the poor social and interpersonal outcomes associated with developing challenging behaviors at an early age. Coie and Dodge (1998) found that preschoolers with challenging behavior were more likely to experience early and persistent peer rejection. Strain and his colleagues (1983) reported that preschoolers with challenging behaviors also were more likely to experience more punitive interactions with teachers than their typically developing peers. Reid (1993) found that early appearing aggressive behavior is the single best predictor of juvenile gang membership and violence.

In response to research demonstrating the rapid and enduring increase in the prevalence rates of young children with challenging behavior and the associated negative long-term outcomes, professionals across disciplines have developed a variety of treatments to help prevent and treat these behaviors. For example, psychotropic medications (Barkley, 1997), individual clinical therapy or counseling with the child (Barkley et al., 2000; Forehand & Long, 1988), individual consultation with the family (Anastopoulos, Shelton, DuPaul, & Guevremont, 1993; Feinfield & Baker, 2004), play therapy (Blackwell, 2005; McNeil, Capage, Bahl, & Blanc, 1999; Nixon, Sweeny, Erickson, Touyz, 2003), and behavioral parent training (Kazdin, 1997; Sanders, Mazzucchelli, & Studman, 2004; Webster-Stratton, 1998) have all been evaluated for

their efficacy in reducing challenging behavior in young children. A more recent advance in this body of research is the downward extension of the principles of positive behavior support (PBS) as an intervention technique for young children and their families (Buschbacher, Fox, & Clarke, 2004; Dunlap & Fox, 1996; Frea, 2004; Hieneman, Childs, & Sergay, 2006). Of these interventions and treatments, behavioral parent training delivered in a group format has been shown to be an effective treatment for challenging behavior in young children, while utilizing the least amount of resources and empowering parents to prevent the development of future problem behaviors (Lundahl, Risser, & Lovejoy, 2006; Maughan, Christiansen, Jenson, Olympia, & Clark, 2005; Nelson, 1995; Sandall & Ostrosky, 1999; Smith & Fox, 2003).

Theoretical Framework

Historically, one of the major theories guiding the inquiry into chronic behavior problems in young children is Skinner's (1953) theory of behaviorism. At its foundation, behaviorism postulates that all behavior is observable and functional. Behaviorism relies on the manipulation of antecedents and consequences and the effects of reinforcement and punishment as a means of changing and shaping behavior. In addition to approaching the study of challenging behavior in young children from a behavioral theoretical framework, it is necessary to view the problem through an ecological model of child development (Bronfenbrenner, 1979). An ecological model takes into account biological, sociological, and psychological domains of child development and functioning (Sontag, 1996). From an ecological perspective, manipulation of a child's environment, including the behavior of caretakers, will directly impact the child's behavior (Bronfenbrenner, 1979).

A newer lens through which researchers and practitioners have begun to approach challenging child behaviors is through the principles of positive behavior support (PBS). Positive behavior support has emerged from the study of applied behavior analysis (ABA) and is an approach to studying child behavior problems by viewing problems as a lack of behavioral adaptation (Dunlap, 2006). ABA was established as a science in the 1960's in which learning principles were systematically applied to produce socially important changes in behavior (Cooper, Heron, & Heward, 1987). PBS emerged in the late 1980's as a strategy of intervention and support, employing concepts and techniques from ABA and other disciplines, with the intent of enhancing an individual's quality of life and reducing problem behaviors (Carr et al., 2002).

Overview of the HOT DOCS© Parent Training Program

HOT DOCS©, or *Helping Our Toddlers Developing Our Children's Skills* (Armstrong, Lilly & Curtiss, 2006) is a behavioral parent training curriculum based on the principles of positive behavior support. *HOT DOCS©* meets criteria for a behavioral intervention, such as 1) centering around an operant model of behavior, 2) providing parents with detailed information on effective parenting strategies, 3) focusing on control of antecedents instead of punitive consequences, and 4) programming specifically designed to enhance generalization from the training setting to the home setting. The original *Helping Our Toddlers* (*H.O.T.*) curriculum (Armstrong & Hornbeck, 2005) was developed through a U.S. Department of Education grant, with funds matched by the Children's Board of Hillsborough County, Florida (Fox, Dunlap, & Powell 2002). The grant was provided to fund research to investigate the effectiveness of positive behavior support (PBS) applied to toddlers with challenging behavior and was referred to as the

Early Intervention Positive Behavior Support (EIPBS) project. The *H.O.T.* curriculum was developed by the EIPBS project director and a parent of a young child diagnosed with Autism. The *H.O.T.* curriculum was based on the principles of PBS (i.e., understanding the function of behavior, antecedents and consequences, and teaching replacement behaviors). The parent training program consisted of six weeks of group training conducted in community settings, such as churches and the YMCA.

The original *H.O.T.* curriculum was delivered to four cohorts of parents and caregivers of young children with challenging behaviors, averaging 8-12 individuals per group between 2005 and 2006. Data collected during initial parent training groups included demographic information, parent satisfaction with the program, knowledge of basic behavioral principles, and use of parenting skills taught in class. These data were used to generate outcome reports required by the funding agency. Focus groups and follow-up surveys conducted upon completion of the fourth cohort of participants reported that 100% of parents who participated in the program noticed improvements in their own parenting skills and their child's behavior (Armstrong, Hornbeck, Beam, Mack, & Popkave, 2006). Following the first four cohorts of *H.O.T.* parent training, several substantial revisions to materials, procedures, and data collection were made to the curriculum. Subsequently, the original *H.O.T.* curriculum has evolved into a manualized training program called *Helping Our Toddlers, Developing Our Children's Skills* (*HOT DOCS*©; Armstrong, Lilly, & Curtiss, 2006). Although initial qualitative reports of parent satisfaction and improvements in child behavior suggest success of the program, a more rigorous and standardized evaluation of the *HOT DOCS*© parent training curriculum is needed.

Purpose of the Study

The current study was designed to serve as a preliminary investigation of caregivers' perceptions of the effectiveness of the *Helping Our Toddlers Developing Our Children's Skills (HOT DOCS©)* parent training program. The study evaluated the impact of specific components of the parent training program on caregivers' knowledge and attitudes and their perceptions of targeted children's behavior. In addition, data from this study will be used to investigate the extent to which the intervention was efficacious.

Research Questions

1. What is the impact of participation in the 6-week *HOT DOCS©* parent training program on caregiver knowledge as measured by pre- and posttest scores on the *HOT DOCS© Knowledge Test*?
2. Do caregivers perceive their child as having more problem behavior than a normative sample prior to participation in the 6-week parent training program?
3. Do caregivers perceive their child as having less adaptive behavior than a normative sample prior to participation in the 6-week parent training program?
4. To what extent do caregivers perceive a decrease in child problem behavior following caregiver participation in the 6-week parent-training program?
5. To what extent do caregivers perceive an increase in child adaptive behavior following caregiver participation in the 6-week parent-training program?
6. a. What is the frequency and ease of use of the weekly parenting tips as reported by caregivers?

   b. Is there a relation between frequency of use and ease of use as measured by the *HOT DOCS© Tip Tracker* sheets?

7. What are caregivers' overall perceptions of the *HOT DOCS*© parent training program as measured by the *HOT DOCS*© *Program Evaluation Survey*?

Significance of the Study

Results of this pilot study will be used to help the researcher modify and improve the instruments and procedures used to evaluate outcomes of the *HOT DOCS*© parent training program. The results will also be shared with the authors of the parent training program in order to help improve and refine the contents and delivery of the program. This study will also investigate whether or not the *HOT DOCS*© program is an effective intervention for increasing caregiver knowledge and improving child behavior.

Definition of Terms

Young children will be defined for the purposes of this study as children between the ages of 2 and 7 years of age.

Behavioral parent training is defined as an intervention technique in which professionals provide training in specific parenting skills and techniques, which are derived from a behavioral perspective, to parents of young children. Behavioral parent training programs generally have four common elements: 1) centering around an operant model of behavior, 2) providing parents with detailed information on appropriate and effective parenting strategies, 3) focusing on control of antecedents instead of punitive consequences, and 4) programming specifically intended to enhance generalization from the training setting to the home and community settings (Fienfield & Baker, 2004).

Challenging behavior is defined as a pattern of repeated behaviors, or perception of behavior, that interferes with or is at risk of interfering with optimal learning or

engagement in pro-social interactions with peers and adults (Dunst, Trivett, & Cutspec, 2002). Challenging behavior is therefore defined on the basis of its effects.

CHAPTER 2

Review of Related Literature

Overview

This chapter provides a review of the literature relevant to this study. Challenging behavior in young children is discussed, including prevalence rates, negative outcomes associated with early emerging behavior problems, and the role of parenting skills in the development of challenging behavior. Research supporting the importance of prevention and early intervention is reviewed, as well as the effectiveness of parent training as an intervention. Finally, the application of a positive behavior interventions (PBS) framework in interventions for young children with challenging behaviors is examined. This chapter concludes with a discussion of the importance of providing effective behavioral parent training through a positive behavior support framework to enable parents and caregivers to prevent and correct challenging behavior in young children as early as possible.

Prevalence of Young Children with Challenging Behavior

Numerous studies conducted over the past 30 years have shown a dramatic increase in the number of young children who are referred to professionals due to challenging behaviors (Campbell, 1995; Knapp, et al., 2007; Lavigne et al., 1996). Studies report that up to 75% of all psychological referrals for children are related to disruptive and noncompliant behavior (Feinfield & Baker, 2004). Researchers also have found that the proportion of children meeting the criteria for a clinical diagnosis of

oppositional defiant disorder (ODD) ranges between 7% and 25%, depending on the age of the population surveyed (Webster-Stratton, 2000). Overall, the prevalence rate for challenging behaviors in young children varies between 10% and 16% for the general population (Campbell, 1995; Schuhmann, Foote, Eyberg, Boggs, & Algina; 1998; Webster-Stratton, 2000) and between 25% and 30% for children living in poverty (Gross et al., 1999; Keenan & Wakschlag, 2000; Qi & Kaiser, 2003).

Gross and colleagues (1999) conducted a cross-sectional study of 2- and 3-year-old children from low-income families to describe the prevalence rates and correlates of challenging behaviors in preschool children. The study included parents of 133 young children from 10 daycare centers in an urban city. Most of the parents included in this study were African American (64%) or Latino (25%) and were categorized as being low in socio-economic status based on income level (e.g., 50% of participants earned less than the state's median income). Parents completed measures of type and intensity of child behavior problems, parenting self-efficacy, parental discipline strategies, and parental stress. Findings from the study showed that 32% of the young children had clinically significant levels of problem behaviors in the home setting. These results should be interpreted with caution given that the sample was composed of two minority ethnic groups of low SES. Results from these findings should only be generalized to similar populations.

In 2003, Qi and Kaiser conducted a review of research pertaining specifically to challenging behaviors in young children from low-income families. These researchers reviewed and summarized research on this topic published between 1991 and 2002 with the goal of synthesizing prevalence rates of behavior problems and identifying risk

factors for behavior problems. Results of this study showed that children whose families are poor are significantly more likely than middle- or upper-class families to develop behavior problems. Findings from this review were similar to previous reports (Gross et al., 1999; Del'Homme, Sinclair, & Kasari, 1994; Feil, Walker, Severson, & Ball, 2000) in estimating that prevalence rate of challenging behavior for children from low-SES families is approximately 30%.

Keenan and Wakschlag (2000) conducted a study to examine the severity of challenging behaviors exhibited by preschool-aged children. The authors completed comprehensive psychological evaluations with 79 clinic-referred preschoolers from a primarily low-SES, urban setting. The comprehensive evaluations included semi-structured diagnostic parent interview (Schedule for Affective Disorders for School-Age Children-epidemiological 5th version; Orvaschel & Puig-Antich, 1995), child behavior rating scales (Child Behavior Checklist; Achenbach, 1991), direct observations of parent-child interactions, developmental assessment (Differential Abilities Scales; Elliot, 1983), and overall clinical impairment ratings (Child Global Assessment Scale; Setterber, Bird, Guld, Shaffer, & Fisher, 1992). Results indicated that nearly 80% of the preschool children met Diagnostic and Statistical Manual-4th Edition (DSM-IV, American Psychiatric Association, 1994) criteria for a disruptive behavior or Attention-Deficit Disorder. Specifically, 60% of the children met criteria for Oppositional Defiant Disorder (ODD) and 42% met criteria for Conduct Disorder (CD). These findings support the growing body of research identifying increasing prevalence and severity rates of disruptive behaviors in young children.

Outcomes Associated with Early Emerging Behavior Problems

The problem of increasing prevalence rates of challenging behavior in young children becomes more significant when the long-term outcomes of early-emerging behavior problems are taken into account. Children who are identified as hard to manage at ages 3 and 4 years old are twice as likely as their typically-developing peers to continue to display problem behavior into adolescence (Campbell & Ewing, 1990; Egeland, Kalkoske, Gottesman, & Erikson, 1990; Fischer, Rolf, Hasazi & Cummings, 1984). Egeland and colleagues (1990) conducted a longitudinal study in which they assessed the stability of behavior problems in children beginning in preschool and following-up through 3rd grade. Parents of 118 children between the ages of 4½ and 5 years completed child behavior rating scales and measures of parental stress and mental health. Assessments also included direct observations of child behavior and semi-structured parent interviews. Ninety-six children met criteria for behaviors including acting out, withdrawal, or attention problems. Twenty-two children did not meet criteria and served as the control group. Results indicated a high degree of stability in the presence of child problem behaviors. A limitation of this study was that the children included in the study were all at least 4 years old, which excluded a critical portion of the young children at-risk for developing behavior problems who are between the ages of 2 and 3 years.

A similar study conducted by Campbell and Ewing (1990) also tracked the stability of behavior problems first identified in the preschool years; however, in this study, follow-up assessments were conducted at age 6 years and again at 9 years and focused specifically on the children who were excluded from the age range in the

previous study. Parents of 51, 3-year-old children completed behavior rating scales, parenting stress indices, semi-structured interviews and participated in direct observations of behavior. Twenty-nine of the children were classified as "hard-to-manage" and 22 children served as developmentally appropriate control group peers. Results of this study showed that children who exhibited clinically significant problem behavior at 3 years of age were more likely to continue to demonstrate problem behaviors at ages 6 and 9 years. Results also showed that the majority (67%) of children who had clinically significant behavior problems at 6 years of age met Diagnostic and Statistical Manual-3rd Edition (DSM-III; American Psychiatric Association, 1987) criteria for externalizing disorders at age 9.

Young children who demonstrate challenging behavior in the preschool years are more likely to experience school failure (Kazdin, 1993; Tremblay, 2000), peer rejection (Coie & Dodge, 1998), punitive teacher interactions (Strain, Lambert, Kerr, Stragg, & Lenker, 1983), and unpleasant family interactions (Patterson & Fleischman, 1979). Preschoolers with early-emerging challenging behavior are also more likely to have adult lives characterized by violence, abuse, loneliness, psychiatric illness, injury, unemployment, divorce, and early death (Coie & Dodge, 1998; Kazdin, 1995; Lipsey & Derzon, 1998; Olweus, 1991; Walker, Colvin, & Ramsey, 1995).

Role of Parenting in Child Behavior Problems

Much of the recent research conducted in the fields of psychology and education has focused on the etiology of challenging behavior in young children. A major theme to emerge in this body of research is that parenting style and parent-child relationships are significant determinants of child mental health problems, including challenging behavior

(Loeber & Dishion, 1983; Patterson, DeBaryshe, & Ramsey, 1989; Rutter, 1991; Stormshak, Bierman, McMahon, Lengua, 2000). Studies have shown that a common factor in the etiology of most childhood behavior problems and social-emotional disorders is difficulty in the parent-child relationship (Kendziora & O'Leary, 1993; Mrazek, Mrazek, & Klinnert, 1995; Patterson et al., 1989; Ruttner, 1991; Shaw, Emery, & Turner, 1993). Negative parent-child interaction styles are more frequently observed in families with young children with behavior problems and are predictive of more persistence in disruptive behaviors (Buss, 1981; Feinfield, 1995; Pettit, Bates, & Dodge, 1993; Webster-Stratton, 1985). A classic model in the field of child psychology is Patterson's (1982) coercion model, which explains how negative parent-child interactions lacking warmth and negotiation serve to exacerbate a child's problem behaviors, especially aggression. Parenting difficulties produce combinations of oppositional and avoidant behaviors in children, which in turn increase parental negativity (Bradley et al., 2003; Cummings & Davies, 1994). If this coercive cycle is prolonged the result is a strained parent-child relationship and persistent challenging child behavior (Patterson, 1982).

Denham, Workman, Cole, Weissbrod, Kendziora, and Zahn-Waxler (2000) conducted a study to examine the contribution of parental emotions and behaviors to the emergence of disruptive and noncompliant behaviors in preschool children. The study included 79 mothers and fathers and their children, who met criteria for being at-risk for development of disruptive behavior disorders. Children involved in this study ranged in age from 2 years to 5 years, with a mean age of 4½ years. Participants in this study were predominantly Caucasian (96%) and from a middle- or upper-class socio-economic status

(96%). Families were evaluated at four times during the 4-year longitudinal study, including a pretest, two progress monitoring evaluations, and a posttest. Researchers assessed children's externalizing behavior through parent and teacher reports using Achenbach's (1991) Child Behavior Checklist (CBCL) and Teacher Report Form (TRF), as well as Youth Self-Reports (YSF). Parenting skills were assessed at the first and fourth assessment through direct observation of parents' interactions with their children in naturalistic play activities. Parenting patterns were coded for patterns of behavior, including supportive presence, limit setting, allowance of autonomy, negative affect, quality of instruction, and confidence. Parenting patterns also were coded for emotional expression, including anger and happiness. Results of the study indicated that children with externalizing problems evident during the pre-test continued to have behavior problems at the 2-year and 4-year follow-up evaluations. Results also demonstrated that proactive parenting techniques (e.g., being supportive, giving clear directions, setting limits) predicted decreased behavior problems overtime, especially for children with clinically significant levels of problem behaviors at pre-test. Conversely, children of parents who frequently expressed anger were more likely to have continued or worsening externalizing behaviors at the follow-up evaluations. The results of this study should be interpreted with caution, given the limited diversity in ethnicity and SES of the participants included and the small sample size.

Other studies have shown that parents of young children with externalizing behaviors use more frequent verbal and corporal punishment than parents of young children without challenging behaviors (Nicholson, Fox, & Johnson, 2005). Nicholson, Fox, and Johnson (2005) conducted a study investigating the difficulties of parenting

children with challenging behavior as well as the protective factors that may exist in these families. Preschool teachers identified 30 children (ages 2 to 5 years) who displayed challenging behaviors and a matched group of 30 children who did not display challenging behaviors to serve as the comparison group. Teacher classification of child behavior problems was confirmed using the Sutter-Eyberg Student Behavior Inventory (Eyberg & Pincus, 1999). The final sample consisted of 60 children and their mothers who were mostly Caucasian (93%), married (78%), and had a minimum of a high school diploma (72%). Each mother was asked to complete a self-report measure of parenting behavior (Parent Behavior Checklist; Fox, 1994), and two ratings scales of child behavior (Child Behavior Scale; Fox & Nicholson, 2003; Eyberg Child Behavior Inventory; Eyberg & Pincus, 1999) during a home interview. With regard to parent behavior, significant results were found ($p<.05$) in the differences between the parenting practices of mother's of children with challenging behavior and mothers of children with typical behaviors. Specifically, mothers of children with challenging behavior reported more frequent use of verbal and corporal punishment than mothers in the control group. No differences were found between the mother's use of nurturing behaviors or expectations. With regard to child behavior, mothers of children with challenging behavior rated their children's behavior at home to be significantly more problematic than mothers in the control group on both the ECBI and CBS. Results of this study indicated that mothers of children with teacher-identified challenging behavior interact with their children differently than mothers of children without challenging behaviors. This study provided evidence of differences in parenting practices in families of children with typical and challenging behavior, however, generalization of these results are limited due to a small

sample size and homogenous participant demographics. The conclusions of this study are also limited by the use of only self-report measures and no direct observations of parent or child behavior.

A similar study by Stormshak and colleagues (2000) also investigated differences in parent-child interactions in families with children with challenging behavior, but avoided the problem of limited generalizability in the previous study by selecting a more diverse sample. This study was conducted with a large population-based sample of at-risk and diverse 1st grade students from four locations across the United States (North Carolina, Tennessee, Washington, and Pennsylvania). The sample included 631 kindergartners (mean age 6.45 years) with challenging behavior from various ethnic and racial groups (49% minority-predominantly African American, 51% European American) and socio-economic status levels as well as a matched comparison sample of 387 children without challenging behaviors. Measures used in this study included parent (Child Behavior Checklist; Achenbach, 1991) and teacher reports (Teacher Observation of Classroom Adaptation-Revised; Kellem, 1989) of child behavior and several self-report measures of parenting practices (Conflict Tactics Scale; Straus, 1989; Parent Questionnaire; Strayhorn & Weidman, 1988; Parenting Practices Inventory; CPPRG, 1996). Results indicated that parents who reported that their children had challenging behaviors also reported significantly more frequent use of punitive discipline strategies and aggressive parenting styles (e.g., yelling, spanking, threatening) than parents who reported their children's behavior to be within normal limits. Punitive discipline and inconsistent parenting were significantly associated with child oppositional, aggressive, and hyperactive behaviors. With the exception of a stronger relationship between punitive

discipline strategies and child problem behaviors for African American than European American parents, there were no significant differences between ethnic groups across parenting practices or child behavior found in this study. This lack of significant group differences suggests a high degree of consistency in the influence of parenting practices on child behavior across ethnic groups in America. Similar to previous studies, the absence of direct assessment of child behavior, parenting practices, and parent-child interactions presents a limitation to the results of the study.

While negative parenting practices can produce or exacerbate problem behavior in children, child problem behaviors can also lead to increased levels of parent stress, and marital conflict (Forehand & Long, 1988; Patterson, Reid, & Dishion, 1992; Webster-Stratton & Hammond, 1997). Following the cyclic model, elevated levels of chronic parental stress are associated with the maintenance of externalizing behavior problems in children (Campbell, 1997; Heller, Baker, Henker, & Hinshaw, 1996). Recent research also has shown that nurturing, authoritative, responsive parenting that utilizes positive behavioral interventions can improve child behavior, enhance child development, reduce the need for professional services in the future and reduce parent stress (Hebbler, Spiker, Mallik, Scrborough, Simeonsson, & Collier, 2001; Nicholson et al., 2005; Ramey & Ramey, 1998; Shonokoff & Phillips 2000).

Pettit, Bates, and Dodge (1993) conducted a longitudinal study investigating the family interaction variables that were predictive of children's externalizing problems during the transition from kindergarten to 1st grade. Specifically, the researchers investigated the hypothesis that positive-proactive and negative-coercive parenting styles would make independent, non-overlapping contributions to the prediction of conduct

problems in children. The sample included 165 families who were recruited from a larger, ongoing study (see Dodge, Bates, & Petit, 1990). The sample consisted of a range of social classes (high, middle, and low income families) and equal numbers of boys (n = 82) and girls (n = 83). The sample was predominantly White (84%) and represented two-parent families (70%). The children were stratified into groups of high, medium, and low aggression based upon mother's ratings of child aggression on the Child Behavior Checklist (Achenbach & Edelbrock, 1983). All children were observed in their homes during the summer prior to beginning kindergarten using a focused-narrative observational system to code various family interactions. Observations were conducted on two separate occasions for each family, lasting approximately two hours each, and were typically conducted during or near dinner time. Families were instructed to proceed with their normal routines and behaviors and attempt to ignore the observers as much as possible. In addition to the direct observations, parents completed child behavior rating scales. All three data collection methods (home observations, parent rating scale, and teacher rating scale) were completed again a year later, in the summer prior to children beginning 1st grade. Results indicated a strong correlation ($p<.05$) between negative-coercive parenting by mothers and child externalizing behavior problems in and 1st grade (behaviors rated by both parents and teachers). Correlations between negative-coercive parenting by fathers and child externalizing behavior problems were not significant at the kindergarten or first grade levels. This study also found that early, positive parent-child and family interactions predicted lower levels of externalizing behavior problems in kindergarten and first grade. These results provide support for the significant influence of parenting styles and parent-child interaction patterns on child behavior problems.

Outcomes Associated with Early Intervention

Despite the projections of negative short- and long-term outcomes for children who develop challenging behaviors at an early age, research has shown that the use of evidence-based intervention techniques can prevent and alleviate many of the associated negative outcomes (Marchant, Young, & West, 2004; Walker, Kavanaugh, Stiller, Golly, Severson, & Feil, 1998; Webster-Stratton, 1998). Marchant and colleagues (2004) recently demonstrated that prevention strategies implemented as early as the preschool years helped children avoid more severe problems later in life. In this study, four 4-year-old children who were considered to be at-risk for developing antisocial behavior and their parents participated in an intervention training program. During the training phase, the parent coach (first author) developed a collaborative relationship with parents, trained parents to use specific parenting skills, and provided parents with immediate feedback on their use of the skills. Specific skills included a direct teaching sequence aimed at increasing child compliance with multi-step directions and a corrective teaching sequence used when the child was non-compliant with adult direction. The direct teaching sequence included describing the skill (compliance) and the steps the child should follow, giving reasons that show the benefit of compliance, showing or modeling the steps of compliance for the child, and giving the child feedback in the form of praise or correction. The corrective teaching sequence included being positive (praise), describing the incorrect behavior, prompting the correct behavior (role play if necessary), and praising the child for listening and trying again. The study used a multiple baseline design across the four parent-child dyads to investigate parent and child behaviors in baseline, training, coaching, and follow-up phases. Results of the study showed that

children as young as 4 years old were able to show improvements in their behavior following a brief parent-child intervention. Limitations of this study included the small sample size and a homogenous sample in terms of ethnicity (all four families were Caucasian). Despite its limited generalizability, the results of this study suggest that early intervention for challenging behaviors in young children can be effective with children as young as 4 years of age.

When parents use responsive parenting practices and positive behavioral interventions in the early years, behavior problems are less entrenched, easier to treat, and the potential impact upon future developmental trajectories is greater (Dunlap & Fox, 1996; Lutzker & Campbell, 1994; Webster-Stratton, 1998). In other studies, early intervention has been associated with a decreased risk of withdrawal, aggression, non-compliance, teen pregnancy, juvenile delinquency, and special education placement (Strain & Timm, 2001). The application of evidence-based treatment approaches has also been associated with increased self-control, self-monitoring, self-correction, and social-emotional health (Webster-Stratton, 1990); more positive peer relationships and social skills (Denham & Burton, 1996); and improved academic success (Walker et al., 1998).

Parent Training as an Intervention

Despite the available evidence supporting the effectiveness of early intervention, there is a lack of services, resources, and empirically-supported interventions available to parents of young children displaying challenging behavior (Kazdin & Kendall, 1998; Walker et al., 1998). Recent estimates have shown that fewer than 10% of young children who show early signs of problem behavior receive services for their difficulties (Kazdin & Kendall, 1998). For those children who do receive services, the outcomes may still be

bleak, considering research findings that the developmental course of challenging behavior is predictably negative for children who are not treated or who receive "poor" treatment (Lipsey & Derzon, 1998; Patterson & Fleishman, 1979; Wahler & Dumas, 1986). Kumpfer and Alvarado (2003) also suggested that a lack of professional training in evidence-based intervention approaches may be contributing to small effect sizes in prevention and intervention research. The lack of available services is even more dismaying in the light of research findings showing that if challenging behaviors are not altered by the time a child reaches the age of nine years, the behavior problems are considered chronic and will require continuing and costly intervention (Dodge, 1993).

In order to maximize available resources and maintain a cost-effective method of service delivery, intervention techniques reaching the most children using the fewest resources have recently drawn attention. The most promising and effective of these cost-reducing interventions is parent training (Kazdin, 1995). Parent training involves professionals teaching parents and other caregivers the basics in behavioral principles and behavior management techniques, which the parents can then apply with their children. Parent training programs have been shown to be effective when delivered to individual parents or to groups of parents (Feinfield & Baker, 2004). Many researchers have provided evidence supporting the use of behavioral parent training programs to reduce the development and persistence of problem behavior and improve the quality of parent-child interactions (Gross et al., 2003; Maughan et al., 2005; McMahon & Forehand, 2003; Nixon et al., 2003). The majority of empirically-supported parent training programs have four common components: a) based on an operant model; b) provide detailed information on the effective and appropriate use of time-out procedures; c) focus

on antecedent control instead of punitive consequences; and d) program for generalization from the training setting to natural settings, including home and community contexts (Feinfield & Baker, 2004). Research has also shown that programs that focus on changing parenting behavior have a stronger effect on child behavior outcomes than do programs that focus on changing parents' attitudes (Sanders, 1996). In an analysis of parent training research conducted by Webster-Stratton and Taylor (2001), available evidence suggested that parent training produced the greatest effects with children between the ages of 3 and 10 years; created clinic-based changes that generalized to the home setting (but not often to the school setting); created clinically significant and meaningful improvements in two thirds of targeted children; and resulted in changes in children's behavior lasting up to four years.

In 2005, Maughan and colleagues conducted a meta-analysis to collect and quantitatively analyze the existing body of literature and research available regarding behavioral parent training as a treatment for externalizing behavior problems in children. The meta-analysis provided a description of studies, summarized the effects of the treatment studied, described variables that affected the treatment effects, and calculated an effect size to indicate the significance of each treatment's effects. Studies which were included in the meta-analysis were: a) conducted between 1966 and 2001; b) targeted least one externalizing behavior; c) targeted children who did not have autism or developmental delays; d) included treatment procedures such as training parents or caregivers in the use of reinforcement and/or time-out and one additional parenting procedure; e) targeted children between the ages of 3 and 16 years old; f) used at least one outcome measure on child's behavior; g) used either between-subjects group design,

within-subjects group design, or single-subject design; h) incorporated graphs displaying raw data representing baseline data with at least 5 data points if single subject design was used. To find research studies, the authors searched using internet tools and journal databases looking for all studies on behavioral parent training conducted within the specified time period. The search resulted in 294 studies, of which, 79 (26%) met the remaining inclusion criteria.

Each study was coded for specific information related to participant demographics, research design and methods, training program components, and outcome assessment. Effect sizes were calculated using statistics such as *t, F*, or *p* values when means and standard deviations were not available. For between-subjects designs, effect sizes were calculated based upon differences between pretest and posttest scores between the control and treatment group participants. For within-subjects designs, effect sizes were calculated based upon difference between pretest and posttest scores for a single sample, divided by the pretest standard deviation (producing a standardized mean change). For single-subject designs, effect sizes were calculated using the ITSACORR computer program. After an effect size was computed for each individual study, a composite effect size with a 95% confidence interval was calculated for each of the three research design types (between-subjects, within-subjects, and single-subjects designs). Potential bias for studies not included in the meta-analysis, which may not have been available due to null results, no effect or lack of publishing, was corrected for by calculating a Fail Safe *N*, which represented the number of studies that would have had to be included in the meta-analysis if all the possible studies were included.

For the 79 studies included, 108 separate effect sizes were calculated. Most of the studies used a group training format (n=32), some used individual consultation (n=20), some used controlled learning techniques (n=10), and the remaining studies used mixed methodology (n=17). There were 2,083 participants in the between-subjects groups; 1,088 participants in the within-subjects groups. There were 15 single-subject studies, which yielded 1,482 data points.

The unweighted mean effect size for between-subjects studies was d = .58 (each study contributes equally to overall mean) and the weighted mean effect size was d = .30 (95% CI .21 to .39). There were no significant outliers in the between-subjects group. Because the confidence interval did not include zero, it was assumed that behavioral parent training conducted in a group format had a significant effect on the criterion variable. Differences in effect size were found when studies were analyzed separately based on the coded criteria variables. Studies with parents of children between the ages of 3 and 5 years had an effect size of .40 while studies with parents of children between the ages of 6 and 8 years had an average effect size of .19 and children between the ages of 9 and 11 years had an average effect size of 1.36. Studies with training programs using 1 to 5 sessions had a mean effect size of .96; those using 6 to 10 sessions had a mean effect size of .50; those using 11 to 15 sessions had a mean effect size of .45; and those using more than 15 sessions had a mean effect size of .08; indicating that larger effects were found when fewer sessions were used, although no further explanation or interpretation of these differences were provided. In summary, variables significantly impacting the effect size of between-subjects studies included method of outcome assessment, child

age, method of program delivery, number of sessions, method of assignment to conditions, and use of reliability assessments.

The unweighted mean effect size for within-subjects studies was d = .74 and the weighted mean effect size was .68 (95% CI .59 to .77). The confidence interval for the within-subjects groups did not include zero, indicating that the studies had a significant impact on outcome measures. There was one outlier present in this group, which was removed from further statistical analyses. Studies delivering training in an individual consultation format had an average effect size of .43, while studies using a group format had an average effect size of .70. This finding supported related studies in finding larger effects when training was delivered in a group format, which has been explained by the positive effects of peer support and modeling (Lundahl, et al., 2005). In summary, variables significantly impacting the effect size of within-subjects studies included method of outcome assessment and method of program delivery.

The unweighted mean effect size for single-subjects studies was d = .59 and the weighted mean effect size was d = .54 (95% CI .43 to .65). There were no significant outliers in the single-subjects group. The confidence interval did not include zero, implying the treatment had a significant effect on the criterion variable. In summary, variables significantly impacting the effect size of single-subjects studies included child age and method of program delivery.

Results of the meta-analysis suggest that behavioral parent training is an effective intervention for reducing externalizing problem behaviors in children; however, the effectiveness of this intervention is not as large as it was hypothesized to be prior to the meta-analysis. The overall mean weighted effect sizes for between-subjects, within-

subjects, and single-subject research designs were all within the small to moderate range and were considered potentially significant (between-subjects and single-subjects) and compelling (within-subjects). The authors cautioned over-interpretation of the superior average effect size for within-subjects design over between-subjects and single-subjects designs, citing previous research showing that this type of research design causes inflated effect sizes, regardless of actual treatment effects on outcomes. The authors also caution against over-interpretation of differences in effect size based on method of outcome assessment, citing a potential for parent biases in self-reported outcome measures versus direct observation. Suggestions for future research included coding studies for treatment integrity and social validity measures. Limitations of the meta-analysis included variability in the methodological quality of studies reviewed and methodological limitations in calculating effect sizes for outcomes in single-subject designs.

Over the past 20 years, researchers have conducted numerous studies investigating the effectiveness of various parent training programs, including the *Incredible Years* (Webster-Stratton, 2001), *Parent Child Interaction Therapy* (Eyberg, 1988), and *Triple P-Positive Parenting Practices* (Sanders, 1999). Despite differences in training components, duration, and research methodology, several meta-analyses have shown that much of the outcome research available reported similar findings supporting the effectiveness of behavioral parent training programs in improving behavior in young children (Conroy, Dunlap, Clarke, & Alter, 2005; Lundahl et al., 2006; Maughan et al., 2005).

In one examination of the *Incredible Years* parent training series, Scott (2005) tested the effects of this program in a clinical practice setting. Participants were 59

parents of children ages three to eight years residing in London and Southern England. All children were referred for antisocial behavior to their local community mental health agency. The Parent Account of Child Symptoms was used as a semi-structured interview to gather parent's reports of children's antisocial behavior pre- and post-intervention. Parents also completed the Strengths and Difficulties Questionnaire (SDQ) as a self-report of their child's conduct problems, hyperactivity, peer relationships, and prosocial behavior. Parents received the 12-week BASIC parent training program of the Incredible Years series, which was administered according to the manual. A control (waiting list) group was used for comparison purposes. Facilitators of all sessions were trained therapists from each local health agency. Immediately following the end of intervention, parent reports of child behavior as measured by the interview showed significant decreases in antisocial behavior; similar findings were shown for negative behavior reports on the SDQ, but with smaller effect sizes. Similar or even greater decreases in antisocial behavior and hyperactivity were found at the one-year follow-up as compared to controls. Peer relationships did not show significant improvement following intervention. The researchers also found that risk factors such as ethnic minority, single parent families, and low SES did not reduce treatment effectiveness. Demographic information did not include the percentages of participants who were mothers versus fathers. This would be valuable information to report regarding whether or not the program was effective for both parents. It is necessary to evaluate research conducted with American children and families and diverse ethnic populations to determine whether this training series will be as effective with American children and families as it was for English participants.

The *Incredible Years* parenting program was also evaluated among 634 ethnically diverse mothers of children enrolled in Head Start (Reid, Webster-Stratton, & Beauchaine, 2001). The CBCL was used to assess externalizing behaviors including aggression and antisocial behaviors from parent reports. Parents of all ethnic groups receiving intervention were observed to be more positive, less inconsistent, and use less harsh discipline in their parenting (as measured via the Dyadic Parent-Child Interactive Coding System Revised (DPICS-R) compared to parents in the control group, who were exposed to only the regular Head Start program. Additionally, children of parents receiving the intervention were observed via the DPICS-R to exhibit fewer behavior problems at one-year follow-up; however, CBCL reports were not significantly improved for the intervention group. Importantly, few differences were reported across ethnic groups and significant differences were only found among the use of positive parenting and use of critical statements to children as measured by the DPICS-R. These results indicate the applicability of this program for ethnically diverse populations. The large sample size and randomized, controlled design add statistical strength to the positive findings of this study.

Schuhmann and colleagues (1998) conducted a randomized, controlled trial of Parent Child Interaction Therapy (PCIT) with 64 clinic-referred families. Participants were assigned to a PCIT treatment condition (n=37) or a waitlist control group (n=27). Criteria for inclusion specified that all families referred had a child who was of preschool age (3 to 5 years) with a DSM-IV diagnosis of conduct disorder. Families in the treatment condition participated in PCIT sessions while control group families were evaluated using the outcome measures, but had no other contact with the therapists or researchers.

Outcome measures included direct observation of the quality of parent-child interactions using the Dyadic Parent-Child Interaction Coding System-II (DPCICS-II; Eyberg, Bessmer, Newcomb, Edwards, & Robinson, 1994), the Parental Locus of Control Scale (PLOC; Campis, Lyman, & Prentice-Dunn, 1986), and the Dyadic Adjustment Scale (DAS; Spanier, 1976). Assessments were re-administered every 4 months during treatment and at a follow-up assessment 4 months after the final PCIT session. Results showed that parents participating in PCIT sessions had more positive interactions with their children, and children demonstrated more frequent compliance with parent direction as compared to the parents in the waitlist control group. Parents in the PCIT group also reported lower levels of parental stress and greater internal locus of control in parenting practices compared to the waitlist control group. Finally, parents in the PCIT group reported greater improvements in their children's behavior following the therapy sessions than did the control group parents. Differentially positive outcomes for the PCIT group were maintained at the 4-month follow-up assessment. A limitation of this study was the relatively brief follow-up period, as researchers determined maintenance of outcomes at four months post-treatment. Further research assessing treatment maintenance at longer intervals following treatment termination would strengthen the efficacy reports for PCIT.

A more recent study provided support for the long-term maintenance of treatment outcomes for PCIT (Eyberg, Funderburk, Hembree-Kigin, McNeil, Querido & Hood, 2001). Eyberg and colleagues (2001) studied the maintenance of treatment outcomes for 13 families with preschoolers diagnosed with conduct disorder at one- and two-years post-treatment. Treatment effectiveness was measured by the DPCICS-II (Eyberg et al., 1994), the Parenting Stress Index (PSI; Abidin, 1995), the PLOC (Campis et al., 1986),

and the DAS (Spainier, 1976). Significant differences ($p < .05$) were found between the PCIT families and the control group families on all measures. Eight of the 13 families maintained positive treatment effects at the one- and two-year follow-up assessments.

Sanders, Markie-Dadds, Tully, and Bor (2000) conducted a controlled trial of Triple P-Positive Parenting Practices (TPP) in which three variants of the program ranging in levels of intensity were compared on 305 preschool-aged children (mean age 3 years) at risk for developing conduct problems. Families were randomly assigned to one of four conditions: (a) enhanced level, (b) standard level, (c) self-directed, and (d) wait-list control. The various conditions varied from practitioner-assisted to self-directed using booklets and videos at the family's home. The standard program involved teaching parents 17 core child management strategies. Ten of the strategies were designed to increase children's competence and development (e.g., talking with children; physical affection; praise; attention; engaging activities; setting a good example). The remaining seven strategies were designed to help parents manage challenging behaviors by engaging in positive parenting practices (e.g., setting rules; directed discussion; planned ignoring; clear, direct instructions; logical consequences; and time-out). Parents were taught a six-step planned activities routine to enhance the generalization and maintenance of parenting skills (e.g., plan ahead; decide on rules; select engaging activities; decide on rewards and consequences; and hold follow-up discussions with the child). Parents were taught to apply parenting skills to a broad range of target behaviors in both home and community settings with the target child and their siblings. Short-term and long-term follow-up data were collected on the effectiveness of the intervention. Various measures were utilized to collect frequency and intensity of behavior information for each child in

order to ascertain the level of behavior change pre and post-intervention. Specifically, the Parent Daily Report (PDR; Chamberlain & Reid, 1987), Parenting Scale (PS; Arnold, O'Leary, Wolff, & Acker, 1993), and the Parent Problem Checklist (PPC; Dadds & Powell, 1991) were utilized. The results showed that all levels of the TPP produced significant results for the children and families taking part in the study, however, the enhanced (most intensive) version produced the greatest results.

Applying Principles of Positive Behavior Support to Parent Training

Positive behavior support (PBS) refers to a process designed to address problem behaviors by helping caregivers understand the function of their child's behavior, then teaching their children the needed replacement skills through implementation of positive behavioral strategies (Dunlap et al., 2003). Identifying the purpose served by the child's problem behavior, or the function of the behavior, is a central tenet of PBS. Parent training programs which teach parents to solve the problem of challenging behavior by identifying the behavioral function (e.g., obtain, escape, control), help caregivers develop new strategies to support their children, which are practiced within the family's daily routines (Armstrong, Hornbeck et al., 2006; Dunlap & Fox, 1996). Conroy, Dunlap, Clarke and Alter (2005) conducted a meta-analysis of the available research on the use of PBS interventions with young children. The meta-analysis included research conducted between 1984 and 2003, which was published in 23 peer-reviewed journals. Articles that met inclusion criteria were evaluated based on the following demographic and methodological variables: a) disability type; b) age and gender; c) availability of demographic data; d) setting; e) dependent measures; f) intervention type; g) intervention agents; h) study design; i) reporting of generalization treatment fidelity and social

validation data. Results indicated that the majority of the interventions targeted children between the ages of 3 and 6 years (80%), who most often had developmental delays, including autism and pervasive developmental delays (59%) or intellectual disabilities (29%). The majority of the studies used teachers (42%), researchers (37%), and family members (26%) as intervention agents and were conducted in school (62%) or home (26%) settings. Most studies used destructive (74%) or disruptive (53%) behaviors as outcome measures as indices of decreases in problem behavior; however, a large percentage of studies also included indices of increases in adaptive or prosocial skills as outcome measures, such as skill performance (45%), engagement (30%), or social interaction (23%). The inclusion of positive or prosocial outcomes is not surprising, considering the focus on positive behaviors and learning new skills is one of the central tenets of PBS. Results also indicated that a large percentage of the studies used multi-component intervention plans (45%), making it difficult to identify what specific intervention strategies led to the behavioral improvements. Additionally, only one of the studies used a between-group experimental design, while 85% of the studies used a within-group, single-subject design. Finally, the meta-analysis found that very few of the studies incorporated measures of generalizability (15%), treatment fidelity (8%), or social validity (26%) in their research. Overall results of the meta-analysis highlighted an increasing trend for professionals in early education to use positive behavior interventions with children who display challenging behaviors.

A single-subject study conducted by Buschbacher and colleagues (2004) demonstrated the effectiveness of teaching a parent to implement positive behavior support interventions in the home setting with a child who had severe medical and

behavioral problems, specifically, autism spectrum behaviors and Landau-Kleffner syndrome. The research design used in this study was a concurrent multiple-baseline across behaviors design, which allowed the researchers to conduct statistical analyses and to draw meaningful interpretations from these results. Results of this study indicated that individually administered PBS interventions reduced the child's challenging behavior, increased the child's engagement, increased positive parent-child interactions, decreased negative parent-child interactions, and increased the number of days the child slept throughout the night. In addition to child and parent outcome measures, the researchers asked four independent adults to view videotapes of the intervention sessions and to rate whether or not the intervention was socially acceptable and whether or not the child's behavior changed in visible, meaningful ways. All four reviewers indicated that the intervention was acceptable and the child's behavior meaningfully improved. Despite the limitations in generalizability due to single-subject design and very specific medical and psychosocial characteristics of the subject, this study provides support for the usefulness and social acceptability of PBS interventions.

Duda, Dunlap, Fox, Lentini and Clarke (2004) conducted a study, which demonstrated the effectiveness of using PBS interventions in a preschool setting with two young children. Duda and her colleagues used a single-subject, ABAB design to evaluate the intervention's effectiveness at managing two 3-year-old girls' behavior in a community preschool. The researchers conducted extensive consultation with school staff and provided training in the principles of teaming and PBS. Following this extensive preparatory period, the researchers facilitated a team-based functional assessment of the two girls' problem behaviors. Once the team determined the function of the girls'

challenging behaviors, the researchers assisted the team in developing PBS intervention strategies and trained the teachers to implement the interventions using modeling and feedback procedures. Outcome data consisted of direct observation of the children's engagement in specific classroom activities, frequency of challenging behavior, treatment integrity as measured by teacher compliance with the intervention components, and social validity data as reported by the teachers and a naïve observer. Results indicated that during the intervention phase following the initial baseline phase, both girls' level of engagement increased and frequency of problem behaviors decreased. During the return to baseline condition following the first intervention phase, both girls showed rapid returns to initial baseline levels of low engagement and high frequency of challenging behavior. In the final intervention phase, both girls again showed increases in engagement and decreases in challenging behavior. Although social validity data indicated that teachers felt confident that the intervention components were acceptable and that they were able to perform all components, treatment integrity data indicated that both teachers left out critical components of the intervention during multiple fidelity observations. Despite its rigorous research methodology, this study had several weaknesses, which should be considered when interpreting the results. These limitations included a restricted sample size composed of two girls who both had significant developmental delays and provision of intensive training and support to the teachers by the researchers prior to, during, and after completion of the study. While these limitations do not lessen the significance of the effectiveness of the intervention for the specific participants in this study, they suggest that demographic and participant variables may have been responsible for changes in child and teacher behavior. These results

contributed additional support to the feasibility, acceptability, and effectiveness of PBS interventions to prevent and correct problem behaviors in young children.

While PBS has been documented in recent years to assist individuals of all ages and developmental levels in the home, school, and community settings (Bushcbacher, Fox, & Clarke, 2004; Conroy et al., 2005; Duda et al., 2004; Fox, Dunlap, & Cushing, 2002; Fox, Dunlap, & Powell, 2002; Fox & Little, 2001; Vaughn, White, Johnston, & Dunlap, 2005), its availability has been limited due to costs associated with providing individually administered, intensive services (Armstrong, Hornbeck et al., 2006). To increase the availability of PBS to more families of young children, a parent training curriculum organized around the six core principles of PBS and the literature on early childhood development and infant mental health was developed.

Preliminary reports indicate the effectiveness of the *Helping Our Toddlers, Developing Our Children's Skills* (*HOT DOCS©)* parent training program as a means of reducing challenging behavior in young children and improving parent-child relationships based on the results of a study completed by Armstrong, Hornbeck and colleagues (2006). Although these preliminary findings are encouraging in light of their results indicating high levels of parent satisfaction with the program and parent reports of improvements in child behavior (Armstrong et al., 2006), recent federal mandates, such as the Individuals with Disabilities Education Improvement Act (IDEIA, U.S. Department of Education, 2004) and the No Child Left Behind Act (NCLB, 2001), emphasize the importance of using only those interventions that are empirically-supported through rigorous and competent research. If practitioners are going to continue to use *HOT DOCS©* the program must be formally evaluated.

Summary

The past three decades of research have indicated an alarming and ever-growing need for interventions that address challenging behavior in young children. Studies have consistently demonstrated prevalence rates of challenging behavior upwards of 25% in the 3- to 5-year age group. Longitudinal research also has clearly demonstrated the profuse, long-term negative outcomes associated with early emerging behavior problems. Following the research on increasing prevalence rates and long-term negative outcomes, researchers and practitioners have developed a multitude of strategies for preventing and treating behavior problems in children and families. Of these interventions, behavioral parent training has been supported by numerous, repeated, well-designed studies and is generally considered the best-practices approach to preventing and remediating challenging behavior in young children. Finally, recent research in the field of positive behavior support has demonstrated the principles incorporated in PBS interventions to be effective and socially acceptable as interventions for young children with challenging behaviors. The past three decades of research has clearly indicated a need for empirically-supported, evidence-based parent training interventions, and more recent research has indicated that approaching prevention through a PBS framework will enable parents and caregivers to prevent and correct challenging behavior in young children as early as possible.

CHAPTER 3

Methods

Introduction

The purpose of this study was a preliminary investigation of caregivers' perceptions of the effectiveness of the *Helping Our Toddlers Developing Our Children's Skills (HOT DOCS©)* parent training program. This chapter presents information about participants, setting, the *HOT DOCS©* parent training program, tools for measurement, methods of data collection, and methods of data analysis. Research methods used in this study were dictated by the archival nature of the data. The design used by the developers was a one-group, pretest/posttest design.

Participants

Parents and/or caregivers were referred by their pediatrician, psychologist, or therapist, or were recruited through community advertisement with brochures and posters, to participate in a university-based parent training program for families with children displaying challenging or disruptive behavior. As referrals were made or caregivers responded to public advertisements, caregivers' names were added to a wait-list for future parent training sessions. Two-hundred-sixty caregivers were scheduled to participate in the parent training program. As is shown in Table 1, of the expected 260 caregivers, 71 caregivers did not return reminder phone calls and did not participate in the program. Of the 189 caregivers who were present for the first session, 30 (11.5%) attended fewer than three of the remaining sessions and were considered drop-outs.

Thirteen (5%) of the caregivers attended three or more sessions but elected not to sign the Internal Review Board (IRB) release form and therefore were not included in data collection, although they did complete the course. The final participant sample consisted of 146 caregivers who attended three or more of the sessions in one of fifteen classes conducted between August 2006 and April 2007 (11 delivered in English and four delivered in Spanish).

Table 1

Attendance Record of Initial Caregiver Sample

Attendance record	# Caregivers	Percent
Scheduled to attend	260	100
Never attended	71	27.3
Attended first session	189	72.7
Attended fewer than 3 sessions total	30	11.5
Attended 3+ sessions but did not sign IRB	13	5.0
Signed IRB and attended 3+ sessions	146	56.2

Note: Percent reported is percent of caregivers expected to attend the first session.

Description of Caregivers

A breakdown of the final participant sample by gender, race/ethnicity, education level, and type of insurance is shown in Tables 2 and 3. Participants were 32.2% male (n = 47) and 67.8% female (n = 99). Participants ranged in age from 23 to 69 years (M = 38.5, SD = 9.19). The sample consisted of caregivers reporting their race or ethnicity as White (43.8%), Hispanic (34.9%), African American or Black (5.5%), Other (3.4%), Native American (2.7%), or Asian (0.7%). Caregivers' reported level of education varied from less than a high school diploma to a graduate level degree, with the largest percentage of participants (26.7%) receiving a degree from a 4-year college (n = 39). Approximately 19% of the participants reported having earned a high school diploma or

less, 20% reported having technical training or a two-year college degree, and 52% reported having a four-year college degree or graduate level degree.

Table 2

Breakdown of Participant Sample by Gender, Race/Ethnicity, and Education Level

Variable	Number	Percent (%)
Gender		
Female	99	67.8
Male	47	32.2
Race/Ethnicity		
African American/Black	8	5.5
White	64	43.8
Hispanic	51	34.9
Asian	1	0.7
Native American	4	2.7
Other	5	3.4
Not Reported	13	8.9
Caregiver Education Level		
Less than HS	4	2.7
HS Diploma	23	15.8
Technical Training	9	6.2
2-Year College Degree	21	14.4
4-Year College Degree	39	26.7
Graduate Degree	38	26.0
Not Reported	12	8.2

Note. n = 146 (Only participants who completed 3 or more sessions of parent training and consented to participate in the study by signing the IRB consent form were included in data analysis).

Within the context of this study, type of insurance was used as a general indicator of socio-economic status, with private insurance representing higher socio-economic status and Medicaid or no insurance representing lower socio-economic status. As is shown in Table 3, approximately 56% of participants reported having private insurance, 26% of participants reported having Medicaid insurance, and 5% of participants reported having no insurance. Some participants (12%) did not respond to this item.

Table 3

Breakdown of Participant Sample by SES Indicator

Type of Insurance	Number	Percent (%)
Private	82	56.2
Medicaid	38	26.0
No Insurance	8	5.4
Not Reported	18	12.3

Note. n = 14

As shown in Table 4, of the female participants, 79 reported being the child's mother or adoptive/foster mother, 12 reported being child service providers, six reported being the child's grandmother, one reported being the child's aunt, and one reported being the child's sister. Of the male participants, 43 reported being the child's father or adoptive/foster father and four reported being the child's grandfather.

Table 4

Relation of Caregiver to Target Child

Relation	Number	Percent (%)
Females (n = 99)		
Mother & Adoptive/Foster Mother	79	79.8
Grandmother	6	6.1
Other Female Relative	2	2.0
Child Service Provider	12	12.1
Males (n = 47)		
Father & Adoptive/Foster Father	43	91.5
Grandfather	4	8.5

Note. n = 146

Description of Target Children

Target children ranged in age from 14 months to ten years (M = 47.0 months, SD = 23.89). Approximately 34% of the targeted children had existing medical and/or psychological diagnoses. Many of the remaining children had recently been evaluated by pediatricians or psychologists due to parent or teacher concerns with development and

behavior, but did not meet criteria for a diagnosis according to the Diagnostic and Statistical Manual-4th Edition, Text Revision (DSM-IV-TR, American Psychiatric Association, 2000). As is shown in Table 5, of the children in the sample with preexisting diagnoses, 20 (13.7%) were children with a diagnosis on the autism spectrum including Pervasive Developmental Disorder (ASD/PDD), seven (4.8%) were children with developmental delays, six (4.1%) were children with speech or language impairments, five (3.4%) were children with Attention-Deficit/Hyperactivity Disorder (ADHD), five (3.4%) were children with epilepsy, two (1.4%) were children with Prader Willi syndrome, two (1.4%) were children with schizencephaly (diagnosis reported by caregiver on demographic questionnaire), one (<1%) was a child with a hearing impairment, and one (<1%) was a child with cerebral palsy.

Table 5

Number and Percent of Target Children by Preexisting Diagnosis

Child's Preexisting Diagnosis	Number	Percent (%)
None	97	66.4
ASD/PDD	20	13.7
Developmental Delay	7	4.8
Speech-Language Impairment	6	4.1
ADHD	5	3.4
Epilepsy	5	3.4
Prader Willi Syndrome	2	1.4
Schizencephaly	2	1.4
Hearing Impairment	1	0.7
Cerebral Palsy	1	0.7

Note. n = 146

Caregivers Not Completing Training (Drop Outs)

Description of Caregivers Not Completing Training

A breakdown of the participants who did not complete the training by gender, race/ethnicity, education level, and type of insurance is shown in Tables 6 and 7. Demographic information available from the 30 participants who did not complete at least three sessions was analyzed with descriptive statistics. Participants who did not complete the training were 43.3% (n = 13) males and 56.7% (n = 17) females. The participants who dropped out before completing the program ranged in age from 24-50 years (M = 32.95, SD = 4.43). The participants who dropped-out reported their race/ethnicity as Hispanic (33.3%), Caucasian (26.7%), Other (10.0%), or African American (6.7%). Caregivers' reported level of education varied from less than a high school diploma to a graduate level degree, with the largest percentage of participants (20.0%) completing graduate level training (n = 6). Approximately 17% of the caregivers reported having earned a high school diploma or less, 30% reported having technical training or a two-year college degree, and 37% reported having a four-year college degree or graduate level degree. Forty-three percent of the participants who dropped-out reported having private insurance, 30% reported having Medicaid insurance, and 27% reported having no insurance.

Table 6

Breakdown of Program Non-Completers by Gender, Race/Ethnicity, and Education Level

Variable	Number	Percent (%)
Gender		
Female	17	56.7
Male	13	43.3
Ethnicity		
African American/Black	2	6.7
Caucasian	8	26.7
Hispanic	10	33.3
Other	3	10.0
Not Reported	7	23.3
Parent Education Level		
Less than HS	3	10.0
HS Diploma	2	6.7
Technical Training	2	6.7
2-Year College Degree	5	16.7
4-Year College Degree	5	16.7
Graduate Degree	6	20.0
Not Reported	7	23.3

Note. n = 30 (only participants who signed the IRB but completed fewer than 3 sessions of parent training were used in data analysis).

Table 7

Breakdown of Program Non-Completers by SES Indicator

Type of Insurance	Number	Percent (%)
Private	13	43.3
Medicaid	9	30.0
Not Reported	8	26.7

Note. n = 30

As shown in Table 8, of the female caregivers who did not complete training, 15 reported being the child's mother, one reported being the child's aunt, and one reported being a child services provider. All of the male caregivers not completing training reported being the child's father.

Table 8

Relation of Caregiver to Target Child for Program Non-Completers

Relation	Number	Percent (%)
	Females (n = 17)	
Mother	15	88.2
Aunt	1	5.9
Child Service Provider	1	5.9
	Males (n = 13)	
Father	13	100

Note. n = 30

Description of Target Children of Caregivers Not Completing Training

Targeted children of the caregivers who dropped out of the program ranged in age from 24 months to seven years (M = 48.23 months, SD = 21.74). As shown in Table 9, the majority of these children were identified with preexisting medical and/or psychological conditions; including five children (16.7%) identified on the autism spectrum, one child (3.3%) with ADHD, one child (3.3%) with a hearing impairment, and one child (3.3%) identified with developmental delays.

Table 9

Breakdown of Target Children of Program Non-Completers by Preexisting Diagnosis

Child's Preexisting Diagnosis	Number	Percent (%)
None	22	73.3
ASD/PDD	5	16.7
ADHD	1	3.3
Hearing Impairment	1	3.3
Developmental Delay	1	3.3

Note. n = 30

Differences between the demographic characteristics of program completers and program non-completers or drop-outs were compared through visual inspection of percentages. Overall, the demographic characteristics of caregivers who completed the training program and those who dropped out before completing the program appeared to

be very similar. Program completers and non-completers differed slightly in the percentage of caregivers reporting their ethnicity as Caucasian.

Setting

This study was conducted at a large University in West Central Florida. The parent training program was delivered in the Children's Medical Services clinic, which is run by the Department of Pediatrics at the University. Parent training groups were held in conference rooms within a campus clinic.

HOT DOCS© Parent Training Program

The *HOT DOCS©* parent training program was delivered in six sessions. Each of the six sessions lasted approximately two hours. The first session included thirty minutes of socialization, including a light dinner provided by trainers and brief introductions; twenty minutes during which parents completed the demographics form and pretest (see description of measures below for details); and one hour of behavioral parent training. The second, third, fourth, and fifth sessions included 30 minutes of socialization, peer support, and review followed by training. The sixth session included 30 minutes of socialization, peer support, and review followed by training, and then finished with twenty minutes during which parents completed the posttest and a program evaluation survey (see description of measures below for details). The training for each session included lecture, practice exercises, role playing, and video vignettes. Each session also included a Parenting Tip and a Special Play Activity. The weekly Parenting Tips were specific skills parents were asked to practice using throughout the following week. Parents were asked to use the *HOT DOCS© Tip Tracker* sheets to keep a record of the number of days they used the skill, to rate how difficult or easy the skill was to use each

day, and to provide specific examples of how they used the skill with their children each week. The Special Play Activities were specific play activities parents were asked to engage in with their child for five minutes each day of the following week. Parents were provided with the small toys necessary to engage their child in the play activity and were given instructions, examples, and a worksheet with guidelines describing how to use the five minutes of special play to teach their child motor, communication, and social-emotional skills. A more detailed description of each training session follows.

Session One. The first session provided participants with an overview of the *HOT DOCS*© program and an introduction to early childhood development. Parents were instructed in brain development, typical ages for achievement of developmental milestones and warning signs for delays in development, school readiness skills, and an overview of the problem-solving process. The Parenting Tip for the first session was "Use Positive Words," which was explained to parents as telling children what to do instead of what not to do. For example, parents should say, "Feet on the floor," instead of "Stop jumping on the couch." A class activity was conducted in which parents brainstormed positive ways to rephrase twenty of the most common behaviors parents usually respond to with "No!" or "Stop!" The Special Play activity for session one was "Bubbles." Each participant was given a container of bubbles to use for this activity. A detailed breakdown of the session contents, tips, and activities is provided in Appendix A.

Session Two. The second session focused on teaching parents about the importance of healthy routines and rituals in promoting positive development and adaptive behavior in young children. Sleep routines, or the activities surrounding

bedtime, were highlighted, since this is the most common problematic routine for most parents and children. The Parenting Tip for this session was "Catch Them Being Good," which prompted parents to focus on the positive behaviors or skills their children exhibit each day and to respond with specific, labeled praise for these behaviors. The Special Play activity for this session was reading, for which parents were again provided instruction, examples, and a detailed worksheet of activities. Each participant was given a developmentally appropriate storybook.

Session Three. The third session introduced parents to the basics of behavior development in young children, including the concepts of social learning, modeling, antecedents and consequences, reinforcement and the function of behavior. In this session, parents were introduced to the problem-solving chart, which includes triggers, behaviors, consequences, preventions, new skills, and new responses. In this session, parents learned to complete the first three sections. The Parenting Tip for this session was "Use Calm Voice," which reminded parents to use a calm, quiet voice in response to their child's behavior, especially in response to challenging or noncompliant behavior. The Special Play Activity was coloring, for which each participant was given a coloring book and a box of crayons.

Session Four. The fourth session provided parents with training in the use of various preventative strategies, including using timers, providing prompts, clarifying expectations, visual schedules or prompts, and personalized stories. The Parenting Tip for this session was "Use Preventions," which promoted parents' use of the preventative techniques taught in the session. The Special Play Activity was fun dough, for which

each parent was provided with one color or tub of dough and a cartoon character placemat.

Session Five. The fifth session provided parents with training in how to teach their children new skills and replacement skills for challenging behaviors. In this session parents began to complete the second half of the problem solving chart, including the preventions and new skills sections. Parents were also provided instruction in the appropriate uses and steps for Time-Out from Positive Reinforcement and what to do when children misbehave or are non-compliant. The Parenting Tip for this session was "Follow Through," which provided parents with a brief script to use whenever their children did not comply with a direction or task. The Special Play Activity was playing with a ball, which each parent was provided before leaving the session.

Session Six. The sixth and final session focused on helping parents understand and manage their own stress as well as providing a summary and review of the content of the previous sessions. Parents completed the final categories of the problem solving behavior chart by listing the variety of new responses parents can have to their child's appropriate behaviors. These new responses include specific praise, prompting, validation and redirection, and follow through. The Parenting Tip for this session was "Take 5 for Yourself," which reminded parents to focus on their own health and stress levels each day. There was not a new Special Play Activity for this week, but parents were prompted to use one of the five previously learned Special Play Activities each day.

All of the materials, curricula, presentations, and handouts were translated to Spanish (Armstrong, Lilly, Curtiss, Salinas, Chiraboga, & Ortiz, 2006) by a team of USF university students and staff including a fellow in internal medicine and pediatrics who

was originally from Ecuador; a master of public health student with medical degree and a Fulbright Scholar, who was originally from Nicaragua; a doctoral intern in school psychology, who spoke Spanish as a second language; and a parent liaison for the *HOT DOCS*© program, who was originally from Columbia.

Measures

HOT DOCS© *Demographics Form*. The *Demographics Form* was developed by the *HOT DOCS*© authors in order to collect information about the caregiver participants and the children the parents targeted as having challenging behavior who were involved in the parent training program. This form includes 10 questions which ask the caregivers to indicate their address, gender, age, child's age, age(s) of other children in the home, type and name of health insurance, relationship to targeted child, ethnicity, and level of education. The demographics form is available in both English and Spanish (see Appendices C and D).

HOT DOCS© *Knowledge Test*. The *Knowledge Test* was also developed by the *HOT DOCS*© authors in order to assess caregivers' knowledge of child development, behavioral principles, and parenting strategies. Although the test includes items from various areas of knowledge covered in the parenting program, at this point there are not enough items per area to investigate cluster scores. For the purposes of this study, only total scores were recorded and analyzed. The test consists of twenty "True/False" statements and takes approximately ten minutes to complete. The pre-test was administered during the first session, following the program overview and prior to the first lecture. The posttest was administered during the sixth session, following completion

of the final lecture. The knowledge test is available in both English and Spanish (see Appendices E and F).

HOT DOCS© Tip Tracker Sheets. The *Tip Tracker* sheets were developed by the *HOT DOCS©* authors to monitor, on a daily basis, caregivers' use of the skills learned in the sessions at home. The sheets contain seven columns (one for each day of the week) with a 5-point Likert-type scale, which asks caregivers to rate each day their ease of use of the specific parenting skill of the week with their child. The Likert scale ranges from 1 = *Very difficult* to 4 = *Easy*. In addition, a response option, *Did not use skill*, is provided. Caregivers are asked to circle this option if they did not use the skill that day. The sheet also contains four blank lines on which caregivers are asked to give specific examples of how they used the parenting tip with the target child. These caregiver responses were used to validate the participants understanding of the skill and appropriate implementation. The sheets are available in both English and Spanish (see examples in Appendices G and H).

Child Behavior Checklist. The Child Behavior Checklist (CBCL; Achenbach, 2001) was developed to assess internalizing and externalizing behaviors in children. There are multiple versions of the CBCL depending on the child's age and the source of information. The CBCL 1½-5 was developed for use with children between the ages of 18 and 71 months of age and can be completed by parents/caregivers and/or teachers/caregivers. The CBCL 6-18 was developed for use with children and adolescents between the ages of 6 and 18 years and can be completed by parents/caregivers and teachers. The CBCL problem behavior scores are grouped into two broad-band factors (internalizing and externalizing problems), a total broad-band score derived by averaging

weighted scores from the broad-band factors, and eight narrow-band subscales. The narrow-band subscales include aggressive behavior, anxious/depressed, attention problems, delinquent behavior, social problems, somatic complaints, thought problems, and withdrawn behavior. All versions of the CBCL are available in English and Spanish. Since this study will evaluate the results of children between the ages of 2 and 7 years, both the CBCL 1½-5 and CBCL 6-18 will be used for data analysis.

Both forms of the CBCL are very similar in design, differing only in the type and amount of items asked (CBCL 1½-5 has 99 items, CBCL 6-18 has 112 items). Each form is a questionnaire that asks parents to rate their child's behavior in the previous 2 months by rating each item on a three-point scale: 0 = *not true* of the child, 1 = *somewhat* or *sometimes true*, and 2 = *very true* or *often true*. Several items include prompts for parents to provide brief descriptions of problems, disabilities, most significant parent concerns, and to list their child's strengths. Completing the CBCL takes approximately 20 minutes. Responses are scored using a computerized scoring software program. Scores are expressed as T-scores with a mean of 50 and a standard deviation of 10. A T-score of 64 or below is in the normal range; 65-69 is in the borderline range; and 70 or above is in the clinical range. Scores in the borderline or clinical range indicate that a child's behavior problems are more significant than other children the same age and gender.

The CBCL 1½-5 was normed on a national sample of 700 children. The manual reports median internal consistency coefficients for the Internalizing and Externalizing scales that range from .76 to .92. Studies of the CBCL subscales indicated high retest reliability (Withdrawn: r = .82; Somatic Complaints: r = .95; Anxious/Depressed: r = .86; Social Problems: r = .87; Internalizing Problems: r = .89) and adequate interrater

reliability (Withdrawn: r = .66; Somatic Complaints: r = .*52;* Anxious/Depressed*:* r = .77; Social Problems: r = .77; Internalizing Problems: r = .66; Achenbach, 1991).

The CBCL 6-18 was normed on a national sample of 1,753 children. The manual reports median internal consistency coefficients for the Internalizing and Externalizing scales that range from .78 to .97. Studies of the CBCL subscales indicated high test-retest reliability (r = .90) and high content and criterion related validity. For the purposes of this study, the following scores will be used for analysis: Internalizing Problems, Externalizing Problems, and marginal pretest and posttest means.

Adaptive Behavior Assessment System-2nd Edition. The Adaptive Behavior Assessment System-Second Edition (ABAS-II; Harrison & Oakland, 2003) was developed to assess adaptive skills and levels of adaptive functioning for individuals from birth to 89 years of age. There are multiple versions of the ABAS-II depending on the age of the child and the source of information. The ABAS-II Parent/Primary Caregiver Form (Ages 0-5) was developed for children ages birth to 5 years 11 months and is completed by parents or caregivers. The ABAS-II Parent/Primary Caregiver Form (Ages 5-21) was developed for children, adolescents, and young adults ages 5 to 21 years old. There also are ABAS-II forms, which ask teachers, caregivers, and daycare providers to rate children's adaptive skills in similar domains as the parent forms for children between the ages of 2 to 5 years or 5 to 21 years. Norm-referenced scores include three broad domains of adaptive behavior (Conceptual, Social, and Practical), a combined General Adaptive Composite (GAC), and 10 sub-domain skill areas. The skill areas measured by the ABAS-II Parent/Primary Caregiver Form are communication, community use, functional pre-academics, home living, health and safety, leisure, self care, self-direction,

social, and motor skills. The skill areas that make up the Conceptual domain are communication, functional pre-academics, and self-direction. The Social domain is composed of skill areas that measure social skills and leisurely skills. The skill areas that make up the Practical domain are self-care, home living, community use, and health and safety. Both the ABAS-II Parent/Primary Caregiver Form (Ages 0-5) and the ABAS-II Parent Form (Ages 5-21) are available in English and Spanish. Since this study will evaluate the results of children between the ages of 2 and 7 years, the ABAS-II Parent/Primary Caregiver Form (Ages 0-5) and the Parent Form (Ages 5-21) will be used for data analysis. For the purposes of this study, the following scores will be used for analysis: Conceptual, Social, and Practical Domains and General Adaptive Composite.

The ABAS-II Parent/Primary Caregiver Form (Ages 0-5) and the Parent Form (Ages 5-21) are similar in design, differing only in the number and type of items (Parent/Primary Caregiver Form has 241 items, the Parent Form has 232 items). Both forms of the ABAS-II are questionnaires that ask parents or caregivers to rate their child's current performance on adaptive skills functioning. Parents or caregivers are asked to rate each item using the following scale: 0 = *Is not able* to do the skill, 1 = *Never or almost never when needed* to do the skill, 2 = *Sometimes when needed* will do the skill, and 3 = *Always or almost always when needed* will do the skill. The ABAS-II Parent/Primary Caregiver Form and the Parent Form take approximately 20 minutes to complete. Responses are scored using a computerized scoring software program. Specific skill area scaled scores have mean of 10 and a standard deviation of 3. The skill area scores combine to form the three ABAS-II broad domain scores and the GAC score, each with a composite score mean of 100 and a standard deviation of 15. Composite scores

falling between 90 and 109 and scaled scores falling between 8 and 12 are classified in the average range.

The ABAS-II Parent/Primary Caregiver Form (Ages 0-5) was normed on a national sample of 1,350 children ages birth to 5 years 11 months with demographics similar to the 2000 U.S. census. The manual reports the internal consistency for the skill area scores to range from 0.80-0.92, and 0.91-0.97 for the composite scores. Studies of the ABAS-II subscales indicated high test-retest reliability (Communication: $r = 0.82$; Community Use: $r = 0.79$; Functional Pre-Academics: $r = 0.85$; Home Living: $r = 0.83$; Health and Safety: $r = 0.81$; Leisure: $r = 0.80$; Self-Care: $r = 0.81$; Self-Direction: $r = 0.80$; Social: $r = 0.81$; Motor: $r = 0.80$; Harrison & Oakland, 2003).

The ABAS-II Parent Form (Ages 5-21) was normed on a national sample of 1,670 children and adolescents between 5 and 21 years of age with demographics similar to the 2000 U.S. census. The manual reports the internal consistency for the skill area scores to range from 0.86-0.93, and 0.95-0.98 for the composite scores. Studies of the ABAS-II subscales indicated high test-retest reliability (Communication: $r = 0.84$; Community Use: $r = 0.91$; Functional Academics: $r = 0.92$; Home Living: $r = 0.87$; Health and Safety: $r = 0.89$; Leisure: $r = 0.88$; Self-Care: $r = 0.90$; Self-Direction: $r = 0.88$; Social: $r = 0.91$; Harrison & Oakland, 2003).

In summary, the CBCL and ABAS-II are psychometrically sound instruments, as evidenced by their validity and reliability estimates. Each instrument makes a different contribution toward providing information about a child's overall functioning. The CBCL measures problem behavior and the ABAS-II assesses adaptive behavior and functional skills.

HOT DOCS© Program Evaluation Survey. The *Program Evaluation Survey* was developed by the *HOT DOCS©* authors to assess caregiver participants' perceptions of the effectiveness of the parent training program. The survey consists of eight statements about the benefits of *HOT DOCS©* to parents, the skill of *HOT DOCS©* trainers, *HOT DOCS©'* impact on child and family behaviors and relationships, which caregivers are asked to rate on a 4-point Likert-type scale as "strongly agree," "agree," "disagree," or "strongly disagree." The survey also consists of six open-ended questions, which prompt caregivers to share their perceptions on the usefulness of the program as well as any suggestions for future trainings or improvements to the current program. The survey is available in both English and Spanish (see Appendices I and J).

Data Collection

The pilot study used archival data, as the researcher analyzed data collected by the *HOT DOCS©* authors prior to the implementation of the research program. Results of the pilot study will be used to make modifications to the existing processes, procedures, and assessment instruments prior to developing a full-scale program evaluation study. Data collected for each participant included a demographics information sheet; a knowledge pre- and posttest of the basic principles of positive behavior support, behaviorism, and child development; behavior rating scales (CBCL and ABAS-II); weekly progress monitoring forms for caregivers' home use of parenting techniques; and a program evaluation survey on caregivers' perceptions of the usefulness and effectiveness of the program. Caregivers completed the *Demographics Form* and the *Knowledge Pretest* during the first session. Caregivers were also given the appropriate behavior rating scales according to the age of the targeted child during the first session and were asked to

complete and return the forms the next week. Caregivers completed individual *Tip Tracker* sheets each week for the seven days following the training day. *Tip Tracker* sheets were completed for each of the first through the fifth sessions. Caregivers completed the *Knowledge Posttest* during the final session of training.

To supplement the quantitative data collected, qualitative data were collected in the form of open-ended questions and prompts on the *Program Evaluation Survey* administered during the final parent training session. Guided response questions on the program evaluation survey prompted caregivers to respond to the following: 1) usefulness of information learned in the program; 2) sharing of information learned in the program with others; 3) possible improvements to the training program; 4) aspects of the program caregivers valued most; and 5) any suggestions for future parent trainings.

A packet of behavior rating scales was mailed to each caregiver three months after completion of the parent training program to collect posttest data. A postage-paid envelope addressed to the *HOT DOCS*© authors at the Child Development Clinic was included for return of the completed instruments. Included in the packet was a letter detailing the request for information, a list of procedures for completing the instruments, and a description of how the information would be used as part of the research project. Caregivers also were informed that they would receive a follow-up phone call from the researchers to interpret the results of the behavioral assessments. Reminder postcards were mailed to participants who had not returned the behavior rating scales two weeks after the original mailing. Participants who had not returned the posttest behavioral assessments three weeks after the postcards were mailed, were called on the telephone and prompted to return the rating scales.

Data Analysis

Thirty participants attended fewer than three sessions and were considered "drop-outs" and an additional 13 participants completed the training program but did not sign the IRB consent form. Data from participants who did not complete three or more sessions or did not sign an IRB consent form will not be included in any of the analyses. The final sample consisted of 146 respondents. Measures of effect size were calculated to provide information about the strength of the relationship between the independent variable and the dependent variables (Stevens, 1999).

Caregiver Knowledge

Research Question #1. What is the impact of participation in the 6-week *HOT DOCS*© parent training program on caregiver knowledge as measured by pre- and posttest scores on the *HOT DOCS*© *Knowledge Test*?

A dependent means t-test was conducted using each subject's pretest score and posttest score on the *HOT DOCS*© *Knowledge Test*, which is composed of 20 True/False items. Scores were reported as total number of items correct. Of the 146 participants analyzed in the demographics section a total of 112 participants completed both the pretest and posttest, attended three or more sessions, and signed the IRB consent form. Thirty-four participants completed either the pretest or the posttest, but did not complete both.

Caregiver Perceptions of Severity of Child Behavior

Research Question #2. Do caregivers perceive their child as having more problem behavior than a normative sample prior to participation in the 6-week parent training program?

Descriptive statistics were used to analyze the severity levels of caregiver perceptions of child problem behavior prior to participating in the parent training program. Caregiver ratings on the CBCL were used as indicators of problem behaviors in children. Caregiver ratings were analyzed using the descriptive categories assigned to specific score ranges as designated in the CBCL manual.

Number and percent of standard scores falling within the non-significant, borderline, and clinically significant categories were calculated for the Internalizing, Externalizing, and Total Problems scales of the CBCL. To analyze caregiver perceptions of child problem behavior, a chi-square goodness of fit analysis was calculated using the observed number of scores in the sample in the Non-Significant (T-scores less than 65), Borderline (T-scores between 65 and 69), and Clinically Significant (T-scores greater than or equal to 70) categories on the Internalizing and Externalizing scales of the CBCL and the expected number of scores in each of the three descriptive categories as predicted for a normal distribution of scores in a national sample. One-hundred-one participants completed the CBCL rating scale at pretest and were included in the calculations used to answer research question #2.

Research Question #3. Do caregivers perceive their child as having less adaptive behavior than a normative sample prior to participation in the 6-week parent training program?

Descriptive statistics were used to analyze the severity levels of caregiver perceptions of child adaptive behavior prior to participating in the parent training program. Caregiver ratings on the ABAS-II were used as indicators of adaptive behavior in children. Caregiver ratings were analyzed using the descriptive categories assigned to

specific score ranges as designated in the ABAS-II manual. Number and percent of standard scores falling within the non-significant, borderline, and clinically significant categories were calculated for the Conceptual, Social, Practical, and Global Adaptive Composite scales of the ABAS-II. To analyze caregiver perceptions of adaptive behavior, a chi-square goodness of fit analysis was calculated using the observed number of scores in the sample in the Non-Significant (T-scores greater than or equal to 80), Borderline (T-scores between 70 and 79), and Clinically Significant (T-scores less than 69) categories on the Conceptual, Social, and Practical scales of the ABAS-II and the expected number of scores in each of the three descriptive categories based on the normed distribution in the national sample. One-hundred-six participants completed the ABAS-II rating scale at pretest and were included in the calculations used to answer research question #3.

Changes in Child Problem & Adaptive Behavior

Research Question #4. To what extent do caregivers perceive a decrease in child problem behavior following caregiver participation in the 6-week parent-training program?

A two-factor repeated measures ANOVA was conducted to analyze the differences between subjects' pretest and posttest scores on the Internalizing and Externalizing scales on the CBCL. The two within-subjects (repeated) factors were type of scale (A) (i.e., Internalizing and Externalizing) and time (T) (i.e., pretest and posttest) as shown in the data matrix in Table 10 below. Twenty-eight participants completed and returned both pretest and posttest CBCL rating scales.

Table 10

Data Matrix for Two-Factor Repeated Measures Design for Problem Behavior

	Type of Scale (A)			
	Internalizing		Externalizing	
Subject (S)	Pretest	Posttest	Pretest	Posttest
S_1	X_{111}	X_{112}	X_{121}	X_{122}
S_2	X_{211}	X_{212}	X_{221}	X_{222}
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
S_n	X_{n11}	X_{n12}	X_{n21}	X_{n22}

Research Question #5. To what extent do caregivers perceive an increase in child adaptive behavior following caregiver participation in the 6-week parent-training program?

A two-factor repeated measures ANOVA was conducted to analyze the differences between subjects' pretest and posttest scores on the Conceptual, Social, and Practical scales on the ABAS-II. The two within-subjects (repeated) factors were type of scale (A) (i.e., Conceptual, Social, and Practical) and time (T) (i.e., pretest and posttest) as shown in the data matrix in Table 11 below. Twenty-seven participants completed and returned both pretest and posttest ABAS-II rating scales.

Table 11

Data Matrix for Two-Factor Repeated Measures Design for Adaptive Behavior

	Type of Scale (A)					
	Conceptual		Social		Practical	
Subject (S)	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
S_1	X_{111}	X_{112}	X_{121}	X_{122}	X_{131}	X_{132}
S_2	X_{211}	X_{212}	X_{221}	X_{222}	X_{231}	X_{232}
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
S_n	X_{n11}	X_{n12}	X_{n21}	X_{n22}	X_{n31}	X_{n32}

Caregiver Skills at Home

Research Question #6a. What is the frequency and ease of use of the weekly parenting tips as reported by caregivers?

The frequency of use per week of each parenting skill was computed from the weekly *Tip Tracker* forms. To determine ease of use, the overall mean caregiver rating of reported ease or difficulty of use of each skill was computed. Mean, maximum, median, and standard deviation of ratings was reported.

Research Question 6b. Is there a relation between frequency of use and ease of use as measured by the *HOT DOCS© Tip Tracker* sheets?

To determine if there was a relationship between frequency of use and ease of use, zero-order correlations between number of days used and average difficulty rating per week were calculated. An average of 63% of participants returned completed *Tip Tracker* forms each of the five weeks homework was assigned. Each week's data were analyzed separately as a different skill was assigned each week.

Caregivers' Overall Perceptions of the HOT DOCS© Program

Research Question #7. What are caregivers' overall perceptions of the *HOT DOCS©* parent training program as measured by the *HOT DOCS© Program Evaluation Survey*?

Caregivers' mean ratings of satisfaction with the *HOT DOCS©* program were computed using quantitative data obtained from the *HOT DOCS© Program Evaluation Survey*. Thematic analyses of caregiver responses to open-ended questions and prompts were conducted for items #1, 3, 4, 5, and 6. Participant responses were systematically coded as individual thought units and then themes were identified in order to identify

similarities and differences for each question or prompt. Codes and categories used to analyze the data were derived directly from the available data rather than searching for and coding concepts derived from existing sources (Gall, Gall, & Borg, 2007). One-hundred-fourteen participants completed the *Program Evaluation Survey*. Refer to Appendix B for a visual representation of data sources for each research question.

CHAPTER 4

Results

Overview

The following chapter presents results of various data analyses used to answer each research question. Results are organized by research question.

Caregiver Knowledge

Research Question #1. What is the impact of participation in the 6-week *HOT DOCS*© parent training program on caregiver knowledge as measured by pre- and posttest scores on the *HOT DOCS*© *Knowledge Test*?

A dependent means t-test was calculated between subjects' pretest and posttest scores on the *HOT DOCS*© *Knowledge Test*. Means and standard deviations of pretest and posttest scores of caregivers' knowledge are reported in Table 12. To determine if there was a significant difference between pre- and posttest scores on the *Knowledge Test*, data were subjected to a dependent means t-test. The results of the t-test show that the participants' mean posttest score was significantly higher than the participants' mean pretest score, $t(1,111) = 8.45$, $p<.001$. The effect size for the t-test was large ($d = 1.13$).

Table 12

Means and Standard Deviations for Participant Scores on the Knowledge Test

Measure	M	SD	Minimum	Maximum	Skewness	Kurtosis
Pre-Test	16.03	1.92	11	19	-.682	.063
Post-Test	17.34	1.50	13	20	-.436	.077

Note.: n = 112

Caregiver Perceptions of Severity of Child Behavior

Research Question #2. Do caregivers perceive their child as having more problem behavior than a normative sample prior to participation in the 6-week parent training program?

In order to describe and analyze caregiver perceptions of the severity of child problem behaviors before participation in the program, the frequency and percent of caregiver ratings of child behavior falling within specific descriptive categories on the CBCL administered at pretest were calculated. Frequencies and percents were calculated using the Internalizing and Externalizing Problems T-scores. The frequencies of scores falling within these ranges were compared to the number of scores expected to fall within each category according to the percentages under the normal curve.

On the CBCL, scores classified as normal or Non-Significant ranged from 0 to 64; scores classified as Borderline ranged from 65 to 70; and scores classified as Clinically Significant are those reaching 70 and above. The normal curve predicts that 93.94% of scores will fall within the Non-Significant range, 3.79% of scores will fall within the Borderline range, and 2.27% of scores will fall within the Clinically Significant range for the CBCL. Chi-square analyses were calculated between observed and expected frequencies of scores in each descriptive category for scores in the Internalizing and Externalizing subscales. Refer to Table 13 for observed and expected frequency distributions for Internalizing subscale score comparisons and to Table 14 for Externalizing subscale score comparisons. The alpha-level used was $\alpha = .01$.

Table 13

Observed and Expected Frequencies for CBCL Internalizing Subscale T-Scores

Category	Observed *f*	Expected *f*
Non-Significant	57	94.880
Borderline	13	3.828
Clinically Significant	28	2.293

Note. n = 101

A chi-square goodness of fit test was conducted ($\alpha = .01$) using participants' scores on the Internalizing subscale. The resultant overall test was statistically significant, $\chi^2 (1, N = 101) = 252.24$. A significant difference between the expected frequency of scores in each descriptive category and the actual or obtained frequency of scores in each descriptive category for the CBCL Internalizing subscale was found. Caregivers perceived children in the sample to have higher frequencies of more severe internalizing problem behavior than would be expected for a normative sample. Specifically, significantly more children's scores fell within the Clinically Significant and Borderline descriptive categories and significantly fewer children's scores fell within the Non-Significant descriptive category than were expected. Nearly twelve times the number of children expected to have scores in the Clinically Significant range were found in the sample. Effect size was calculated to describe the strength of the relationship between the expected and obtained values. The effect size for the chi-square calculation for scores on the Internalizing subscale was large ($w = 1.508$), indicating that the differences between participants' perceptions of the severity of child problem behavior and expectations for a normative sample were not only statistically significant but also clinically meaningful.

Table 14

Observed and Expected Frequencies for CBCL Externalizing Subscale T-Scores

Category	Observed *f*	Expected *f*
Non-Significant	52	94.880
Borderline	14	3.828
Clinically Significant	32	2.293

Note. n = 101

A chi-square goodness of fit test was conducted ($\alpha = .01$) using participants' scores on the Externalizing subscale. The resultant overall test was statistically significant, $\chi^2 (1, N = 101) = 335.66$. A significant difference between the expected frequency of scores in each descriptive category and the actual or obtained frequency of scores in each descriptive category for the CBCL Externalizing subscale was found. Caregivers' perceived children in the sample to have higher frequencies of more severe externalizing problem behavior than would be expected for a normative sample. Specifically, significantly more children's scores fell within the Clinically Significant and Borderline descriptive categories and significantly fewer children's scores fell within the Non-Significant descriptive category than were expected. The observed number of children in the sample whose Externalizing subscale scores fell within the Clinically Significant range was nearly fourteen times the number expected to fall within that range. Effect size was calculated to describe the strength of the relationship between the expected and obtained values. The effect size for the chi-square calculation for scores on the Internalizing subscale was large ($w = 1.823$), indicating that the differences between participants' perceptions of the severity of child problem behavior and expectations for a normative sample were not only statistically significant but also clinically meaningful.

A graphic comparison of observed and expected frequencies of T-scores for the Internalizing and Externalizing scales is shown in Figure 1.

Research Question #3. Do caregivers perceive their child as having less adaptive behavior than a normative sample prior to participation in the 6-week parent training program?

In order to describe and analyze parent perceptions of the severity of deficits in child adaptive behaviors before participation in the program, the frequency and percent of caregiver ratings of child behavior falling within specific descriptive categories on the ABAS-II administered at pretest were calculated. Frequencies and percents were calculated using the Conceptual, Social, and Practical domain standard scores. The frequencies of scores falling within these ranges were compared to the number of scores expected to fall within each category according to the percentages under the normal curve for a national normative sample. On the ABAS-II, scores classified as normal or Non-Significant ranged from 80 or above; scores classified as Borderline ranged from 70 to 79; and scores classified as Clinically Significant ranged from 69 and below. The normal curve predicts that 91.1% of scores will fall within the Non-Significant range, 6.7% of scores will fall within the Borderline range, and 2.2% of scores will fall within the Clinically Significant range for the ABAS-II. A chi-square goodness of fit test was calculated between observed and expected frequencies of scores in each descriptive category for scores on the Conceptual, Social, and Practical domains. Refer to Table 15 for observed and expected distributions for Conceptual domain score comparisons, Table 16 for observed and expected distributions for Social domain score comparisons, and Table 17 for Practical domain score comparisons.

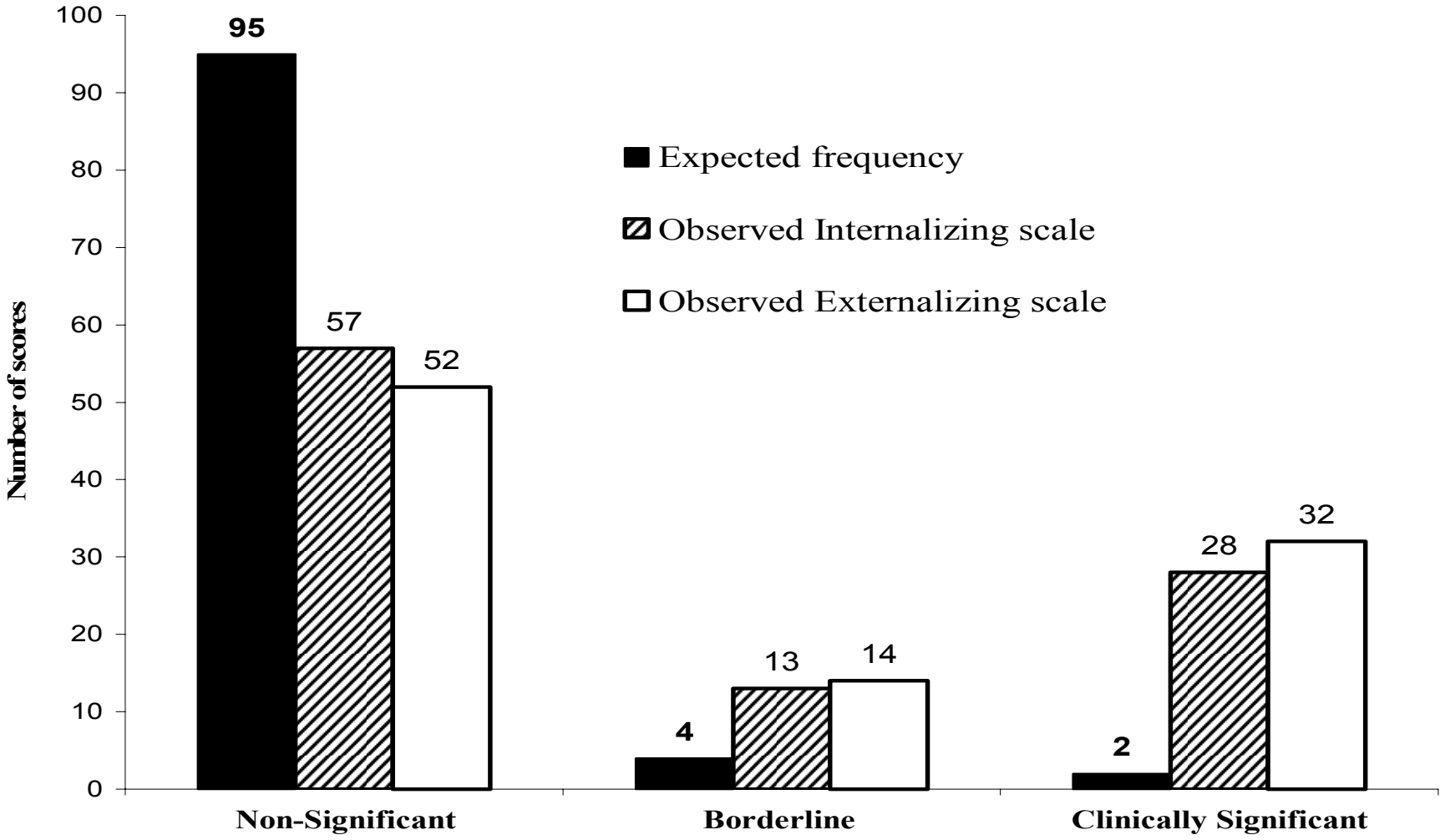

Figure 1. Number of expected and observed CBCL T-scores by descriptive category.
Note. n = 101

Table 15

Observed and Expected Frequencies for ABAS-II Conceptual Scale Scores

Category	Observed *f*	Expected *f*
Non-Significant	62	96.566
Borderline	16	7.102
Clinically Significant	28	2.332

Note. n = 106

Chi-square critical values were obtained from a critical values table according to degrees of freedom (k-2). For the analyses conducted for scores on the Conceptual, Social, and Practical domains of the ABAS-II, the critical χ^2 (2, N = 106) was 5.99. The statistic obtained from chi-square analysis calculations was compared to the critical value from the table. The observed χ^2 for scores on the Conceptual domain was 306.04, indicating a significant difference between the expected frequency of scores in each descriptive category and the actual or obtained frequency of scores in each descriptive category. Effect size was calculated to describe the strength of the difference between the expected and obtained values. The effect size for the chi-square calculation for scores on the Conceptual domain was large (w = 1.699).

Table 16

Observed and Expected Frequencies for ABAS-II Social Scale Scores

Category	Observed *f*	Expected *f*
Non-Significant	55	96.566
Borderline	22	7.102
Clinically Significant	29	2.332

Note. n = 106

The observed χ^2 for scores on the Social domain was 354.11, indicating a significant difference between the expected frequency of scores in each descriptive category and the actual or obtained frequency of scores in each descriptive category.

Effect size was calculated to describe the strength of the difference between the expected and obtained values. The effect size for the chi-square calculation for scores on the Conceptual domain was large (w = 1.823).

Table 17

Chi Square Goodness of Fit Test for ABAS-II Practical Scale Scores

Category	Observed *f*	Expected *f*
Non-Significant	47	93.833
Borderline	21	6.901
Clinically Significant	35	2.266

Note. n = 103

The observed χ^2 for scores on the Practical domain was 525.04, indicating a significant difference between the expected frequency of scores in each descriptive category and the actual or obtained frequency of scores in each descriptive category. Effect size was calculated to describe the strength of the difference between the expected and obtained values. The effect size for the chi-square calculation for scores on the Conceptual domain was large (w = 2.258). A graphic comparison of observed and expected frequencies of standard scores for the Conceptual, Social, and Practical scales is shown in Figure 2.

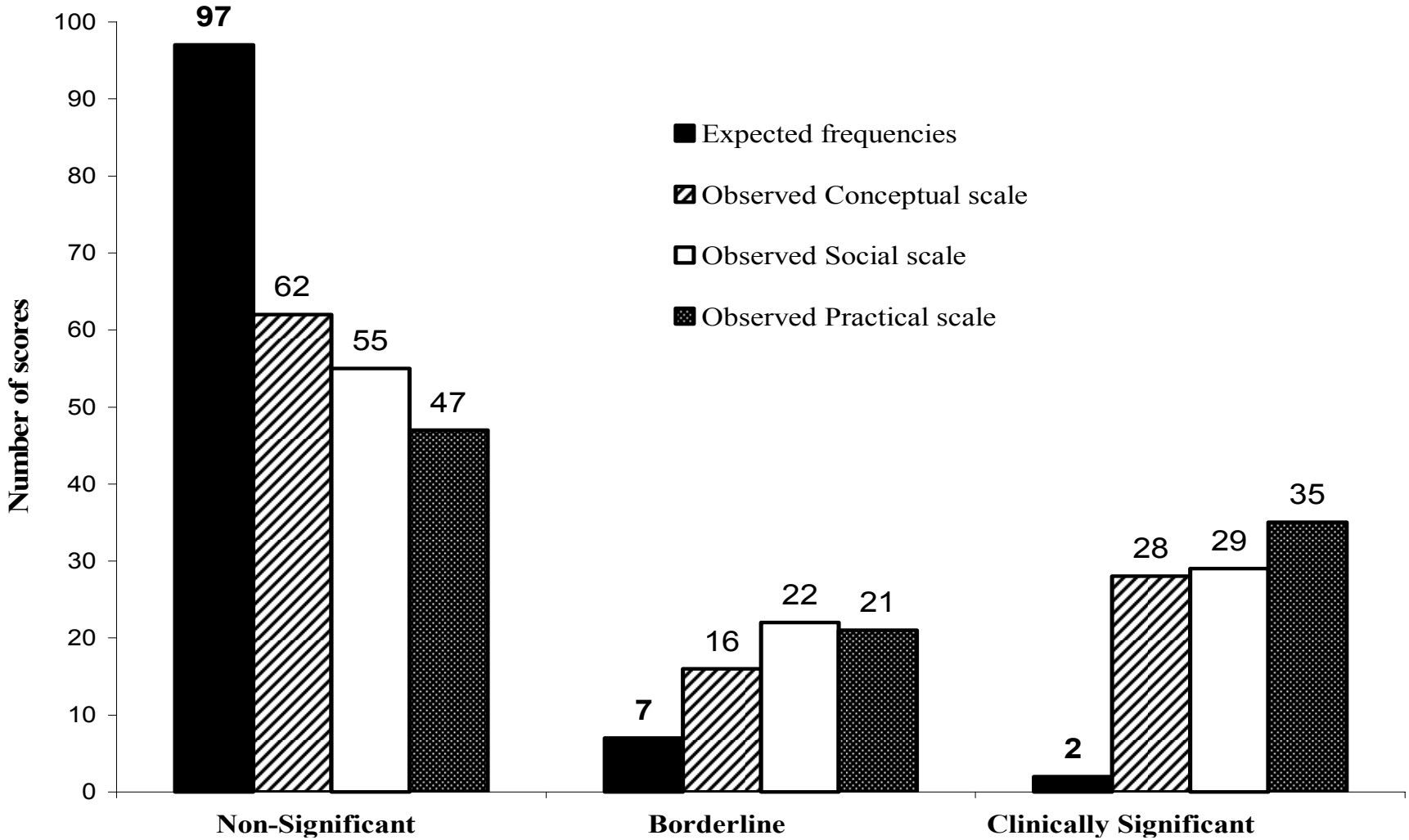

Figure 2. Number of observed and expected ABAS-II standard scores by descriptive category.
Note. n = 106

Changes in Child Problem & Adaptive Behavior

Research Question #4. To what extent do caregivers perceive a decrease in child problem behavior following caregiver participation in the 6-week parent-training program?

In order to analyze potential changes in the severity of child problem behavior as perceived by caregivers from pretest and posttest, a two-factor repeated measures analysis of variance (ANOVA) was computed. Means and standard deviations of pretest and posttest rating scale scores on the two subscales of the CBCL are reported in Table 18.

Table 18

Means and Standard Deviations of Pre- and Posttest CBCL Scores by Scale

	Pretest		Posttest	
CBCL Scales	M	SD	M	SD
Internalizing	56.23	11.29	52.77	10.85
Externalizing	59.79	12.46	54.23	11.78
Marginal Means	57.55		53.64	

Note. n = 28

The two within-subjects factors were type of scale, A (Internalizing and Externalizing) and time, T (pretest and posttest). As shown in Table 19, results revealed a non-significant interaction effect ($p>.05$), a statistically significant main effect for time, $F(1, 27) = 8.489$, $p<.01$, and a non-significant main effect for scale ($p>.05$).

Table 19

Analysis of Variance of CBCL Pre- and Posttest Scores

Source	*df*	SS	MS	F
Scale (A)	1	299.01	299.01	3.530
Time (T)	1	428.22	428.22	8.489*
Subject (S)	27	9206.17	340.97	
A x T	1	55.72	55.72	3.683
S x A (Scale Error)	27	2287.24	84.71	
S x T (Time Error)	27	1362.03	50.45	
SAT (Residual)	27	408.53	15.13	
Total	111	14046.92		

Note. *p<.05, ***p<.001

Follow-up of the significant main effect for Time (T), was done by examining the overall CBCL pretest and posttest mean scores (i.e., marginal means). The mean posttest score (M = 53.64) was significantly lower than the mean pretest score (M = 57.55). This finding indicates that caregivers' perceived severity of children's problem behavior was greater at pretest time as compared to posttest time. On the CBCL, higher scores indicate more severe levels of problem behavior; therefore, a decrease in scores from pretest to posttest indicates caregivers' perceived children to have significantly less severe levels of problem behavior following participation in the program. Refer to Figure 3 for a graphic representation of the pretest and posttest mean scores for the Internalizing and Externalizing scales of the CBCL.

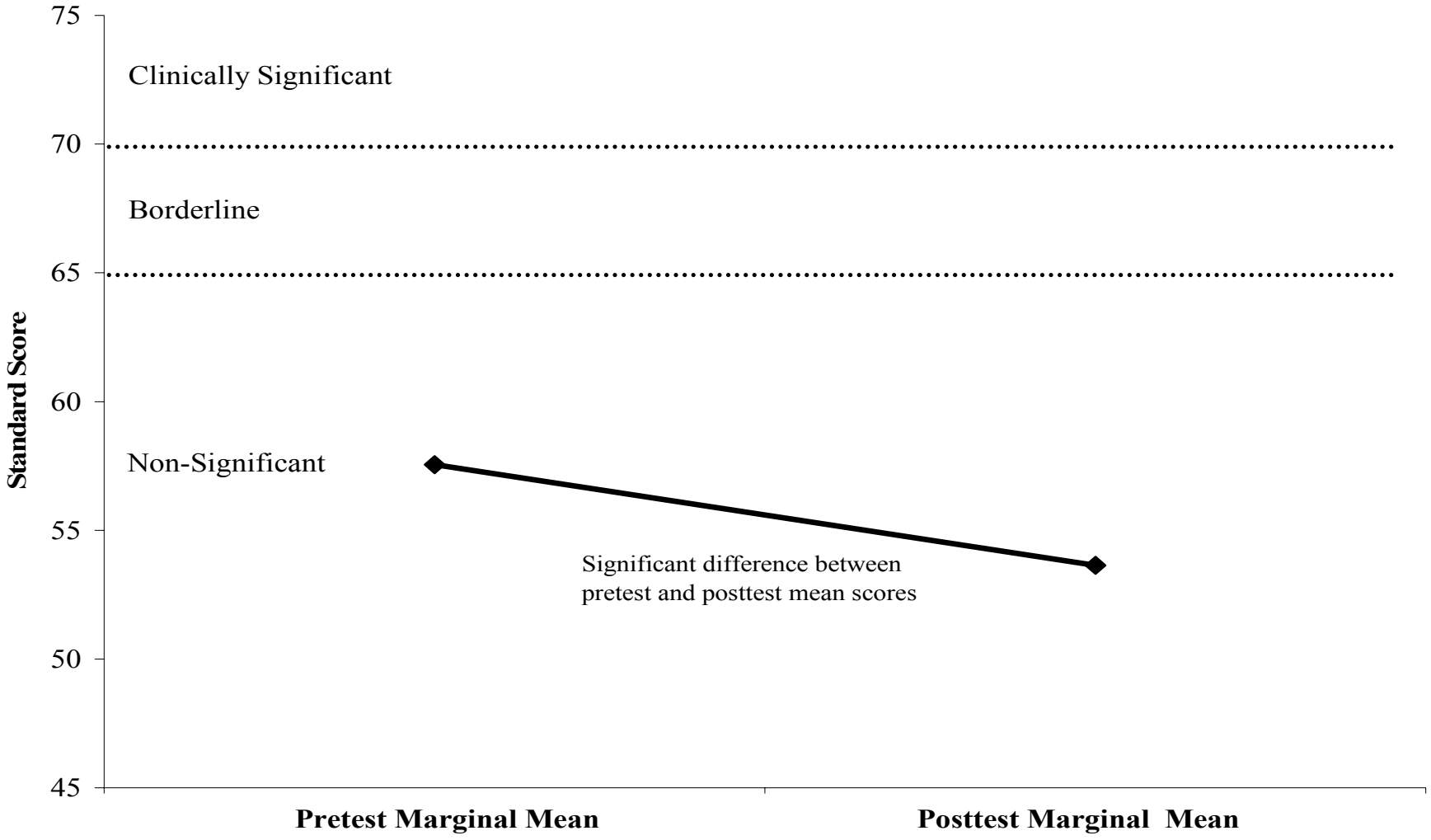

Figure 3. Pre- and posttest mean scores for CBCL scales.

Research Question #5. To what extent do caregivers perceive an increase in child adaptive behavior following caregiver participation in the 6-week parent-training program?

In order to analyze potential changes in the severity of deficits in child adaptive behavior as perceived by caregivers from pretest to posttest, a two-factor repeated measures analysis of variance (ANOVA) was computed. Means and standard deviations of pretest and posttest rating scale scores on the three subscales of the ABAS-II are reported in Table 20.

Table 20

Means and Standard Deviations of Pre- and Posttest ABAS-II Scores by Scale

	Pre		Post	
ABAS-II	M	SD	M	SD
Conceptual	81.74	19.93	87.12	18.95
Social	79.78	20.40	83.76	20.93
Practical	76.08	17.02	78.00	17.52
GAC	78.58	19.20	81.29	20.45

Note. n = 27

The two within-subjects factors were type of scale, A (Conceptual, Social, Practical) and time, T (pretest, posttest). As shown in Table 21, results revealed a non-significant interaction effect ($p>.05$) and a non-significant main effect for time ($p>.05$), indicating there were no significant differences in scores from pretest to posttest. A statistically significant main effect for scale, $F(2, 26) = 24.657$, $p<.001$) was observed.

Follow-up of the significant scale main effect was conducted using Tukey's post-hoc test. Results indicated a significant difference in the mean scores between the Conceptual and Practical mean scale scores. No significant differences were found between the Conceptual and Social scales or the Practical and Social scales.

Table 21

Analysis of Variance of ABAS-II Pre- and Posttest Scores

Source	*df*	SS	MS	F
Scale (A)	1	2760.33	2760.33	24.657*
Time (T)	1	777.93	777.93	3.313
Subject (S)	26	50195.00	1930.58	
A x T	1	7.26	7.26	0.181
S x A (Scale Error)	26	2910.67	111.95	
S x T (Time Error)	26	6104.24	234.78	
SAT (Residual)	26	1040.74	40.03	
Total	161	63796.17		

Note. *p <.001

These findings indicate that while caregivers' perceptions of the level of children's adaptive behavior did not significantly change following participation in the program, caregivers' perceptions of children's adaptive behavior across each of the three scales of the ABAS-II were significantly different from one another. At both pretest and posttest, the majority of caregivers reported children's scores on the Conceptual scale to be highest and scores on the Practical scale to be the lowest, with scores on the Social scale falling between the two other scales. On the ABAS-II, higher scores indicate more advanced development of adaptive skills; therefore, caregivers perceived children's Conceptual skills to be the most superior adaptive skill area, followed by Social skills, and Practical skills to be the least developed skill area. Adaptive skills measured within the Conceptual scale included communication, functional academics/pre-academics, and self-direction. Adaptive skills measured within the Social scale included leisure and social interaction. Adaptive skills measured within the Practical scale included community use, home living, health and safety, and self-care. Refer to Figure 4 for a graphic representation of the pretest and posttest mean scores for the Conceptual, Social, and Practical scales of the ABAS-II.

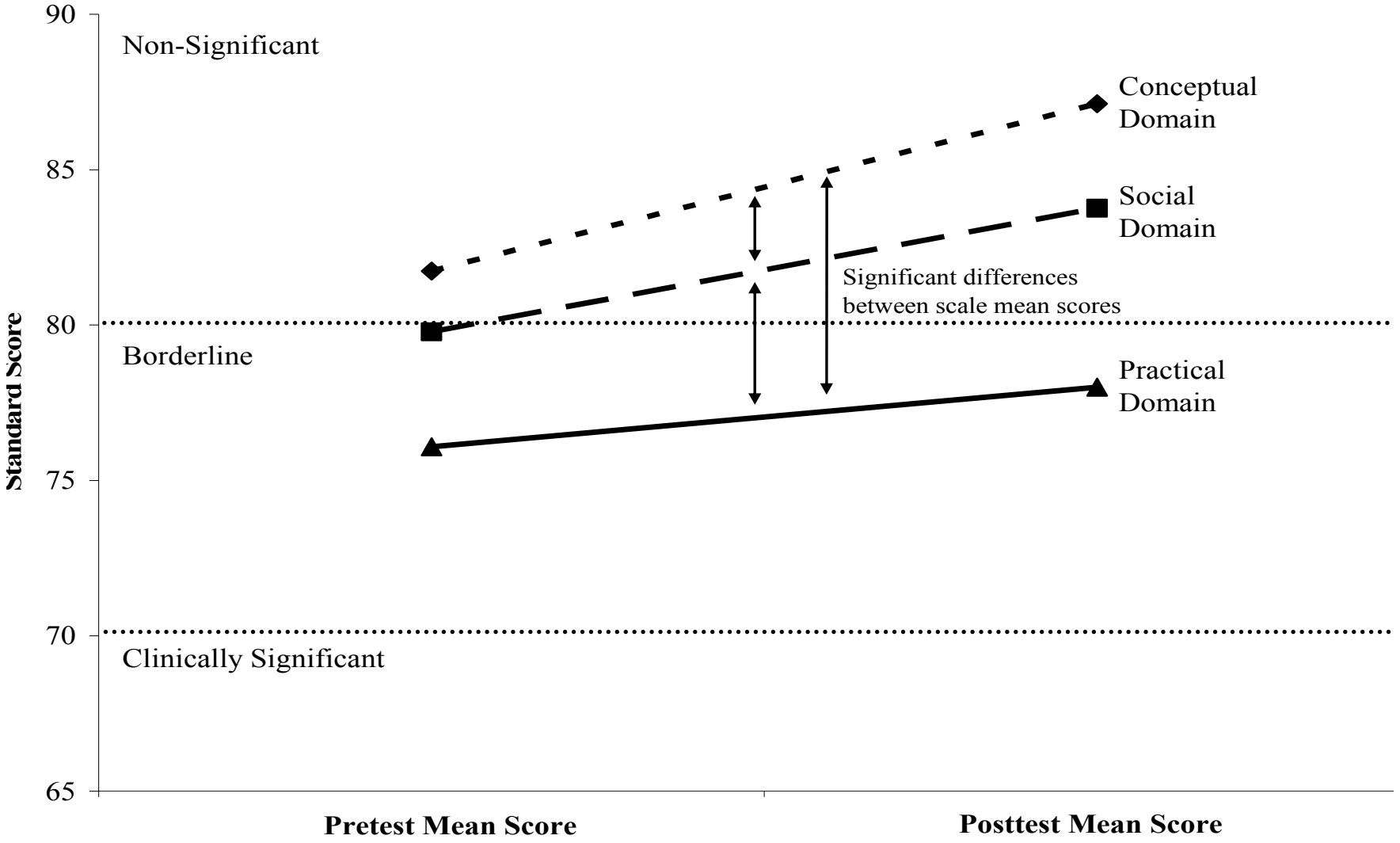

Figure 4. Pre- and posttest mean scores for ABAS-II scales.

Caregiver Skills at Home

Research Question #6a. What is the frequency and ease of use of the weekly parenting tips as reported by caregivers?

Each participant's responses on the weekly progress monitoring forms were analyzed. Average daily rating of reported difficulty for each of the five skills was computed. Means and standard deviations of the number of days per week caregivers reported using each of the skills is reported in Table 22. A graphic display of these ratings is presented in Figure 5. Descriptive statistics and correlations were computed for data from each week separately. A visual analysis of the graph displaying average daily ratings of ease or difficulty of use indicated differential caregiver ratings of ease of use across the five skills. Caregivers rated *Catch Them Being Good* as being the easiest skill to implement at home, followed by *Use Preventions*, *Use Calm Voice*, *Follow Through*, and *Use Positive Words*.

Each participant's responses on the weekly progress monitoring forms were analyzed. Average daily rating of reported difficulty for each of the five skills was computed. Means and standard deviations of the number of days per week caregivers reported using each of the skills is reported in Table 22. A graphic display of these ratings is presented in Figure 5. Descriptive statistics and correlations were computed for data from each week separately. A visual analysis of the graph displaying average daily ratings of ease or difficulty of use indicated differential caregiver ratings of ease of use across the five skills. Caregivers rated *Catch Them Being Good* as being the easiest skill to implement at home, followed by *Use Preventions*, *Use Calm Voice*, *Follow Through*, and *Use Positive Words*.

Four of the five skills followed a distinct pattern of ease or difficulty of use. Specifically, caregivers reported the skill as being easy to use on the first two or three days of the week, followed by a mid-week peak in difficulty of use, and finally a reduction in difficulty for the final two or three days of the week. The skills that most clearly followed this pattern included *Use Preventions*, *Follow Through*, and *Use Calm Voice*. *Catch Them Being Good* also followed the pattern, but with a less dramatic peak in difficulty. Caregiver ratings for *Use Positive Words* did not follow this pattern. For this skill, caregivers rated the skill as initially being more difficult to implement and progressively getting easier through the week.

Table 22

Average Daily Parent Ratings of Ease or Difficulty of Skill Use at Home

Day	Positive Words	Catch Them Being Good	Calm Voice	Use Prevention	Follow Through
Day 1	2.58	3.22	2.89	2.87	2.79
Day 2	2.69	3.29	2.92	3.13	2.95
Day 3	2.66	3.26	3.03	3.11	2.95
Day 4	2.76	3.23	2.93	2.89	2.81
Day 5	2.82	3.29	3.10	3.06	2.91
Day 6	2.91	3.41	3.10	3.25	3.06
Day 7	2.96	3.50	3.10	3.27	3.08
Number	106	102	93	83	73

Note. Response scale: 1-Very difficult, 2-Difficult, 3-Neither Difficult nor easy, 4-Very easy.

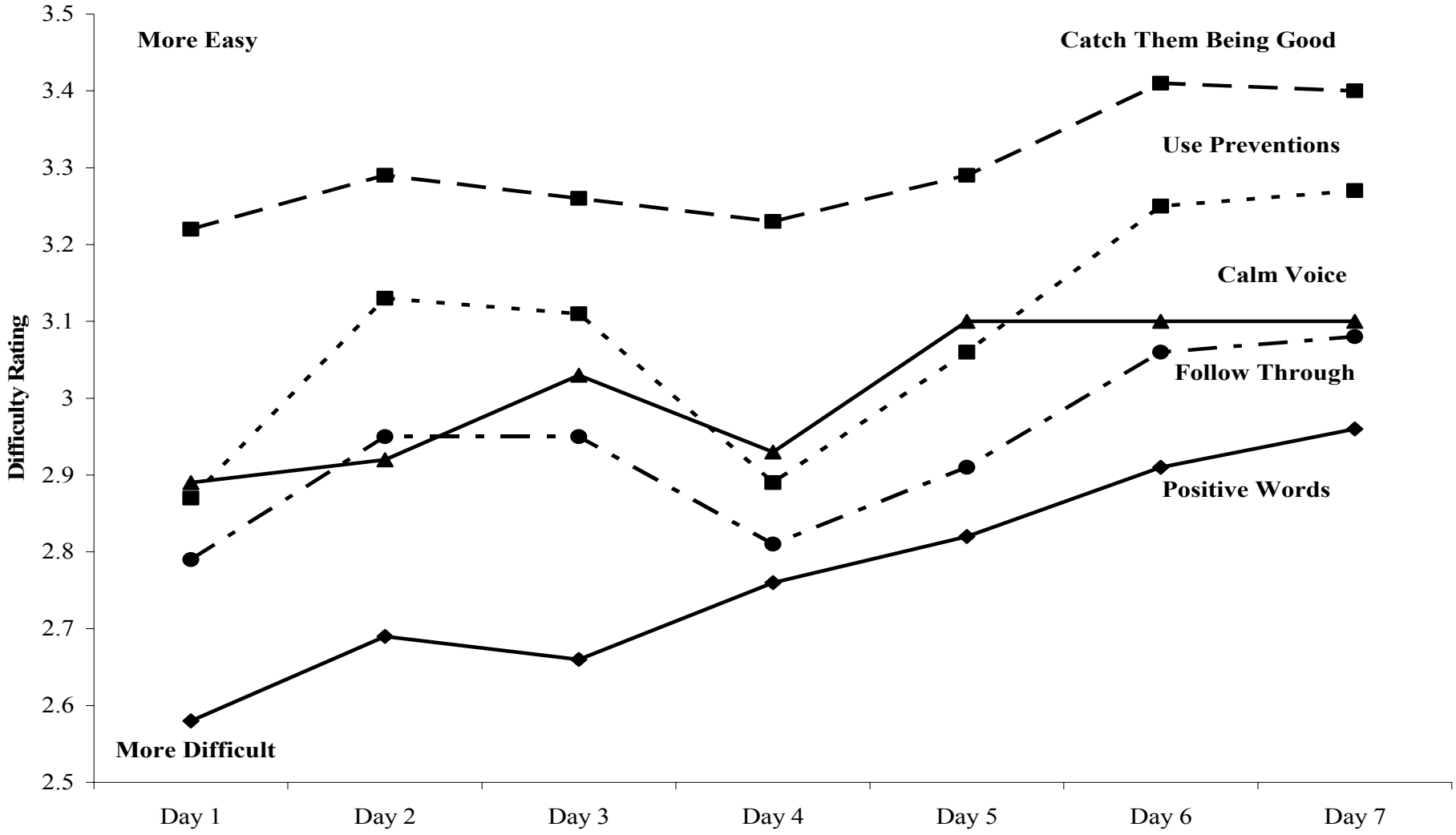

Figure 5. Average Daily Parent Ratings of Ease or Difficulty of Skill Use at Home

Research Question 6b. Is there a relation between frequency of use and ease of use as measured by the *HOT DOCS© Tip Tracker* sheets?

To determine if there was a relationship between ease or difficulty of use and frequency of use, zero-order correlations were computed between the number of days participants reported using the skill and the average difficulty rating participants reported for each weekly parenting skill. Refer to Table 23 for descriptive statistics and correlations. As is shown, the relationship between frequency o fuse and ease of use was not statistically significant (p>.05) for any of the five skills.

Table 23

Descriptive Statistics and Correlations for Weekly Skill Use and Ratings of Difficulty

		Days Used		Correlations	
Parenting Skill	N	M	SD	*r*	*p*
Use Positive Words	106	6.40	1.16	.03	.75
Catch Being Good	102	6.64	0.99	-.14	.17
Use Calm Voice	93	6.67	0.97	.06	.57
Use Preventions	83	6.60	0.81	.17	.13
Follow Through	73	6.42	1.18	.07	.54

Caregivers' Overall Perceptions of the HOT DOCS© Program

Research Question #7. What are caregivers' overall perceptions of the *HOT DOCS©* parent training program as measured by the *HOT DOCS© Program Evaluation Survey*?

Caregivers' ratings of satisfaction with the *HOT DOCS©* program were analyzed using descriptive statistics. In addition, a thematic analysis of caregiver responses to free-response questions and prompts was conducted. The codes and categories used to analyze the free-response data were derived directly from the available data rather than searching for and coding concepts derived from existing sources (Gall et al., 2007). A total of 114

caregivers completed the *Program Evaluation Survey*. Research question #7 was answered through the use of two-stage quantitative-qualitative analyses (Onwuegbuzie & Teddlie, 2002).

In the first stage, caregivers' responses were analyzed using a phenomenological approach, in which responses were systematically coded by the researcher as individual thought units in order to identify similarities and differences for each question or prompt and then grouped using inductive reasoning to identify themes and generate a conceptual framework to interpret the existing data. In the second stage, each of the derived themes was quantitized using endorsement rates indicating the percent of participants endorsing a given theme for each item (Minor, Onweugbuzie, Witcher, & James, 2002). Endorsement rates were calculated by assigning a value of 1 to each participant whose response represented the theme and a 0 to each participant whose response did not include a thought unit representing the theme. For each theme, the total number of 1's was divided by the total number of participants responding to the item. In order to ensure intercoder agreement, a graduate student not involved in the *HOT DOCS*© parent training program was recruited to code the free-response items according to the thematic categories identified by the primary researcher. Across the various free-response items on the program evaluation survey the overall intercoder reliability between the primary researcher and the independent coder was approximately 87%.

Descriptive Analysis of Quantitative Data

As shown in Table 24, the overall majority of participants (97.4%) *Agreed* or *Strongly Agreed* that the *HOT DOCS*© program met their expectations. More specifically, participants *Agreed* or *Strongly Agreed* that the program was beneficial to their families

(97.4%), the trainers were knowledgeable and effective instructors (100%), the parenting tips were beneficial (95.6%), the special play strategies promoted positive interactions with children (97.4%), that the program positively impacted parenting attitudes and practices (95.6%), and that the program positively impacted children's behavior (94.7%).

Of the eight statements used to gauge participants' perceptions of the usefulness of the program, only three statements were marked as *Strongly Disagree* by one participant each. In general, these three statements all related to the caregiver's ability to implement parenting strategies presented in class, changes in children's behavior at home, and the participant's overall evaluation of the program. These data indicate that for one caregiver, this level of intervention was not matched appropriately to the level of severity of problem behavior the child demonstrated in the home. The highest percentage of responses endorsed by caregivers as being in the *Disagree* or *Strongly Disagree* categories were on items related to caregivers' ability to effectively implement program strategies in the home and the subsequent lack of improvement in child behavior following participation in the program.

Table 24

Ratings of Participant Satisfaction with the *HOT DOCS*© Training Program

	Strongly Agree		*Agree*		*Disagree*		*Strongly Disagree*	
	n	%	*n*	%	*n*	%	*n*	%
The *HOT DOCS*© program was beneficial to my family	89	78	22	19	3	3	0	0
The presenter(s) were knowledgeable and effective in communicating this topic	106	93	8	7	0	0	0	0
I am able to utilize these strategies with my children	88	77	22	19	3	3	1	1
The Parenting Tips are beneficial to me	92	82	17	15	3	3	0	0
The Special Play Activities promoted interactions with my child	71	63	40	36	1	1	0	0
The information I learned in *HOT DOCS*© has changed my parenting practices	73	64	36	32	4	4	0	0
HOT DOCS© strategies have positively impacted my child's behavior	70	62	38	34	4	4	1	1
Overall, the *HOT DOCS*© program met my expectations	81	71	30	26	2	2	1	1

Note.: N = 114

Thematic Analysis of Free-Response Data

Table 25 contains the themes that emerged from caregivers' answers to free-response question #1 on the survey, "How are you using the information you learned in *HOT DOCS*©?" Ten participants handed in a survey, but did not respond to this particular item, resulting in an *N* of 104 for this item. As is shown, the following themes emerged from caregivers' responses: use of a specific skill, problem solving behavior, sharing information with others, improved relationship with child/others, change in parenting attitude, and improved communication with child/others.

Table 25

How are you using the information you learned in *HOT DOCS*©?

Response Theme/Category	Frequency	Endorsement Rate %
Use of a specific skill	73	70.2
Problem solving behavior	16	15.4
Share information with others	14	13.5
Improved relationship with child/others	9	8.7
Change in parenting attitude	5	4.8
Improved communication with child/others	2	1.9

Note. n = 104

The majority of participants (70.2%) endorsed responses falling within the theme of using a specific skill. Verbatim responses of using a specific skill include "doing my best to apply what I learned as often as possible," "we are using these methods to change/prevent negative behavior," "we have used calm voice and positive words and it does work," "to teach them how to do routines and rituals," "we mostly use prevention techniques," and "implemented a timer at bed time and gave warnings." Refer to Table 26 for sample verbatim responses from other themes identified for this item.

Table 26

Sample Verbatim Responses for Item #1: How Are You Using Information You Learned in *HOT DOCS*©?

Response Theme/Category	Example Parent Response
Use of a specific skill	Doing my best to apply what I learned as often as possible We are using these methods to change/prevent negative behavior We have used calm voice, positive words and it does work To teach them how to do routines and rituals We mostly use prevention techniques Implemented a timer at bed time and gave warnings
Problem solving behavior	I am better able to deal with problem behavior by understanding why Using behavior chart to help deal with child's defiant behavior To problem solve my child's behavior We use the charts, look for triggers, identify behavior function and consequences
Share information with others	I am also sharing this information with family, friends, and peers I am the grandfather, do not live with child, but have been able to guide my daughter in dealing with him I have talked to a lot of people about this Teaching it to my interns
Improved relationship with child/others	To have a calmer, happier home Helped me to interact in a positive way with my son To make me better in the way I interact with my children This has really changed the way I parent
Change in parenting attitude	We have changed our attitudes as parents To feel more in control To help reduce levels of frustration Totally changed the way I see my son
Improved communication with child/others	Communication with my daughter has improved as we share what we are learning Improving communication between myself and my son

Note: n = 104

Table 27 contains the frequencies and percents of responses that emerged from caregivers' answers to question #2 on the survey, "Have you shared information from *HOT DOCS*©?" Participants were instructed to check the boxes of all people with whom they had shared information. Approximately 95% of participants (n = 109) indicated that they had shared information from *HOT DOCS*© with their spouse, friends, and/or other family members. Approximately 25% of the participants (n = 29) indicated sharing information with a professional, such as an early interventionist, therapist, or teacher. Less than 15% of participants (n = 17) reported sharing information with someone "other" than the options listed. Verbatim examples of "other" people with whom participants shared information included elementary school administrators, clients of child welfare system who are reunited with children, case worker for foster children, co-workers, youth at church program, and parents of children at a daycare class. Less than 10% of participants (n = 7) indicated that they had shared information from *HOT DOCS*© with their pediatrician.

Table 27

Have you shared the information from *HOT DOCS*© with? Check all that apply.

	Frequency	Percent
Spouse or partner	80	70.2
Friends	76	66.7
Other family members	69	60.5
Interventionist, therapist, or teacher	29	25.4
Other	17	14.9
Pediatrician	7	6.1

Note. n = 114

Table 28 contains the themes that emerged from caregivers' responses to prompt #3 on the survey, "If you have shared information from *HOT DOCS*© with others, please describe how they have benefited from this information." A total of 86 participants

responded to this item. As is shown, the following themes emerged from caregivers' responses: increased knowledge, use of specific skills, no knowledge of benefits to others, others wanting to enroll in *HOT DOCS*©, support or positive feedback for caregivers' use of new parenting skills, others wanting more information.

Table 28

If you have shared information from *HOT DOCS*© with others, please describe how they have benefited from this information?

Response Theme/Category	Frequency	Endorsement Rate %
Increased knowledge	29	33.7
Use of specific skills	23	26.7
Don't know how others have benefited	13	15.1
Want to enroll in *HOT DOCS*©	12	14.0
Support or positive feedback for new parenting skills	10	11.6
Want more information	7	8.1

Note. n = 86

Approximately 33% of participants (n = 29) reported that those with whom they shared information benefited by increasing their knowledge. Approximately 25% of participants (n = 23) reported others benefiting by learning and using specific skills. Verbatim responses of increased knowledge included: "the teacher likes to get new information to use with the class," "friends ask what we learned each week," "my daughter is using some information in the school setting," and "it helped my parents with their interaction with my son." Verbatim responses of using a specific skill included: "my Mom tried to use calm voice and positive words," "my husband has learned to control his emotions and stay calm," "they love the tips," "more aware of negative words, using timer for taking turns with siblings." Refer to Table 29 for sample verbatim responses from other themes identified for this item.

Table 29

Sample Verbatim Responses for Item #3: Describe How Others Have Benefited from *HOT DOCS*© Information You Shared.

Response Theme/Category	Example parent response
Increased knowledge	The teacher likes to get new information to use with the class Friends ask what we learned each week My daughter is using some information in the school setting It helped my parents with their interaction with my son
Use of specific skills	My Mom tried to use calm voice and positive words My husband has learned to control his emotions and stay calm They love the tips More aware of negative words, using timer for taking turns with siblings
Don't know how others have benefited	Too soon to tell I don't know if anything has been utilized I am unable to determine the benefits Not sure
Want to enroll in *HOT DOCS*©	They called to sign up for class They would like to come to the program, even those without children They called to sign up for the class My 3 friends are going to come to *HOT DOCS*©
Support or positive feedback for new parenting skills	They give me positive feedback Has helped them to reinforce what we're trying to do at home My spouse and I talk about how things work or don't work Friends who have offered our family support
Want more information	Will look into taking a class for special needs child They get excited and want information They show interest and curiosity It gave them "cause for pause" and they have asked more questions about my "school"

Note: n = 86

Table 30 contains the themes that emerged from caregivers' answers to free-response question #4 on the survey, "What can we do to improve *HOT DOCS*©?" A total of 87 participants responded to this item. The following themes emerged from caregivers' responses: nothing/fine as it is, more time for instruction/training, changes to location or scheduling, train more people, more video vignettes/scenarios/examples, changes to food, specify training by child's age or disability, involve children/families, and provide additional resources.

Table 30

What can we do to improve *HOT DOCS*©?

Response Theme/Category	Frequency	Endorsement Rate %
Nothing, fine as is	36	41.4
More time	20	23.0
Changes to location, scheduling	9	10.3
Train more people	8	9.2
More video vignettes, scenarios, examples	7	8.0
Changes to food	5	5.7
Specify training by child's age or disability	4	4.6
Involve children/families	3	3.4
Provide additional resources	3	3.4

Note. n = 87

Approximately 40% of the participants who responded (n = 36) indicated that no changes to the *HOT DOCS*© program were necessary. Verbatim responses within this theme included: "keep up the good work," "don't change a thing, it's perfect," "not much room for improvement," "really can't think of anything at the moment, I'm really happy with how the course went," and "the program is excellent at the moment." Refer to Table 31 for sample verbatim responses from other themes identified for this item.

Table 31

Sample Verbatim Responses for Item #4: What Can We Do To Improve *HOT DOCS©?*

Response Theme/Category	Example parent response
Nothing, fine as is	Keep up the good work We really appreciate your time and training
More time	Make-up classes Add more hours so that we can get more in-depth Group class follow-up 3 to 6 months later
Changes to location, scheduling	Classes in south Tampa Wanted class during the day so my wife could attend Bring *HOT DOCS©* to a community center or school location
Train more people	Come to schools and teach EEIP and ASD teachers Train more students so more classes can be offered
More video vignettes, scenarios, examples	Bring more videos of successful parents Have us videotape a typical day and use it in class to allow group to analyze behavior
Changes to food	Keep cookies away! Offer a variety of meals each week Better drinks and softer bread for sandwiches
Specify training by child's age or disability	Felt the course was geared for younger children Majority of topics seemed to be directed to individuals with the ability to communicate
Involve children/families	After the course I want parents and children to meet Give the children the opportunity to come to class
Provide additional resources	Handout any valuable websites, like for healthier snacks or support groups Give more material about other programs like TEACCH
Miscellaneous (responses given by only one participant)	Offer email to address questions during course Offer way to receive additional support if needed after course ends Provide child care Give focus to healthy punishments

Note: n = 87

Table 32 contains the themes that emerged from caregivers' answers to free-response question #5 on the survey, "What did you value most?" A total of 102 participants responded to this item. The following themes emerged from caregivers' responses: acquiring skills; support and interaction with other caregivers; instructors' knowledge, attitude, and support; provision of materials; problem solving skills; homework, weekly review, and validation of current parenting skills and abilities.

Table 32

What did you value most?

Response Theme/Category	Frequency	Endorsement Rate %
Acquiring specific skills	63	61.8
Support and interaction with other caregivers	20	19.6
Instructors' knowledge, attitude, support	14	13.7
Provision of materials	13	12.7
Problem solving skills	13	12.7
Homework, review weekly	5	4.9
Validation of current parenting skills/abilities	4	3.9

Note. n = 102

The majority of the participants who responded to this item (62%) indicated that they valued specific skills they acquired the most. Verbatim responses within this theme included: "teaching about calmness and timers," "activities each week," "teach my son positive words," "I learned new techniques that really worked," "the preventions that I can put in place to hopefully avoid melt downs and behavior problems." Refer to Table 33 for sample verbatim responses from other themes identified for this item.

Table 33

Sample Verbatim Responses to Question #5: What Did You Value Most?

Response Theme/Category	Example parent response
Acquiring specific skills	Teaching about calmness and timers I learned new techniques that really worked
Support and interaction with other caregivers	Listening to other people share similar situations they are going through Positive support from others living in the same situation as our family
Provision of materials	Obtaining the materials for the special play times, a nice surprise Binder with notes The signs as a reminder of the sessions
Problem solving skills	Knowing that their behavior is to get or get out of something Learning about how to identify the function of behavior, triggers, consequences, etc.
Validation of current parenting skills/abilities	Confirmation of some techniques I was already using Learning that I'm not doing a terrible job, this all takes work
Instructors' knowledge, attitude, support	How understanding the instructors were to the problems we were having Attitude of teachers Having a professional intervene Knowledgeable facilitators of the class
Homework, weekly review	Activities each week Tasks to do every week The review of homework
Miscellaneous (responses given by only one participant)	It was free Based on adult learning principles, not too much per session Relaxed atmosphere, structure of the class Course was very well linked, one step requires the next and so on

Note: n = 102

Table 34 contains the themes that emerged from caregivers' answers to free-response question #6 on the survey, "What suggestions do you have for future *HOT DOCS*© trainings?" A total of 71 participants responded to this item. The following themes emerged from caregivers' responses: more time for instruction; nothing, the program is fine as it is; specify training by child's age or disability; involve children and families; train other professionals; more movies, examples, and scenarios; provide additional resources; offer future support or contact methods; changes to food; more relaxation training; and changes to scheduling or location.

Table 34

What suggestions do you have for future *HOT DOCS*© trainings?

Response Theme/Category	Frequency	Endorsement Rate %
More time	21	29.6
Nothing, fine as is	18	25.4
Specify training by child's age or disability	7	9.9
Involve children/families	6	8.5
Train other professionals	6	8.5
More movies, examples, scenarios	4	5.6
Provide additional resources	3	4.2
Offer future support, contact methods	3	4.2
Changes to food	2	2.8
More relaxation training	2	2.8
Changes to scheduling, location	2	2.8

Note. n = 71

Nearly 30% of participants (n = 21) indicated that the program would benefit from increasing the time for training and instruction. Approximately 25% of participants (n = 18) responded that no improvements can or should be made to *HOT DOCS*©. Verbatim responses of more time for instruction included: "add more hours of classes so that we can get more in depth," "make classes ½ day sessions," "have more classes," and "add another class several months later when suggestions are put into practice and

evaluate results." Verbatim responses of no recommended changes included: "great job, not room for much improvement," and "don't change it, doing a good job," "I am really happy with how the course went." Refer to Table 35 for sample verbatim responses from other themes identified for this item.

Table 35

Sample Verbatim Responses to Question #6: What Suggestions Do You Have for Future *HOT DOCS*© Trainings?

Response Theme/Category	Example parent response
More time	Have more classes Add another class several months later
Nothing, fine as is	Great job, not room for much improvement Don't change it, doing a good job
Specify training by child's age or disability	More information about young, nonverbal children Break up the class with children with different problems
Involve children/families	Be able to bring children Reunions or classes for parents and children
Train other professionals	Expand out to provide trainings to daycares and schools Doctors, teachers and daycare workers should attend
More movies, examples, scenarios	Bring videos from home to share and analyze Bring more videos about successful parents
Provide additional resources	Have a lit of printed web sites referenced for handouts Resources to take home
Offer future support, contact methods	Perhaps a way to continue to communicate with previous attendees, like a website or chat forum Do you have future support? 1-800-# or a website?
Changes to food	Change food every class If there's going to be cookies, maybe milk
More relaxation training	Do the relaxation training nightly 20 minutes of relaxation instead of 10
Changes to scheduling, location	Bring training to Brandon area Classes during the day
Miscellaneous (responses given by only one participant)	Speakers to hear videos playing Provide cue cards for parents to use at home

Note. n = 71

CHAPTER 5

Discussion

Overview

In response to the increasing number of young children displaying early-emerging challenging behavior, professionals have increased their efforts to find evidence-based interventions to address child and caregiver needs. The current study served as a preliminary investigation of caregivers' perceptions of the effectiveness of the *Helping Our Toddlers Developing Our Children's Skills (HOT DOCS©)* parent training program. The study evaluated the impact of specific components of the parent training program on caregivers' knowledge and attitudes and their perceptions of targeted children's behavior. Results of the study will be used to modify and improve the *HOT DOCS©* program.

Demographic Characteristics

Rates and Patterns of Caregiver Attendance

Rates and patterns of caregiver attendance and attrition were analyzed and compared with findings from previous studies of group-delivered behavioral parent training. Overall patterns of attendance and rates of attrition found in this study were similar to those found in previous research (Eyberg et al., 2001; Feinfield & Baker, 2004; Kazdin, 1997; Sanders et al., 2000). Of the 189 caregivers attending the first of six sessions of *HOT DOCS©* training, 146 completed the program (e.g., attended three or more sessions), resulting in an attrition rate of 23%. Eyberg and colleagues (2001) reported similar rates of attrition in an evaluation of the *Parent-Child Interaction Therapy*

(PCIT) intervention. Specifically, of the original twenty participants, 13 completed the training, resulting in a 30% attrition rate. Fienfield and Baker (2004) reported lower levels of attrition in an evaluation of a multimodal, manually guided group treatment for parents of children with challenging behavior. Of the 56 caregivers enrolled in the program four dropped out of the treatment group and five dropped out of the waitlist control group, resulting in an overall attrition rate of 16%.

Several previous studies of group parent training interventions have reported significantly lower attrition rates than found in this study (Barkley et al., 2000; Reid et al., 2001; Webster-Stratton & Hammond, 1997). Several of the programs reporting low rates of caregiver drop-out have provided participants with incentives for attendance and completion of the program. For example, in an evaluation of the *Incredible Years* parent training program, Reid, Webster-Stratton, and Beauchaine (2001) reported attrition rates of less than 10%. Parents participating in this study were given $50 for participation in each pre-, post-, and follow-up assessment. Other training programs offered individualized, child-focused intervention services to program completers (Barkley et al., 2000; Sanders, 1999), which seemed to serve as a non-tangible incentive for attendance.

Attrition rates reported in studies of early intervention utilizing the principles of positive behavior support (PBS) also have reported lower rates of attrition than were found in this study (Buschbacher et al., 2004; Vaughn et al., 2005). However, rates of attrition in PBS intervention research should be interpreted with caution when comparing these studies with other intervention program research. According to results of a meta-analysis of PBS research, the majority of PBS interventions (85%) have been delivered in an individual, one-on-one format with a parent or caregiver and the interventionist

(Conroy et al., 2005). Other studies of interventions based on PBS principles reporting no participant attrition were conducted using a single-subject design with teachers or daycare workers as part of their daily responsibilities (Duda et al., 2004; Fox & Little, 2001). Additionally, most PBS interventions are designed for the individual child or family. Consequently, the intervention programs are designed to address the specific needs, concerns, and strengths of individual families and are not intended for delivery to multiple children or families at once. In summary, rates of attendance and attrition found in this study are comparable to other group-delivered, behavioral parent training programs with the exception of those studies providing incentives for participation.

Comparison of Caregiver Demographics with Hillsborough County Demographics

Demographic information for the caregivers serving as participants in this study was compared with local demographic information provided by the United States Census Bureau for Hillsborough County. According to the results of this study, the participant sample consisted of 15% fewer caregivers reporting their ethnicity as Caucasian (44% versus 59%), 11% fewer caregivers reporting their ethnicity as Black/African American (5.5% versus 16.3%), and 14% more caregivers reporting their ethnicity as Hispanic (35% versus 21.2%) than adults residing in Hillsborough County in 2005 (United States Census Bureau, http://quickfacts.census.gov/qfd/states/12/12057.html). These results suggest that the *HOT DOCS*© program provided early intervention services to caregivers from a racial/ethnic group and SES category, which have been underserved by previous parenting programs, including Hispanic and/or Spanish-speaking caregivers and low-income caregivers. However, these results also suggest a disproportionately low percentage of Black/African American caregivers participating in the *HOT DOCS*©

program. Preliminary analysis of the caregivers signing up to participate in the program but not completing training (e.g., drop-outs) did not indicate differential rates of attrition for caregivers reporting their race/ethnicity as Black/African American. The underrepresentation of Black/African American caregivers in the *HOT DOCS*© program is likely related to the lack of families from this race/ethnic category who self-refer and/or are referred by professionals to participate. The high percentage of sample participants reporting their race/ethnicity as Hispanic as compared to local norms is likely explained by the provision of *HOT DOCS*© classes in Spanish.

In terms of level of education attained, participants in this study reported similar numbers of high school graduates (89% versus 81%), twice the number of college graduates (53% versus 25%), and three times the number of graduate degrees (31% versus 12%) according to census data from 2000. Previous studies of parenting programs have reported similar patterns of higher than expected educational attainment (Fienfield & Baker, 2004; Hartman, Stage, & Webster-Stratton, 2003). These studies have hypothesized that the higher mean educational levels may be explained by the additional financial and social supports available to families with higher levels of educational attainment. Researchers have suggested that these resources allow parents to participate in and complete training programs, while parents with lower educational attainment are often unable to attend and complete training sessions due to issues associated with socioeconomic status, such as lack of transportation, childcare, and time.

The use of type of insurance as an indicator for socioeconomic status (SES) in this study prohibits precise comparisons with local population statistics, which report SES using ranges of annual household income. However, general comparisons of the

proportion of the study sample reporting having Medicaid or no insurance, which were response categories used by the program developers to indicate low-SES, were compared with Hillsborough County estimates of adults falling below the poverty line (US Census Bureau, 2000). Approximately one-third, (31%) of *HOT DOCS*© participants reported having no insurance or Medicaid insurance compared to 12% of adults in Hillsborough County classified as low-SES. This comparison indicates that the *HOT DOCS*© parent training program was provided to a higher percentage of low-SES families than would have occurred simply by chance. Since previous research has shown that children of parents who are considered low-SES or low-income have a greater chance of developing more severe levels of challenging behavior (Gross et al., 1999; Keenan & Wakschlag, 2000; Qi & Kaiser, 2003), the large proportion of participants falling within this category can be considered a positive finding.

Comparison of Child and Caregiver Demographics with Previous Studies

Demographic information for the caregivers serving as participants in this study also was compared with demographic information for participant samples from previous research of group parent training programs. Most of the existing research on parent training programs has focused on female caregivers, specifically mothers of children with problem behavior (Bagner & Eyberg, 2003; McNeill, Watson, Hennington, & Meeks, 2002; Phares, Fields, Kamboukos, & Lopez, 2005; Reid et al., 2001). The gender and relationship with target child of participants in this study differs notably from previous research on parent training interventions, specifically by encouraging participation of fathers, non-related caregivers, and professionals. Participants in the sample were 68% female and 32% male, including 54% mothers, 29% fathers, 8% professionals (i.e., early

interventionists, service coordinators), and 7% grandparents. In comparison, research on the *Incredible Years* parent training program indicates the majority of participants were mothers (98-100% mothers, small number of grandmother/aunt and fathers), including three studies with 100% female participants (Hartman et al., 2003; Reid, Webster-Stratton, & Baydar, 2004; Reid et al., 2001). One study on the *Incredible Years* program did report a significant proportion (43%) of fathers as participants (Webster-Stratton & Hammond, 1997). Research on the effectiveness of the PCIT parent training intervention has been conducted mainly with mothers or other female caregivers (Boggs et al., 2004; Hood & Eyberg, 2003) with the exception of a study specifically designed to target father's participation in PCIT (Bagner & Eyberg, 2003). The majority of studies using the targeting children with ADHD have not reported data specifying the gender of parents and caregivers participating in training programs (Barkley et al., 2000; Weinberg, 1999). However, one study of the Defiant Children Parenting Program reported 100% of participants being mothers (Anastopoulos et al., 1993). In contrast to the majority of studies of behavioral parent training including the current study, investigations of the Triple P-Positive Parenting Program (Sanders, 1999) have reported participation by both parents of target children (Bor, Sanders, & Markie-Dadds, 2002; Sanders et al., 2000). Research on parenting interventions using the principles of positive behavior support (PBS) have used mostly single subject designs conducted with mothers or female teachers (Conroy et al., 2005; Duda et al., 2004; McNeill et al., 2002).

Participant race/ethnicity for this study was compared with demographic information from other parent training programs, including the *Incredible Years* (Webster-Stratton, 2001), *PCIT* (Eyberg, 1988), *Triple P-Positive Parenting Program*

(Sanders, 1996), *Defiant Children Parenting Program* (Barkley et al., 2000) and others. Compared with participants completing other training programs, the caregiver sample completing *HOT DOCS*© training was composed of fewer White caregivers (44% versus an average of 51-98%) and more non-White caregivers (56% versus an average of 2-49%) (Barkley et al., 2000; Fienfield & Baker, 2004; Sanders et al., 2004). Specifically, the *HOT DOCS*© participant sample included nearly five times the percentage of Hispanic caregivers (35%) as previous studies. Similar to findings from the current study, one previous study of *PCIT* had a notably larger percentage of Hispanic participants compared to the majority of existing parenting research (McCabe, Yeh, Garland, Lau, & Chavez, 2005). Just as *HOT DOCS*© was translated to Spanish to increase Hispanic caregiver participation, McCabe and colleagues (2005) modified and translated the original *PCIT* program to meet the unique needs of Mexican-American families.

Preexisting diagnoses of target children of participants in this study also were compared with demographic information from previous research. The majority (66%) of target children in this study did not have a preexisting medical, psychological, or behavioral diagnosis as reported by caregiver participants at the time of participation. In contrast, the majority of previous studies of parent training programs have specified inclusion criteria requiring that target children have preexisting mental, emotional or behavioral diagnoses to participate in study. Few published, evidence-based interventions target parents of children with non-clinical levels of challenging behavior (Lundahl et al., 2006; Maughan et al., 2005; Schumann et al., 1998). Several investigations of the *Incredible Years* parent training program and several studies of *PCIT* specify that children must have preexisting diagnosis of Oppositional Defiant Disorder (ODD) and/or

Conduct Disorder (CD) (Harman, Stage, & Webster-Stratton, 2003; Webster-Stratton & Hammond; 1997). Parent training research conducted by Barkley and colleagues (2000) stipulates that all children included in the studies meet diagnostic criteria for ADHD. In the field of PBS, the majority of parent training research has been conducted with parents of children with clinical diagnoses of autism spectrum disorders or intellectual deficits (Conroy et al., 2005). These findings indicate that the *HOT DOCS©* parent training program provided early intervention services as preventative measures for children exhibiting non-clinical levels of challenging behaviors. As indicated by several decades of research, intervention provided before challenging behaviors reach chronic and severe levels is more likely to effectively treat and prevent negative lifelong emotional and behavioral impact (Marchant et al., 2004; Walker et al., 1998; Webster-Stratton, 1998).

Caregiver Knowledge

Research Question 1. What is the impact of participation in the 6-week *HOT DOCS©* parent training program on caregiver knowledge as measured by pre- and posttest scores on the *HOT DOCS© Knowledge Test*?

Results of this study indicated a significant increase in participants' scores on the *HOT DOCS© Knowledge Test* from pretest to posttest. Although the difference in mean score from pretest to posttest differed by fewer than two correct answers, the effect size of the statistical difference was large, indicating significant and meaningful increases in the number of correct answers provided by participants. Several features of the *HOT DOCS© Knowledge Test* prevent further interpretation of the increase in scores. Specifically, due to the small number of items on the test (e.g., 20 items), the lack of reliability and validity data for the measure, and the lack of variation in response type

(e.g., all true/false), further analyses are restricted. Despite these limitations, the items used on the test represent specific concepts, skills, or practices guided by the theoretical framework of the *HOT DOCS*© parent training program. Knowing and understanding these skills and concepts may be considered ideal outcomes of the parent training program. Therefore, an increase in the number of items correct may indicate successful delivery of skills and concepts.

Changes in caregiver knowledge as indicated by these results are similar to outcomes reported by previous research of parent training interventions (Anasopoulos et al., 1993; Weinberg, 1999). Anastopoulos and colleagues (1993) identified changes in parent knowledge as a dependent variable in their investigation of a six-week parent training program for parents of children with ADHD. Results of their study also reported significant increases in parent knowledge from pre- to posttest using a knowledge test created by the researchers specifically for this purpose. Weinberg (1999) also reported significant increases in parent knowledge of the features of ADHD and behavioral management strategies following participation in a behavioral parent training program.

Caregiver Perceptions of Severity of Child Behavior

Research Question 2. Do caregivers perceive their child as having more problem behavior than a normative sample prior to participation in the 6-week parent training program?

Participants were expected to report high levels of perceived challenging behavior in target children. Expectations of high levels of problem behavior were based on the method of participant recruitment. Caregivers either self-referred to the program after seeing community advertisements or hearing about the program from friends or were

referred to the program following a comprehensive psychoeducational evaluation of their child.

Previous studies of parent training programs for children with challenging behavior have used parent reported data such as the Child Behavior Checklist (CBCL; Achenbach, 2001) and Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999). Many studies have cited inclusion criteria for participation in the study, stipulating that caregivers must have children who score in the clinically significant range on these measures (Bagner & Eyberg, 2003; Barkley et al., 2000; Harman, Stage, & Webster-Stratton, 2003; Webster-Stratton & Hammond; 1997). Because many of the published studies of parent training programs have inclusion criteria such as these, the overall frequencies of caregivers' reported perceptions of child behavior as being more severe and problematic is higher than expected for a normative sample of the general population. Although the current study did not base participant inclusion on pre-test behavior rating scale scores, it was hypothesized that most of the caregivers seeking to participate in the program would report that their children had more severe levels of problem behavior than a normative sample.

Results of this study supported this hypothesis by indicating that participants reported significantly more severe levels of child problem behavior at pre-test than was predicted for a normative sample of the population. Statistical analyses revealed that nearly twelve times as many caregivers in the participant sample perceived their child's problem behaviors to be within the clinically significant range on both the Internalizing and Externalizing subscales of the CBCL (Achenbach, 2001) than was expected given a normal distribution. These results indicate that the majority of caregivers who elected to

participate in *HOT DOCS*© perceived their children as having clinically significant levels of problem behavior prior to beginning the training program.

Research Question 3. Do caregivers perceive their child as having less adaptive behavior than a normative sample prior to participation in the 6-week parent training program?

As with caregiver perceptions of severity levels of child problem behavior, it was expected that caregivers would also perceive their children as having lower than expected levels of adaptive behavior. Although caregivers often cite challenging behavior as their primary concern, children likely have comorbid deficits in adaptive or prosocial behaviors (Conroy et al., 2005). Despite the lack of available research using parent perceptions of children's adaptive behavior as inclusion criteria or outcome measures, initial studies have indicated that high levels of problem behavior interfere with children's ability to develop and maintain appropriate levels of adaptive behavior (Carr et al., 2002; Conroy et al., 2005; Dunlap, 2006; Fox, Dunlap, & Powell, 2002). Therefore, it was expected that caregiver participants would report lower levels of child adaptive behavior than expected in a normative sample of the population.

One area of parenting research that has included measures of adaptive behavior is positive behavior support (PBS). Most PBS interventions use adaptive or prosocial behaviors as outcome measures, as these interventions are designed to teach and reinforce adaptive replacement behaviors in place of challenging behaviors (Dunlap, 2006). However, these studies often do not report pre-intervention levels of adaptive behavior or pretest/posttest comparisons (Conroy et al., 2005). Instead, they generally report post-intervention levels of adaptive behaviors or rate of skill gain.

Results of the current study supported the hypothesis by indicating that the sample participants reported significantly more severe deficits in child adaptive behavior at pre-test than were predicted for a normative sample of the population. Statistical analyses revealed that nearly ten times as many caregivers in the participant sample perceived their child's adaptive behaviors to be within the clinically significant or deficit range on the Conceptual, Social, and Practical subscales of the ABAS-II (Harrison & Oakland, 2003) than was expected given a normal distribution. These results indicate that the majority of caregivers who elected to participate in *HOT DOCS*© perceived their children as having clinically deficient levels of adaptive behavior prior to beginning the training program.

Changes in Child Problem & Adaptive Behavior

Research Question 4. To what extent do caregivers perceive a decrease in child problem behavior following parent participation in the 6-week parent-training program*?*

Comparisons of pretest and posttest caregiver ratings of child problem behavior using the CBCL have frequently been used in research on behavioral parent training programs (Barkley et al., 2000; Cartwright-Hatton, McNally, & White, 2005; Connolly, Sharry & Fitzpatrick, 2001; Feinfield & Baker, 2004; Hartman et al., 2003; Nixon et al., 2003; Reid et al., 2001; Thompson, Ruma, Schuchmann, & Burke, 1996; Webster-Stratton, 1998; Webster-Stratton & Hammond, 1997). Most studies reported significant decreases in the severity of child behavior from pretest to posttest as reported by caregivers.

Despite frequent use of the CBCL in behavioral parent training research, significant limitations have been identified by the majority of researchers using CBCL as

an outcome measure. The primary limitation is that the CBCL measures child behaviors through parent report and not through direct observation (Connolly, Sharry & Fitzpatrick, 2001; Feinfield & Baker, 2004; Thompson et al., 1996; Webster-Stratton, Reid, & Hammond, 2004). Thus, pretest and posttest comparisons might really be measuring increases in parent perceptions of competence, increases in parent perceptions of social support or normality of child problem behavior, or decreases in parenting stress and not actual changes in child behavior. Several studies have overcome this limitation by supplementing the use of parent report ratings of child behavior with direct observations of child behavior, which is thought to provide a more accurate measure of changes in child problem behavior by eliminating the potentially confounding self-report bias (Barkley et al., 2000; Hartman et al., 2003; Nixon et al., 2003; Reid et al., 2001).

Results of this study indicate significant reductions in the severity of child problem behavior as perceived by caregivers. It could not be determined from the data available whether child behavior actually improved or, as suspected in previous studies, changes in scores were due to reductions in parent stress and increases in parenting competency. Results of the pretest/posttest comparisons made in this study should be interpreted with caution due to a low return rate of posttest scales (<25%). Information about which caregivers returned posttest rating scales (e.g., caregivers of children whose behavior drastically improved or those whose behavior remained the same or worsened) may better explain these results. It may be beneficial to modify data collection procedures in the future to ensure a more comprehensive return rate of posttest rating scales, such as offering a booster session during which scales could be completed or offering incentives for completing and returning rating scales.

Research Question 5. To what extent do caregivers perceive an increase in child adaptive behavior following parent participation in the 6-week parent-training program?

Using a measurement tool with a very limited research base, such as the ABAS-II or any other parent-report measure of adaptive behavior precludes the development of evidence-based hypotheses for this research question. At present, there are limited published data available to determine whether the ABAS-II is sensitive to short-term gains in adaptive behavior. Despite this lack of existing research, significant gains across all adaptive skill areas were expected based on theories of behavior and positive behavior support (Carr et al., 2002; Conroy et al., 2005; Dunlap et al., 2003). Expectations also were based on the theoretical framework of *HOT DOCS©,* which focuses on teaching children positive, prosocial replacement behaviors and specifically training parents to shift their focus and attention to praising and rewarding positive behavior (Armstrong, Hornbeck et al., 2006). Larger changes in rating scale scores in adaptive skills from pre-test to posttest were predicted compared to behavior problems because early emerging behavior problems have been shown to be stable over time and somewhat resistant to intervention (Campbell & Ewing, 1990; Coie & Dodge, 1998; Dishion et al., 1995; Kazdin, 1995; Moffitt, 1993; Reid, 1993; Tremblay 2000).

Results of this study indicated non-significant levels of perceived change in the severity of deficits in child adaptive behavior on the part of caregivers. It could not be determined from the data available whether child adaptive behavior actually did not change from pretest to posttest or whether other confounding variables, such as low return rate of posttest scales (<25%) could explain the non-significant findings. Differential return rates may be explained by actual changes in children's adaptive

behavior. For example, caregivers whose children increased their adaptive skills may have been perceived as no longer having a problem, in which case caregivers may have had less motivation to complete lengthy rating scales (Barkley et al., 2000). Caregivers of children whose behavior did not improve or worsened following participation in the program may also have avoided completing and returning the posttest rating scales. Alternative measurement instruments for adaptive skills that are more caregiver-friendly (e.g., fewer items) and have more sound psychometric properties should be researched.

Caregiver Skills at Home

Research Question 6. What is the frequency and ease of use of the weekly parenting tips as reported by caregivers? Is there a relation between frequency of use and ease of use as measured by the *HOT DOCS© Tip Tracker* sheets?

Participant caregivers were expected to report high frequencies of skill use, since skills were designed to fit into existing family routines and to be compatible with most parenting styles (Armstrong, Lilly, & Curtiss, 2006). It was also expected that different skills would be perceived by caregivers as more difficult to implement at home than other skills. Specifically, it was expected that the skills *Use Positive Words*, *Catch Them Being Good*, and *Take 5 for Yourself* would be rated by caregivers as being easier to implement at home than the skills *Use Calm Voice*, *Use Preventions*, and *Follow Through*.

Results of this study indicated that caregivers reported high overall frequencies of use of each skill as well as differential rates of ease for various skills. However, the differential ratings of ease or difficulty of use did not follow the expected pattern. Caregivers reported *Catch Them Being Good* as easiest to use, followed by *Use Preventions*, *Use Calm Voice*, *Follow Through*, and *Use Positive Words*. Follow-up

interviews with caregivers may be beneficial to investigate why some of the skills were more difficult to implement at home than other skills.

In terms of the relation between frequency and ease of skill use, caregivers were expected to report lower levels of difficulty implementing skills at home the more days they reported using the skill. However, results of statistical analyses revealed no significant relationships between frequency of use and ease of use. These findings may be explained by the restricted range of ratings of ease or difficulty (e.g., choices only 1 through 4) and the restricted range of days it was possible for caregivers to use skill (e.g., seven days maximum). Another possible confounding variable is the differential number of caregivers completing weekly *Tip Tracker* sheets. Fewer participants completed and turned in *Tip Tracker* sheets for each session than the previous sessions (i.e., 106 participants completed *Tip Tracker 1*; 93 participants completed *Tip Tracker 3*; 73 participants completed *Tip Tracker 5*).

Results were predicted to show a peak in level of difficulty of skill use during the middle of the week, due to extinction burst of child behavior (Cooper et al., 1987). For example, the first day or two parents used the skill at home it was expected that children would initially be compliant with parent direction. However, once children perceived a change in caregiver behavior, children's challenging behavior was expected to temporarily increase (e.g., testing the limits) and then decrease if caregivers remained consistent in their use of the new skill. Given the behavioral concept of extinction bursts, a hypothesized pattern would be for caregivers to initially report easier use of skills, followed by more difficulty using skills, and then a return to reports of more ease of use by the end of the seven-day period.

Results supported the hypothesized pattern of reported ease or difficulty of use as predicted by the presence of extinction bursts in children's behavior. Four of the five skills followed the expected pattern of reported ease of use, followed by a peak in difficulty, and then a decrease in difficulty. However, caregivers' ratings for each of the four skills that followed this pattern were varied. Caregiver ratings for *Use Preventions* most clearly followed the anticipated pattern. *Follow Through*, *Use Calm Voice*, and *Catch Them Being Good* followed the pattern to a lesser degree. Caregiver ratings for ease of use of *Use Positive Words* did not follow the expected pattern. Instead caregivers rated the skill as being initially more difficult and progressively getting easier throughout the week. The pattern of perceived difficulty of *Use Positive Words* may be explained by the placement of this skill as the first skill assigned as homework in the *HOT DOCS©* program. Caregivers may have reported use of this skill to be more difficult than later skills because they were adjusting to making changes in their overall parenting practices and not necessarily because the skill itself was more difficult to use. Future research should include parent interviews to further investigate the reasons for differences in caregiver perceptions of skill use at home. Future research also should investigate possible relations between reported frequency of skill use at home and changes in caregiver perceptions of severity of child's challenging behavior (i.e., correlation between days used and pretest/posttest scores on CBCL).

Caregivers' Overall Perceptions of the HOT DOCS© Program

Research Question 7. What are caregivers' overall perceptions of the *HOT DOCS©* parent training program as measured by the *HOT DOCS©* Program Evaluation Survey?

Results of a previous evaluation of participant satisfaction with the *HOT DOCS*© program (Armstrong, Hornbeck et al., 2006) using surveys and focus groups indicated that caregivers reported high levels of satisfaction with program. In light of these findings, it was expected that participants in the current study also would report high levels of satisfaction. With few exceptions, the majority of caregivers (95%) indicated that they *Agreed* or *Strongly Agreed* that the *HOT DOCS*© program met their expectations, was beneficial to their families, and positively impacted their behavior as caregivers. The few statements on the survey with which caregivers *Disagreed* or *Strongly Disagreed* related to the ability to implement specific skills at home and the program's impact on child behavior. These findings are not surprising, given that many parent training interventions struggle with accomplishing transfer of skills taught in the classroom to the home setting (Eyber, 1998; Sanders, 1999). In light of the overwhelmingly positive response to these items, those few participants who were not satisfied with the program were provided individual consultation and possible referrals for further assessment and treatment strategies. These results were interpreted as exceptions to a program perceived as effective, rather than proof that the program is not effective.

The majority of caregivers (70%) reported that they were using the skills learned in the program at home or in the community and had shared the information they learned with others (95%), including spouses, family, and friends. When asked to provide suggestions for future *HOT DOCS*© classes, 40% of caregivers answered "Nothing, the program is fine as is," and 25% answered "More time," (e.g., more classes, longer sessions, booster sessions). These results support caregiver ratings of satisfaction with the

program, by indicating that there were no significant changes or improvements that should be made to the program. When asked what they valued most from the training, the majority (60%) of caregivers indicated the specific skills taught in the sessions.

Implications for Practitioners

The results of this study suggest several implications for practitioners. First, the study provided preliminary evidence for the potential effectiveness of the *HOT DOCS*© parent training program as an early intervention technique, allowing practitioners to tentatively add this program to their list of promising treatment strategies for children displaying early-emerging challenging behavior. These findings are consistent with several decades of previous research on other parent training programs in demonstrating the effectiveness of behavioral parent training as an intervention (Eyberg, 1988; Feinfield & Baker, 2004; Kazdin, 1995; Webster-Stratton, 1998). The effectiveness of using a group-delivered parent training program to address early-emerging challenging behavior allows psychologists to serve as indirect service providers or consultants, enabling them to provide information and skills to caregivers, which they can use to problem-solve and address their own children's behavior. The indirect provision of services is in direct contrast with the traditional medical model of service delivery, in which children are referred to a professional, an evaluation is conducted, and depending on the results, the professional directly applies treatment to the child in a one-on-one format. While this traditional treatment model has been shown to be effective in producing desired outcomes it has also been shown to be less cost-effective and have poorer long-term outcomes than group-delivered, consultation model treatment strategies (Kazdin, 1995).

Results of this study also provide practitioners with an early intervention program that has been successful in reaching previously underserved portions of the population, specifically, Hispanic or Spanish-speaking families and caregivers from low SES families. These early findings suggest that the *HOT DOCS*© training program is promising as an effective intervention for Hispanic or Spanish-speaking families mainly because it has been translated into Spanish in both printed and orally delivered presentations (Armstrong, Lilly, Curtiss, Salinas, Chiraboga, & Ortiz, 2006). *HOT DOCS*© has also been made available to a large proportion of low SES families because it funded by a grant from the Children's Board of Hillsborough county. All materials and supplies are provided for caregivers, removing previously identified financial barriers to parent participation in parent training programs (Barkley et al., 2000; Webster-Stratton & Taylor, 2001). Although initially discouraging, the findings in this study identifying the underrepresentation of Black/African American caregivers in the *HOT DOCS*© program also provide practitioners with a specific target for recruiting participants for future *HOT DOCS*© trainings. This might be accomplished through increased advertising and recruitment directly targeted at reaching this racial/ethnic group as well as through making adjustments in scheduling of future classes, such as offering the trainings at locations within the Black/African American community.

Finally, findings from this study provide practitioners with preliminary evidence on the effectiveness of incorporating the principles of PBS into a behavioral parent training program. While previous research has demonstrated the effectiveness of PBS interventions with specific populations (e.g., older children with intellectual disabilities or autism spectrum disorders), the current study has applied PBS techniques to a wider

segment of the population (Buschbacher et al., 2004; Conroy et al., 2005). In contrast with earlier research, the results of this study indicate that providing parents intervention strategies based on the principles of PBS can effectively address early-emerging challenging behaviors in young children with sub-clinical levels of challenging behavior. These results also provide initial support for the use of PBS intervention techniques delivered in a group format, which has not been demonstrated in previous research.

Limitations

This study has several significant limitations. The first is the use of archival data, which does not allow the researcher any control over data collection procedures and the type of data originally collected. The second limitation is the absence of a control or wait-list control group to use as a normative comparison group for the participants who received training. The archival data analyzed were gathered using a pretest-posttest design. This design has several threats to internal validity of the study, including history, maturation, testing, instrumentation, mortality, and regression to the mean. The use of a control group would strengthen the internal validity of future investigations of the *HOT DOCS*© program. A third limitation to this study is the small sample size, which is a component of the pilot study design, but will limit the statistical power of results. A fourth limitation is the low return rate of several outcome measures used, including weekly Tip Tracker sheets and posttest behavior rating scales. Finally, several of the measurement instruments used as outcome indicators were designed by the authors of the *HOT DOCS*© parent training program. There is no evidence of reliability or validity data available that these measures accurately or truthfully measure the constructs they were designed to assess.

Directions for Future Research

Several areas of future research were generated from the results of this study. First, follow-up surveys, possibly through phone interviews, could be conducted to collect further evidence, such as caregiver statements or explanations of behavior, and to investigate patterns of results, such as rates of attendance and attrition, reported ease or difficulty of skill use at home, and caregiver perceptions of child behavior following program completion. For example, researchers should investigate why caregivers sign up for class and do not attend; why caregivers attend one or two sessions but do not complete training; and why a large percent of caregivers did not return posttest rating scale packets. Additional analyses specifically focusing on rates and patterns of attendance in relation to outcome variables should be conducted. For example, did participants who attended specific sessions (e.g., sessions 3, 4 and 5) show greater gains in knowledge or problem solving skills and did they perceive their children's skills as improving more than participants who attended different sessions (e.g., 1, 2, and 6).

Future evaluations of the *HOT DOCS*© program also should incorporate the use of a comparison or control group. Specifically, caregivers on the waiting list could be asked to complete pre-/post- Knowledge tests and pre-/posttest rating scales while waiting for treatment. In order to increase the reliability and validity of findings related to caregiver knowledge, the *HOT DOCS*© *Knowledge Test* should be revised and validated. For example, a panel of experts in child development, PBS, and other related field should evaluate test items, the items should be balanced for true/false responses, and there should be at least four questions per topic area (e.g., child development, positive behavior support).

Another area of future research should focus on a more thorough investigation of the positive behavior support principles incorporated into the *HOT DOCS*© program. Specifically, an outcome measure assessing caregiver satisfaction with and knowledge of the functions of behavior and the problem solving process should be included. This investigation should focus more specifically on to what extent caregivers learn and are able to implement the problem solving process.

Conclusion

Results of this study suggest successful outcomes for caregivers and children participating in the *HOT DOCS*© program, including increases in caregiver knowledge, frequent use of skills at home, high levels of satisfaction with the program, and reductions in the perceived severity of child behavior problems. Results also indicated several modifications that could be made to the program to improve participant outcomes and increase the validity and reliability of program evaluations, including changes to measurement instruments (e.g., knowledge test, adaptive skill measure, evaluation survey) and data collection procedures (e.g., waitlist control group, low rate of return of posttest rating scales). Overall, the *HOT DOCS*© parent training program appears to be a promising early intervention program that could be delivered in group format.

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Appendices

Appendix A

The *HOT DOCS*© Parent Training Curriculum

Session	Topic	Parenting tip homework	Special play activity
1	Early childhood development	Use positive words	Bubbles
2	Routines and rituals	Catch them being good	Reading
3	Behavior and development	Use a calm voice	Coloring
4	Preventing problem behavior	Use preventions	Fun Dough
5	Teaching new skills	Follow-through	Balls
6	Managing parent stress	Take time for yourself	Free choice

Appendix B

Relation between Research Questions and Variables

Research Question	Dependent Variable	Design
What is the impact of participation in the *HOT DOCS*© program on parent knowledge of the principles of behavior, positive behavior support, child development, and parenting practices?	*HOT DOCS*© *Knowledge Test*	Pre- and Posttests
Do child's problem behaviors decrease following parent participation in the 6-week parent-training course?	CBCL	Pre- and Posttests
Do child's adaptive behaviors increase following parent participation in the 6-week parent-training course?	ABAS-II	Pre- and Posttests
What is the frequency and the ease of use of the weekly parenting tips as reported by participant parents and is there a relation between frequency of use and ease of use?	*HOT DOCS*© *Tip Tracker* Forms	Weekly evaluation
What are parents' overall perceptions of their participation in the *HOT DOCS*© parent training program?	*HOT DOCS*© *Program Evaluation Survey*	Posttest

Appendix C

HOT DOCS© Demographics Form (English version)

HOT DOCS©
Demographic Questions

ID Code:			
Mailing Address:	Number/Street/Apt. #: _____ City: _____ Zip code: _____		
Caregiver Gender:	Male	Female	
Caregiver Age:			
Age of referred child:	_____Years _____Months		
Age(s) of your other children: *Please use year, month format for each child.*			
Does your child have health insurance? *Circle one response*	Private insurance	Medicaid	No insurance
What is the name of your child's insurance plan?	_____		
Are you the child's: *Circle one response*	Mother Father Grandmother Grandfather Foster Mother Foster Father	Aunt Uncle Adoptive Mother Adoptive Father Other:_____	
What ethnic group do you identify with? *Circle one response*	African American/Black Caucasian American/White Latino/Hispanic	Asian American Native American/Alaskan Other:_____	
What is your highest level of education? *Circle one response*	Less than high school Completed high school Technical school degree	Two-year college degree Four-year college degree Graduate degree	

Appendix D

HOT DOCS© Demographics Form (Spanish version)

HOT DOCS©
Preguntas Demográficas

ID Código:			
Dirección:	Número/Calle/Apartamento: Ciudad: Código Postal:		
Género del guardian:	Masculino	Femenino	
Edad del guardian:			
Edad de su hijo/a con conducta promblematica	_____Año(s) _____Meses		
Edad de sus otros niños *Especifique años y meses*			
¿Su niño tiene seguro médico? *Seleccione una respuesta*	Seguro Privado	Medicaid	No tiene seguro
¿Cuál es el nombre del seguro del niño?			
¿Cuál es su relación con el niño?: *Seleccione una respuesta*	Madre Padre Abuela Abuelo Madre temporal Padre temporal	Tía Tío Madre Adoptiva Padre Adoptivo Otro:_____	
¿Con cual grupo etnico usted se identifica? *Seleccione una respuesta*	Africo-Americano/Negro Americano caucásico/Blanco Latino/Hispano	Asiático American Nativo Americano/de Alaska Otro:_____	
¿Cuál es el nivel de educación alcanzado? *Seleccione una respuesta*	Educacion primaria o Secundaria incompleta Secundaria completa Carrera Técnical	Dos años de college Cuatro años de college Graduado profesional	

Appendix E

HOT DOCS© Knowledge Test (English version)

HOT DOCS©

Pre-Test Survey

ID Code:_____ Date:_____

1. Developmental milestones refer to the important skills that children should accomplish at expected ages, such as walking and talking.	True	False
2. My child's brain development is affected by both how safe and secure I help him/her feel, and the opportunities I provide him/her for learning.	True	False
3. Observing my child is one way to figure out what my child's problem behavior is telling me.	True	False
4. Positive words refer to children saying "Yes, I will" when requested to do something they may not want to do, like cleaning up their toys.	True	False
5. When children do not follow directions immediately, it is best to ignore them until they do follow the directions.	True	False
6. Problem behavior should be punished immediately so that children will know what they should do.	True	False
7. If I show my child how to do something, he/she will understand my message more clearly than if I just explain it to them.	True	False
8. When reading to young children, it is O.K. to skip the words and talk about the pictures.	True	False
9. Children with delayed development need extra time and practice to learn skills that are important for school.	True	False
10. If my child hits another child, I should immediately spank him/her and say that it is not nice to hit other children.	True	False
11. Sleeping and eating on schedule helps children to behave throughout the day.	True	False
12. Once I understand the function of my child's problem behavior, I can come up with a plan to help my child develop better skills.	True	False
13. The ideal time to intervene with problem behavior is right when it is happening.	True	False
14. Preparing children for outings, such as shopping or visiting family and friends, can provoke problem behavior.	True	False
15. The following things are preventions for problem behavior: timers, busy bags, and first-then board	True	False
16. Children need us to teach them the words to express their feelings.	True	False
17. The way that I respond to my child's behavior will teach my child how to respond.	True	False
18. Children should be praised for following the rules, like helping to clean up toys.	True	False
19. My own stress can affect how I am able to interact with my child, and can interfere with my child's healthy development.	True	False
20. My own stress can affect my physical health and my emotional well-being and my ability to take care of my child.	True	False

Appendix F

HOT DOCS© Knowledge Test (Spanish version)

HOT DOCS©

Encuesta Previa

Código de ID:_____ Fecha:_____

Encierre en un circulo su respuesta

1. Los etapas del Desarrollo se refieren a las habilidades importantes que el niño debe alcanzar a una edad esperada, como hablar y caminar.	**Verdadero**	**Falso**
2. El desarrollo del cerebro de un niño está afectado por dos cosas 1) que tan seguro permito que mi niño se sienta 2) que tantas oportunidades le proveo a el o ella para aprender.	**Verdadero**	**Falso**
3. Observar el comportamiento de mi niño es una manera de saber que es lo que mi niño me quiere decir.	**Verdadero**	**Falso**
4. Palabras positivas se refiere a decirle a los niños "Si, lo harás" cuando se refiere a que hagan algo que ellos no quieren hacer, como recoger sus juguetes.	**Verdadero**	**Falso**
5. Cuando los niños no hacen caso inmediatamente, es mejor ignorarlos hasta que ellos hagan caso a lo que se les pidió hacer.	**Verdadero**	**Falso**
6. Los problemas de conducta deben ser castigados inmediatamente para que el niño sepa lo que debe hacer.	**Verdadero**	**Falso**
7. Si yo le muestro a mi niño algo, el o ella entenderá mi mensaje más claramente que si yo solo se lo explico.	**Verdadero**	**Falso**
8. Cuando se le lee a los niños pequeños, esta bien saltarse las palabras y hablar sobre las fotos.	**Verdadero**	**Falso**
9. Los niños con problemas del desarrollo necesitan tiempo extra y practica para aprender habilidades importantes para la escuela.	**Verdadero**	**Falso**
10. Si mi niño golpea a otro niño, yo debo inmediatamente darle una nalgada y decirle que no esta bien golpear a otros niños.	**Verdadero**	**Falso**
11. Dormir y comer con un horario ayuda a los niños a comportarse bien durante el día.	**Verdadero**	**Falso**
12. Una vez que yo entiendo la función del comportamiento problemático de mi niño, yo puedo desarrollar un plan que ayude a mi niño a desarrollar habilidades nuevas.	**Verdadero**	**Falso**
13. El momento ideal para intervenir un problema de conducta es exactamente cuando esta sucediendo.	**Verdadero**	**Falso**
14. Preparar a los niños para salir, como ir de compras o visitar familiares y amigos, puede provocar problemas de conducta.	**Verdadero**	**Falso**
15. Cronómetros, bolso, mochilas pasatiempo y tablas de primero/luego son formas de prevenir problemas de conducta.	**Verdadero**	**Falso**
16. Los niños nos necesitan a nosotros para enseñarles a expresar sus sentimientos.	**Verdadero**	**Falso**
17. La manera como yo respondo al comportamiento de mi niño le enseñara a mi niño responder.	**Verdadero**	**Falso**
18. Los niños deben ser elogiados cuando siguen direcciones como recoger los juguetes.	**Verdadero**	**Falso**
19. Mi propio estrés puede afectar cuando interactúo con mi niño, y puede interferir con el desarrollo saludable de mi niño.	**Verdadero**	**Falso**
20. Mi propio estrés puede afectar mi salud física y bienestar emocional y mi habilidad para cuidar a mi niño.	**Verdadero**	**Falso**

Appendix G

HOT DOCS© Tip Tracker #1 (English version)

ID Code:_____

Date:_____

HOT DOCS© Parenting Tip 1: Use Positive Words

Directions: For each day of the week decide how hard it was for you to use positive words and circle your response:

1 = very difficult **2 = difficult** **3 = neither difficult nor easy** **4 = easy**

I used *Positive Words* to give my child directions:

Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday
How Hard	How Hard	How Hard	How Hard	How Hard	How Hard	How Hard
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
Did not use skill	Did not use skill	Did not use skill	Did not use skill	Did not use skill	Did not use skill	Did not use skill

Examples of positive words that worked with my child:

1.

2.

3.

4.

Appendix H

HOT DOCS© Tip Tracker #1 (Spanish version)

ID Código:_____

Fecha:_____

HOT DOCS© Consejo #1 para los Padres: Use Palabras Positivas

Instrucciones: Para cada día de la semana decida que tan difícil fue, y encierre en un círculo su respuesta:

1 = muy difícil **2 = difícil** **3 = ni difícil ni fácil** **4 = fácil**

Usé *Palabras Positivas* para darle a mi hijo/a instrucciones:

Viernes	**Sábado**	**Domingo**	**Lunes**	**Martes**	**Miércoles**	**Jueves**
Dificultad	Dificultad	Dificultad	Dificultad	Dificultad	Dificultad	Dificultad
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
No usé el consejo	No usé el consejo	No usé el consejo	No usé el consejo	No usé el consejo	No usé el consejo	No usé el consejo

Relata ejemplos de palabras positivas que sirvieron para su hijo:

1.

2.

3.

4.

Appendix I

HOT DOCS© Program Evaluation Survey (English version)

ID Code_____

HOT DOCS© Program Evaluation

	Strongly Agree	Agree	Disagree	Strongly Disagree
The HOT DOCS© program was beneficial to my family and/or my professional practice.				
The presenter(s) were knowledgeable and effective in communicating this topic.				
I am able to utilize these strategies with my children and/or in my professional practice.				
The Parenting Tips are beneficial to me.				
The Special Play Activities promoted interactions with my child and/or children I serve in my professional practice.				
The information I learned in HOT DOCS© has changed my parenting or professional practices.				
HOT DOCS© strategies have positively impacted my child's behavior or the behavior of children I serve in my professional practice.				
Overall, the HOT DOCS© program met my expectations.				

1. How are you using the information you learned in HOT DOCS©?

2. Have you shared the information from HOT DOCS© with (check all that apply)
   - ☐ Spouse or partner
   - ☐ Other family members
   - ☐ Friends
   - ☐ Interventionist, therapist, or teacher
   - ☐ Pediatrician
   - ☐ Others (please specify)
   - ☐ Did not share the information with other people

3. If you have shared information from HOT DOCS© with others, please describe how they have benefited from this information.

4. What can we do to improve HOT DOCS©?

5. What did you value most?

6. What suggestions do you have for future HOT DOCS© trainings?

Thank you!

Appendix J

HOT DOCS© Program Evaluation Survey (Spanish version)

ID Código_____

HOT DOCS© Evaluación del Programa

	Muy de acuerdo	De acuerdo	Estoy de acuerdo	Muy en desacuerdo
El programa de HOT DOCS© le ayudó a mi familia y/o a mi proveedor profesional.				
Los presentadores estaban preparados y comunicaban bien el tema.				
Siento que puedo utilizar estas estrategias con mi hijo y/o mi proveedor profesional.				
Los consejos para los padres fueron de gran ayuda para mi.				
El tiempo especial fomentó interacción con mi hijo y/o con los niños a los cuales les brindo mis servicios como proveedor profesional.				
La información que usted aprendió en HOT DOCS© ha cambiado sus prácticas como padre o proveedor profesional.				
Las estrategias de HOT DOCS© han impactado positivamente en el comportamiento de mi hijo o en el comportamiento de los niños a los cuales les brindo mis servicios de proveedor profesional.				
De manera general, el programa de HOT DOCS© llenó mis expectativas.				

. ¿Como está usando la información que aprendió en HOT DOCS©?

2. Ud. ha compartido esta información de HOT DOCS© con (marque todo el que aplica):
- ☐ Esposo/a o compañero/a
- ☐ Otros miembros de la familia
- ☐ Amigos
- ☐ Intervencionista, terapista, o profesor
- ☐ Pediatra
- ☐ Otro (por favor especifique)
- ☐ No he compartido esta información con nadie

3. Si usted ha compartido información de HOT DOCS© con otras personas por favor describa como ellos se han beneficiado con esta información.

4. ¿Qué le gustaria que se hiciera para mejorar el programa de HOT DOCS©?

5. ¿Qué fue lo más valioso para Usted del programa de HOT DOCS©?

6. ¿Qué sugerencias tiene Usted para futuros entrenamientos de HOT DOCS© ?: