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PREVENTATIVE BEHAVIORAL PARENT TRAINING IN A PRIMARY CARE
CONTEXT: INITIAL EVALUATION OF A UNIVERSAL PREVENTION
PROGRAM FOR DISRUPTIVE BEHAVIOR DISORDERS

by

Jessica L. Malmberg

A dissertation submitted in partial fulfillment
of the requirements for the degree

of

DOCTOR OF PHILOSOPHY

in

Psychology

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Logan, Utah

2013

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ABSTRACT

Preventative Behavioral Parent Training in a Primary Care Context: Initial Evaluation of
a Universal Prevention Program for Disruptive Behavior Disorders

by

Jessica L. Malmberg, Doctor of Philosophy

Utah State University, 2013

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Department: Psychology

Externalizing behavior problems such as noncompliance, tantrums, and aggression constitutes the most frequently cited reason for referral of young children to mental health clinics. The treatment for conduct problems (CP) that possesses the greatest amount of empirical support is referred to as behavioral parent training (BPT). Yet available data suggest that after accounting for treatment failures and dropouts, only about one third of children receiving BPT benefit significantly. More recently, there has been a shift towards the development of early intervention and prevention models for treating children at-risk for developing CP. While many of these programs have been shown to be effective, they fail to address shortcomings of BPT such as the length of treatment and the context of service delivery. Furthermore, the majority of these programs continue to be classified as selective or indicated prevention programs, thereby targeting children once they have already begun showing elevated levels of disruptive

behaviors. More recently, a preventative and abbreviated version of BPT, called preventative behavioral parent training (PBPT), has been developed to address the limitations inherent in BPT. A recent evaluation of PBPT has demonstrated its utility in reducing rates of noncompliance and tantruming in children at-risk for developing CP. This study sought to add to previous findings regarding PBPT by evaluating its effectiveness when disseminated as a universal prevention program within a primary care setting. More specifically, this study aimed to evaluate whether PBPT could be utilized to support parents in learning effective strategies for managing their young child's typical misbehaviors, thereby preventing the development of clinical levels of CP and strengthening the practices of all parents. Results demonstrated that PBPT yielded positive outcomes in regards to both child and parent outcome variables. Furthermore, program evaluation data revealed that the PBPT program was socially acceptable and the strategies discussed were both feasible and effective. Taken together, the current study provides preliminary evidence of the positive proximal impact of the PBPT program. Potential clinical implications of these findings and future directions for research are discussed.

(154 pages)

PUBLIC ABSTRACT

Preventative Behavioral Parent Training in a Primary Care Context: Initial Evaluation of
a Universal Prevention Program for Disruptive Behavior Disorders

by

Jessica L. Malmberg, Doctor of Philosophy

Utah State University, 2013

One of the biggest challenges parents face is effectively managing their child's engagement in various disruptive behaviors including noncompliance, tantrums, and aggression. Typically when children begin exhibiting disruptive behaviors, parents will express their concerns to their pediatricians; however, there are significant barriers to parents gaining adequate guidance due to clinic time constraints, insurance reimbursement issues, and the limited training pediatricians receive in addressing these concerns. As such, children are generally referred to outside mental health clinics where additional barriers arise including waitlist delays and mental health stigmatization. The treatment for conduct problems (CP) that has proven most effective is referred to as behavioral parent training (BPT). Yet only about one third of children who receive BPT significantly improve. More recently, psychologists have been focusing their efforts on developing early intervention or prevention programs. While these programs have been shown to be effective, they fail to address certain limitations of BPT including length of treatment, target population, and the context of service delivery. More recently, a two-session prevention program called preventative behavioral parent training (PBPT) has been developed to address the limitations of BPT and has proven to be effective in reducing children's engagement in various disruptive behaviors. This study sought to add to these findings by evaluating whether PBPT could be utilized as a universal prevention program within a primary care setting.

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The assistance and support provided by the pediatricians and medical staff involved in this project were invaluable. Thank you to all who helped with every stage of this process. I would especially like to thank all of the families who committed to participating in this clinical program. It is my hope that the information obtained from this program will influence future program development and public policy, allowing many additional families to benefit from this support.

I would like to thank my parents for all of their love and support. From a young age, you instilled in me the value of an education and the importance of pursuing my dreams. Thank you for always pushing me to reach my full “potential.” Finally, I owe a special thank you to my partner, Bri, for her patience, encouragement, and wisdom. I cannot imagine what graduate school would have been like without you in my life. I will

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Jessica L. Malmberg

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CHAPTER I

INTRODUCTION

Externalizing behavior problems such as noncompliance, tantrums, and aggression constitute the primary mental health concern among young children. In fact, disruptive behavior problems are the most frequently cited reason for referral of young children to mental health clinics (Wakschlag & Keenan, 2001). When left untreated, early onset conduct problems (CP) are the strongest predictor of later development of delinquency, substance abuse, and violence (Hartman, Stage, & Webster-Stratton, 2003). Unfortunately, young children with CP represent a chronically underserved population with approximately 70% not receiving any treatment and even fewer receiving treatment that is empirically supported (Webster-Stratton & Reid, 2003).

Contemporary etiological theories of CP distinguish between two subgroups of children: early starters and late starters (Moffitt, 1993). The early-starter pathway is characterized by the onset of CP beginning during preschool or early-school age years and seems to have the most negative long-term prognosis. The coercion model provides the most thoroughly delineated theoretical framework for the “early starter” developmental pathway. The coercion model is based on the underlying theory that CP behaviors are unintentionally developed and maintained in the home through coercive parent-child interactions (Patterson, 1982). More specifically, a child’s biological disposition for a “difficult temperament” interacts with harsh and/or inconsistent parenting practices to increase the risk for developing ongoing coercive parent-child interactions. Coercive parent-child interaction styles become well-rehearsed over time

and place children at increased risk for continuing on this developmental pathway throughout the lifespan (Campbell, 1995). By adolescence, these children account for almost half of all adolescent criminals and the majority of violent criminals (Conduct Problems Prevention Research Group (CPPRG), 2000). In addition, these children are at increased risk for a variety of negative life outcomes including lower socioeconomic status, depression, and poorer physical health (de Graaf, Speetjens, Smit, de Wolff, & Tavecchio, 2008). In contrast to early starters, late starters begin engaging in CP behaviors during adolescence and have a much higher rate of desistance (Frick, 2012). Given the serious consequences associated with the early-starter pathway, as well as the fact that externalizing behavior problems become stable by age 2 or 3, effective prevention programs must be initiated long before the child reaches school age (Campbell, 2002).

Historically, a variety of interventions have been employed in an attempt to treat childhood CP. Of these, BPT has consistently emerged as the most successful intervention to date (Eyberg, Nelson, & Boggs, 2008). The underlying assumption of this model is that ineffective parenting practices have been at least partially responsible for the development of the child's CP. Therefore, parents are trained to alter their child's behavior by implementing behavioral modification strategies (McMahon & Forehand, 2003). These strategies are heavily rooted in behavioral theory and emphasize reinforcement and punishment procedures based on operant conditioning. As parents engage in positive interactions with their child and implement effective discipline strategies, problem behaviors decrease.

Although BPT has a longstanding history of leading to improvements in children's behaviors, inherent weaknesses remain that must be addressed. In particular, dropping out of treatment prematurely has been shown to be a significant problem. While longitudinal follow-up studies have demonstrated that children whose parents successfully complete BPT generally maintained treatment gains, those families who dropped out of treatment prematurely showed no change from pretreatment levels in child disruptive behavior or parenting stress (Boggs et al., 2004). A review of 22 BPT studies demonstrated that the average dropout rate for families was 28% (McMahon & Forehand, 2003), while others have estimated premature termination to be as high as 60% (Lavigne et al., 2010). Others have noted concerns regarding the fact that BPT has not been shown to be effective with all families. Patterson (1974) reported that 22% of treated families in his sample did not show improvement with BPT, while Webster-Stratton and Hammond (1997) reported that approximately one third of children continued to exhibit clinical problems at 1-year posttreatment. After accounting for treatment failures and dropout rates, BPT has been demonstrated to help only approximately one third of children who present for treatment (McMahon & Forehand, 2003). While a number of child and family characteristics may limit the effectiveness of BPT, the severity of the child's CP has been most consistently associated with treatment outcomes (McMahon & Forehand, 2003). In addition, the age of the child has been shown to influence treatment outcome, with younger children showing more significant gains (Lavigne et al., 2010). This is not altogether surprising considering the relatively minor and developmentally typical misbehavior of early childhood is less complex and more transitory in nature, making it

more malleable overall.

Given the well-documented limitations of BPT when implemented late in the child's developmental trajectory, there has been a shift towards the development of early intervention and prevention models. While a number of prevention models have been shown to be efficacious in addressing CP (CPPRG, 1999; Sanders, 1999; Webster-Stratton, 1998), they continue to be largely classified as selective or indicated prevention. That is, children who are targeted for treatment are already engaging in CP behaviors at an elevated rate and with increasing severity. In addition, these preventative programs require time and effort commensurate with that of standard treatment models.

There is also significant concern regarding the fact that only 30% of young children with CP are able to access appropriate services (Webster-Stratton & Reid, 2003). Typically when children begin exhibiting disruptive behaviors, parents will express their concerns to their pediatrician. Unfortunately, there are no current systematic training programs available to instruct pediatricians on how to assist parents in managing their child's misbehaviors (Axelrad, Pendley, Miller, & Tynan, 2008). Instead, pediatricians most often refer the patient to a child psychologist; however, significant barriers to these referrals exist including stigmatization associated with accessing psychological services, insurance restrictions, and wait-list delays (Kelleher, 2001).

In an attempt to address issues of service accessibility, additional focus has been placed on disseminating early intervention and prevention services within primary care settings. Early attempts at establishing these types of programs have relied on medical professionals to provide these services (Sanders, 2002). While studies have demonstrated

general support for the efficacy of primary care staff offering brief, early parenting support, significant barriers have also been identified. It is difficult to integrate additional responsibilities into a medical professional's usual caseload, supervision is limited, and current insurance reimbursement models are inadequate. Despite this emphasis on integration within primary care settings, other limitations of BPT also remain; including excessive participation requirements and an emphasis on treating clinically identified children (Axelrad, Garland & Love, 2009; Axelrad et al., 2008; McMenemy, Sheldrick, & Perrin, 2011).

Taken together, current evidence-based treatments are generally costly, time consuming, difficult to access, and are delivered too late in a child's developmental trajectory. Given these limitations, development of a universal prevention approach would seem an essential step in reducing the prevalence rates of CP. Recently, a simplified version of BPT, known as preventative behavioral parent training (PBPT), was developed as a preventative program for use with very young children. In a recent evaluation, PBPT was deemed efficacious in modifying parent's ineffective parenting practices and in preventing the development of CP in at-risk children at 6-months posttreatment (Malmberg, 2011).

However, targeting children on the basis of identifiable risk factors is inefficient and there is growing recognition that ineffective parenting practices are widespread (Waylen, Stallard, & Stewart-Brown, 2008), suggesting that the development of a universal approach to the prevention of childhood CP could possess significant merit. The purpose of this study was to add to previous findings regarding PBPT by evaluating

its effectiveness when disseminated as a brief universal prevention program within a primary care setting. More specifically, this study aimed to evaluate whether PBPT can be utilized to train parents to effectively manage their young child's typical misbehaviors, thereby preventing the development of clinical levels of CP, while strengthening the practices of all parents.

CHAPTER II

REVIEW OF LITERATURE

Introduction to Childhood Conduct Problems

Children exhibiting CP comprise the largest source of referrals to children's mental health services in this country, accounting for nearly one half of all requests for services (Murrihy, Kidman, & Ollendick, 2010). Behavioral problems are also the most common problems mentioned to pediatricians by parents during pediatric exams (Arndorfer, Allen, & Aljazireh, 1999). It has been estimated that 14% of children exhibit clinically significant behavior problems, while up to 50% experience subclinical levels of problems (Sawyer et al., 2000). Childhood disruptive behavior disorders represent one of the most costly mental health challenges facing our society, with a substantial proportion of affected children becoming and remaining involved in the criminal justice system or mental health agencies throughout the duration of their lives (Friman, 1999). When left untreated, approximately 50% of young children who exhibit CP continue to demonstrate these behavioral difficulties in later stages of development (Campbell, 1995). By adolescence, these children account for almost half of all adolescent crime and the majority of violent crimes (CPPRG, 2000). Research has indicated that children with early-onset CP are at increased risk for abuse by their parents, school dropout, drug abuse, juvenile delinquency, violence, adult crime, and marital disruption. They are also more likely to suffer from depression, develop antisocial personality disorder, and be diagnosed with other psychiatric illnesses (Webster-Stratton & Reid, 2003). The direct

costs associated with treating these youth are a growing concern to civil agencies with limited finances and resources. Additionally, the indirect costs to the community in the form of criminal activity, substance abuse, and other psychosocial problems are great (CPPRG, 2011).

Unfortunately, few interventions target children prior to being diagnosed with a disruptive behavior disorder, which often does not occur until children reach school age. By this time, their disruptive behaviors have been extensively rehearsed, as a strong majority of these children have been exhibiting CP since early childhood. While mild forms of CP are developmentally typical in young children, when mixed with ineffective parenting, these children are placed at increased risk of developing more severe behavior problems. In fact, the Department of Health and Human Services has declared that recent evidence suggests public health and human service professionals are failing to appropriately recognize behavioral problems in young children and are missing opportunities for timely prevention efforts (U.S. Public Health Service, 2000). The data have indicated that interventions targeting school age children and adolescent youth are only efficacious with a subset of the clinical population (Stormont, 2002; Wakschlag & Keenan, 2001). Given the inefficiency of targeting children on the basis of identifiable risk factors, and the prevalence of ineffective parenting practices in our society, universal approaches to prevention could prove particularly worthwhile (Simkiss et al., 2010).

Definitions

CP is a general term adopted by many professionals to refer to a wide range of

disruptive behaviors (McMahon, Wells, & Kotler, 2006; Webster-Stratton & Reid, 2003). These behaviors fall along a continuum ranging from mild forms of oppositional behaviors (e.g., yelling, tantrums, and noncompliance) to significant acts of antisocial behavior that are in direct violation of the rights of others (e.g., stealing, aggression, property damage). Displays of mild forms of oppositional behaviors, particularly tantrums and noncompliance, are considered developmentally typical for young children. Noncompliance has been variously defined as a child's failure to follow directions, instructions, or commands given by authority figures (Brumfield & Roberts, 1998; Kuczynski & Kochanska, 1990).

Noncompliance and tantrums, as diagnostic concepts, are most closely related to the diagnosis of oppositional defiant disorder (ODD). Diagnostic terms such as ODD are used to define a constellation of CP behaviors that are clinically significant. In order to diagnose a child or adolescent, a clinician must engage in the identification of a cluster of behaviors that correspond to those listed in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR; American Psychological Association [APA], 2000). ODD consists of a pattern of negative, disobedient, and hostile behaviors directed towards authority figures such as parents and teachers. Specific diagnostic criteria require that at least four of eight problematic behaviors be present over the course of a 6-month period. Problematic behaviors may include: loss of temper, arguing with adults, refusing to comply with adult requests, deliberately annoying others or blaming others for one's mistakes, being easily annoyed by others, displaying anger or resentment toward others, and engaging in spiteful or vindictive behavior. The primary characteristic present in

children with ODD is defiance or oppositionality, which often presents as noncompliance. The child must exhibit functional impairment (typically academic or social) and the diagnosis cannot be given if the child meets criteria for a more severe disruptive behavior disorder.

In contrast, the diagnostic criteria for conduct disorder (CD) are consistent with more severe behaviors displayed along the CP spectrum. Specifically, CD consists of aggressive and antisocial behaviors that include violations of the rights of others or deviations from major age-appropriate norms. Research has indicated that there is a developmental relation between ODD and CD. In a study conducted by Lahey and Loeber (1994), 82% of new cases of CD that emerged during the course of their study held a previous diagnosis of ODD. In contrast to ODD, only 3 of 15 negative behaviors must be displayed during a 12-month period, with at least one problem behavior having been displayed in the previous 6 months. Problem behaviors may include aggression toward people or animals, destruction of property, deceitfulness or theft, or serious rule violations (e.g., curfew violations) and must be associated with significant impairment in daily living (APA, 2000). Given the physical and cognitive abilities inherent in these problem behaviors, CD is more likely to be diagnosed among older children and adolescents. Throughout this review of the literature, CP will be adopted as a general reference for children's disruptive behaviors of all types. Specific references to disruptive behavior diagnoses will be utilized where the distinction between these and CP is noteworthy.

Prevalence

Given that CP are a frequently occurring problem even among nonclinical samples of children, it is not altogether surprising that children exhibiting CP comprise the largest source of referrals to children's mental health services in this country. More specifically among preschool aged children, parents most commonly reported concerns among both clinical and nonclinical samples are tantrums, noncompliance, and aggression (Turner & Sanders, 2006). Research has consistently documented that CP are prevalent during childhood, with an estimated 10% to 15% of preschool-aged children displaying behavioral problems (Thomas & Guskin, 2001; Wakschlag & Keenan, 2001).

Normative studies have provided specific information regarding the prevalence rates of noncompliance in both nonclinical and clinical samples. According to research conducted by Brumfield and Roberts (1998), among nonclinical samples, noncompliance increases gradually as children approach the second year of life, this behavior peaks during the second year (with rates of noncompliance often exceeding 50%), gradually declines across the third year, and by 6 years of age is exhibited as a reaction to less than 20% of parental commands. In contrast, within clinical samples, rates of noncompliance appear to peak and then persist well beyond age 3. This is consistent with data indicating that parents' and teachers' report of concerns regarding CP tends to increase from age 2 to 3 (Campbell, 1995). Achenbach and Edelbrock (1981) indicated that half of the parents of a nonclinical sample of children ages 4 to 7 reported noncompliance as a problem in their home. In contrast, approximately 85% of parents of clinic-referred children ages 4 to 7 indicated that noncompliance was a concern. Finally, in a review of normative

studies conducted by Forehand (1977) it was found that “normal” preschool-aged children demonstrated compliance to parent commands 60-80% of the time. It was suggested that compliance rates less than 60% were clinically significant.

As with trends regarding noncompliance, tantrums tend to peak towards the end of the second year, with children averaging nine tantrums per week and tantrums lasting an average of 4 minutes. However, it is within development norms for children up to age 3 or 4 to tantrum on the average of once per day (Potegal, Kosorok, & Davidson, 2003). In addition, tantrums are reported as occurring among 75% of 3- to 5-year-old children, with rates decreasing to 21% among nonclinical samples of 6- to 8-year-old children (Bhatia et al., 1990). Data have been consistent in indicating relatively high rates of tantrums in the normal population of preschool children. In a birth cohort study conducted by Jenkins, Owen, Bax, and Hart (1984) children’s rates of common behavior problems were examined from birth through age 5. Beginning at age 2, temper tantrums were reported as parents’ most significant concern regarding their child’s behavior. Specifically, parents reported that 19% of 2 year olds, 18% of 3 year olds, and 11% of 4 year olds were having tantrums daily. Interestingly, 29% of preschoolers having frequent tantrums were also reported to be engaging in other CP behaviors.

The ability to ascertain accurate estimates of the prevalence of child disruptive behavior disorders has been wrought with various methodological difficulties. Rates tend to vary as a function of the changes made in diagnostic criteria over the various DSM revisions, the inclusion (or not) of an impairment criterion, the informant (i.e., youth, parent, teacher, clinician) and the age and type of sample (Essau, 2003). The incidence of

ODD has been estimated to range from approximately 2% to as high as 15%. Similarly, prevalence rates of CD have been estimated to range from approximately 1% to 16% (APA, 2000). In general, boys display much higher rates of CP and are four times more likely than girls to receive a formal disruptive behavior disorder diagnosis, although these differences dramatically decrease during adolescence (Hinshaw & Anderson, 1996).

Developmental Course

Noncompliance and tantrums are considered highly common among young children, with virtually every parent being challenged to manage their child's mild CP. While some degree of noncompliance and tantruming is likely ubiquitous among young children, compliance probabilities should increase and tantruming rates should decrease as a result of normal socialization processes (Brumfield & Roberts, 1998). The display of mild behavioral problems is likely linked to aspects of the child's development (e.g., inability to meet needs, inability to communicate, limited emotional control). As toddlers, children develop the cognitive ability to understand parental commands and the physical capacity to carry them out, which also allows the child to begin to develop the ability to self-regulate (Calkins, 1994). Difficulties with emotional regulation, particularly regulating anger and dealing with frustrating situations, have differentiated typical children from those with behavior problems (Shelleby et al., 2012). Parents are responsible for setting appropriate limits for their children, based upon their developmental level. As children develop, they become more compliant and better able to emotionally regulate, largely as a result of their exposure to effective parenting practices

(Kuczynski & Kochanska, 1990). When keystone misbehaviors such as noncompliance and tantrums exist concurrently with parents' engagement in ineffective behavior management strategies, the risk of a child developing clinically concerning CP markedly increases. When these behaviors persist into later childhood, they place the child at increased risk of engaging in more serious CP behaviors throughout adolescence and into adulthood.

Overall, there is strong evidence to suggest that childhood CP possess a continuous nature, with mild forms of oppositional behavior (e.g., noncompliance in younger children) functioning as developmental precursors to later antisocial behaviors (Campbell, 1995). In fact, longitudinal studies have shown that most children identified as having a disruptive behavior disorder in early childhood were displaying CP well before reaching preschool age, with some researchers contending that precursors of CP are oftentimes displayed in the first year of life (Sanders, Gooley, & Nicholson, 2000). Without effective intervention, only 25% of children exhibiting CP demonstrate spontaneous symptom reduction (Lahey, Miller, Gordon, & Riley, 1999). Of the remaining 75%, about 50% continue to show stable rates and levels of CP behaviors throughout childhood, while another 25% progress to more serious antisocial behaviors. Of those who continue to display severe CP throughout childhood, 71% will later meet the diagnostic criteria for antisocial personality disorder (Robins, 1991). Furthermore, the 10-year-long Fast Track Intervention program found that high risk children positively identified in kindergarten as engaging in clinical levels of CP demonstrated an 82% probability of receiving a CD diagnosis by age 18 if they did not receive effective

intervention (CPPRG, 2011).

Mediating Factors

Child Factors

Numerous models have been proposed in an attempt to explain how normative CP can develop into clinical, potentially diagnosable concerns. Research has indicated that children may have a biological predisposition for developing CP (Dodge & Pettit, 2003). Genetically informed research has suggested a moderate degree of heritability for aggression, delinquency, and antisocial behavior from childhood through adulthood (Taylor, Iacono, & McGue, 2000). In addition, twin and adoption studies have revealed that genetic factors account for a moderate amount of the variance in childhood CP (Eley, Lichtenstein, & Stevenson, 1999). Research examining neurological abnormalities has provided further evidence of the role biology may play in the development of CP (Campbell, Shaw, & Gilliom, 2000). More specifically, neurological studies have demonstrated that antisocial adolescents are more likely to display abnormalities in the temporal and frontal lobes, which suggests that deficits in inhibitory control may place individuals at risk for developing CP in childhood (Siever, 2008).

The biological factor that has been most heavily implicated in the development of disruptive behavior disorders has been childhood temperament. Child psychologists have been particularly interested in temperamentally difficult children, who are thought to be at-risk of developing subsequent CP due to the increased likelihood of engaging in maladaptive interactions with family members (Frick & Morris, 2004). Children with

difficult temperaments display characteristics such as hyperactivity, impulsivity, irritability, and difficulty adapting (Frick & Morris, 2004). Research has found that up to 67% of children who display temperamentally difficult characteristics in early childhood will exhibit severe behavior problems in later childhood (Stormont, 2002). Bates, Maslin, and Frankel (1985) identified a behavioral pattern of fussiness, control resistance, and difficult temperament among 6-month-old children that predicted maternal ratings of CP at age 3. Others have demonstrated that relative to environmental factors (e.g., maternal depression, marital discord), temperament was the most powerful predictor of problems observed at age 3 (Keenan, Shaw, Elliquadri, Giovannelli, & Walsh, 1998).

Not surprisingly, the relationship between factors such as temperament and CP development is more complex than the above data might suggest. For example, Kingston and Prior (1995) obtained variable results in their examination of the relationship between temperament and CP. They found that a difficult temperament was associated with more severe forms of CP that formed in early childhood but not with transient or less severe forms of CP. They also concluded that while emotional dysregulation does appear to play a role in the development of CP, only certain types of negative emotions (e.g., anger and frustration) appear to predict the later development of CP, while other negative emotions (e.g., fear, anxiety, and sadness) do not.

The complex nature of the relationship between temperament and the development of CP is further reflected by research that has demonstrated that early problematic temperaments do not have a direct effect on the development of CP; rather, their effect is mediated by the types of parenting practices to which a child is exposed

(Dodge & Pettit, 2003). A large study examining the relationship between temperament and CP reported a weak association between maternal ratings of temperamental difficulties and rates of disruptive behaviors. However, perceptions of temperament were more likely to predict a parent's engagement in harsh, inflexible, or inconsistent parenting practices (Sanson, Oberklaid, Pedlow, & Prior, 1991). In fact, there is now a substantial body of evidence that suggests children with difficult temperaments are particularly susceptible to the pressures of ineffective parenting (Simkiss et al., 2010).

Parenting Factors

Research has consistently demonstrated the causal role parenting plays in both the emergence and maintenance of externalizing problems in young children (Campbell, 1995). Seminal work conducted by Baumrind (1967) demonstrated that parenting practices could heavily influence behavioral outcomes of children. She found that parents who were less nurturing, less involved, and more controlling had young children who were more withdrawn and less trusting, whereas parents who were disorganized, non-demanding, and insecure about their parenting abilities had children that exhibited poor self-control. Other parenting practices that appear to yield elevated risk of CP include inconsistent discipline, limited supervision and involvement, irritable/explosive discipline, and inflexible/rigid discipline (Chamberlain, Reid, Ray, Capaldi, & Fisher, 1997).

More recently, attention has been given to the developmental significance of early childhood (ages 1 to 3) and how this developmental period appears to have a profound impact on the development of certain parenting practices. One of the primary challenges

for parents at this age is learning to balance demands for child compliance with efforts to encourage autonomy (Shaw, Bell, & Gilliom, 2000). For the first time in a child's life, parents must begin to use discipline, control, and limit setting, while maintaining the warmth and sensitivity shown in earlier developmental periods. Children who exhibit temperamentally difficult behaviors are at increased risk for eliciting negative, inconsistent, and controlling parenting practices at this time (Scaramella & Leve, 2004). Research has consistently found that these ineffective parenting practices significantly increase the likelihood that a child will develop chronic and pervasive CP. For example, a study conducted by Campbell and Ewing (1990) concluded that observed rates of maternal negative control at age 3 was predictive of significant CP when children were 9 years of age. In sum, there is overwhelming support in the literature substantiating the claim that ineffective parenting skills contribute to the development of CP (Kendziora & O'Leary, 1993; Patterson, 2002; Stormont, 2002; Webster-Stratton, 1998).

Coercion Model

Taken together, it appears that children's difficult temperaments interact with harsh and inconsistent parenting practices to place them at risk for developing coercive parent-child interactions (Patterson, 1982). This coercion model describes how display of typical CP during early childhood creates a context through which parents may inadvertently reinforce their child's inappropriate behavior, increasing the probability that their child will continue to exhibit CP. The development of a coercive cycle between the child and the parent is considered the key element responsible for the early establishment of CP. Central to this coercive cycle is an interactive process where a child's disruptive

behaviors are often maintained and exacerbated through negative reinforcement cycles between parent and child. If a child's reaction results in a termination of the aversive stimulus, the child is more likely to engage in the disruptive behavior again. Furthermore, the parent is reinforced for withdrawing his/her demand because it results in a termination of the negative behaviors being displayed by the child. However, when a parent responds aversively to his/her child's negative behavior (e.g., counterattacks), the coercion mechanism comes into play. The parent will begin to escalate the severity of his/her aversive control tactics and will be reinforced by the cessation of the child's disruptive behaviors. This mutually reinforcing parent-child dynamic results in a coercive family process that facilitates the escalation of negative and coercive behaviors that become entrenched and amplified over time. A social learning account of these developmental processes suggests that in addition to being subjected to powerful reinforcement contingencies, children also develop CP as a result of the direct modeling of negative behaviors by their parents.

The coercion model provides the theoretical framework for the most thoroughly delineated pathway that leads to the display of persistent CP. The "early starter" developmental pathway is characterized by the onset of CP in the preschool years and by a high degree of continuity throughout the lifespan (Patterson, 1982). Consistent with the coercion model, these children initially demonstrate mild CP (e.g., noncompliance and temper tantrums), which becomes behavioral precursors to more serious CP behaviors over time (e.g., aggression, criminal activity, and substance abuse). When a child reaches school age, the child's coercive style of interaction often extends to his/her interaction

with teachers and peers. As a result, the child is more likely to experience frequent disciplinary actions, rejection by peers, and academic problems (Patterson, Reid, & Dishion, 1992). Data collected during the Oregon Youth Study (Patterson, DeBaryshe, & Ramsey, 1989) provided further evidence of a child's CP continuing upon school entry, with results strongly supporting the notion that a child's CP generalize across settings and time. Children on this pathway are more often male, more likely to be physically aggressive towards others, and are also more likely to have attention-deficit/hyperactivity disorder (ADHD; APA, 2000). Children on the early starter pathway have been shown to have the most negative long-term prognosis, with research indicating that this group has the highest degree of continuity in CP behaviors throughout the lifespan (CPPRG, 2000). This lifelong persistence places them at high risk for developing other psychiatric disorders and experiencing a variety of negative life outcomes (e.g., lower educational attainment, lower income, poorer physical health; Moffitt, 1993). Given the serious consequences associated with the early starter pathway, as well as the fact that externalizing behavior problems become stable by age 2 or 3, effective prevention programs must be initiated long before a child reaches school age (Campbell, 2002).

Behavioral Parent Training Model

Overwhelming empirical evidence has documented the important mediating role of parenting in the development of childhood behavior problems (McMahon & Forehand, 2003; O'Dell, 1974; Patterson, 1982) and has led to the creation of a variety of parenting interventions. Of the various interventions available, BPT is considered to be the current

best practice in treating childhood CP (Eyberg et al., 2008). BPT is defined as an approach to treating childhood behavior problems by which parents are trained to alter their child's behavior by modifying interactions with their child, promoting prosocial behavior, and discouraging deviant behavior (Kazdin, 1995). This model is based on the assumption that parenting skill deficits are at least partially responsible for the development and maintenance of CP. Although BPT has been used to treat a variety of child behavior problems, it has been primarily employed as a treatment for children's overt CP.

Common Characteristics

Many of the prominent BPT programs utilized today are based on the operant two-stage parent-training model for noncompliant children developed by Hanf (1969). The first stage emphasizes the development of parental attending skills and utilization of differential attention in an attempt to enhance parent-child relationships, while the second stage focuses on the effective implementation of consequences for misbehavior. These programs focus on treating problems such as noncompliance, tantrums, aggression, and oppositional behavior in young children. Although there are a number of different versions of BPT interventions, they share a number of commonalities (Kaminski, Valle, Filene, & Boyle, 2008). One characteristic they share is that the intervention is conducted primarily with the parents. BPT assumes that childhood CP are generally maintained by social agents, most often parents, who provide important cues and consequences for their child's behavior (Maughan, Christiansen, Jenson, Olympia, & Clark, 2005). As such, treatment gains are achieved by having parents consistently implement behavior

modification strategies they are taught in session within the child's home environment. Another core component present in the various BPT programs is the therapist's refocusing parents' attention away from a preoccupation with their child's CP behaviors, and instead, encouraging them to emphasize prosocial goals. Program content typically includes instruction in the social learning principles that undergird behavior modification techniques; training in systematic monitoring of children's behavior; and, training in positive reinforcement procedures, extinction and mild punishment procedures (e.g., time out), delivery of commands, and problem solving. Therapists engage parents via didactic instruction, modeling, role playing, behavioral rehearsal, and structured homework exercises in order to help them acquire positive parenting skills.

Program Variability

While the various BPT programs share a number of commonalities, they also vary in a number of ways. Some BPT programs place a primary emphasis on the treatment of noncompliant behaviors, given that they are considered to be the keystone behavior in the development and maintenance of CP (McMahon & Forehand, 2003). Treatment is based on the assumption that a child's CP are shaped and maintained through maladaptive patterns of family interaction. Thus, focus is given to teaching parents how to change their behavior toward their child so as to develop more appropriate styles of family interaction. Other programs place more importance on improving the quality of the parent-child relationship and emphasize traditional play therapy techniques (Rayfield, Monaco, & Eyberg, 1999). These programs also differ in the ways in which parents progress through their programs. In some BPT programs, the therapist will teach the

parenting skills sequentially within each phase of treatment. In contrast, other programs have chosen to include a single “teaching” session at the beginning of each phase of treatment wherein the specific techniques are explained, modeled, and role-played, with subsequent sessions being used to “coach” the parents in all of the skills they are learning until they have achieved competency.

Empirical Outcomes

The most recent review of evidence-based psychosocial treatments for children and adolescents with disruptive behavior indicated that BPT programs have been rigorously evaluated and are recognized as an empirically sound treatment (Eyberg et al., 2008). Furthermore, the APA Division 12 (clinical psychology; Chambless et al., 1996) and Division 53 (society of clinical child and adolescent psychology; Brestan & Eyberg, 1998) have both recommended BPT as an evidence-based intervention for the treatment of disruptive behavior disorders.

Numerous meta-analyses have been conducted examining the effectiveness of BPT programs in reducing rates of CP in children and adolescents. Serketich and Dumas (1996) conducted one of the earliest meta-analyses examining the utility of BPT in the treatment of disruptive behavior disorders. Only 26 studies met the inclusionary criteria, which included having a comparison or control group, at least five subjects per group, and at least one outcome measure for child behavior. The average age of the child was 6 years and parents participated in an average of 9.5 BPT sessions. Results demonstrated that the overall effect size (*ES*) was .86 for child behavioral adjustment and .44 for parental adjustment. The only moderating variable found was the age of the child, with

larger *ES* shown for older children relative to younger children.

A meta-analysis conducted by Maughan and colleagues (2005) examined the effectiveness of BPT for children and adolescents with disruptive behavior disorders. Included in the meta-analysis, were 79 studies that utilized treatment procedures that incorporated training parents in the use of reinforcement and/or time-out and one additional behavioral procedure (e.g., differential attention, precision requests, planned ignoring, praise). Children were between the ages of 3 and 16 years. *ES* were calculated for each of the three design categories (between-subjects, within-subjects, and single-subjects). *ES* were .30 for between-subjects designs, .68 for within-subjects designs, and .54 for single-subject designs. Based upon these results, the authors concluded that BPT is a successful intervention in reducing disruptive behaviors in children.

Lundahl, Risser, and Lovejoy (2006) conducted a meta-analysis examining 63 studies of parent training to evaluate the effectiveness of both behavioral and nonbehavioral programs at posttreatment and follow-up. Parent training studies included in this meta-analysis had at least one treatment and control group drawn from the same population of at least five participants each. Dependent measures included child behavior (e.g., compliance), parent behaviors (e.g., changes made in parenting practices), and self-perception of parenting (e.g., stress, effectiveness). No differences were found between the behavioral and nonbehavioral programs. In general, BPT produced moderate *ES* at posttreatment for child behavior (.42), parent behavior (.47), and parent perception (.53). Further analysis regarding potentially moderating variables found that economically disadvantaged families benefited less from BPT, particularly when delivered in a group

modality. At follow-up, there was a reduction in treatment gain, with effect sizes falling in the small to moderate range: .21 for child behavior, .25 for parent behavior, and .45 for parent perception.

A more recent meta-analysis (Kaminski et al., 2008) was conducted documenting the merits of individual treatment components predictive of significant, positive outcomes for parenting behaviors and child externalizing problems. Results of this meta-analysis indicated that for child externalizing behavior outcomes, the treatment components predictive of the largest ES included emphasizing the importance of parents engaging in positive interactions with their child, utilization of a time out procedure, engaging in consistent responding, parental modeling, and practicing these skills within session with the parent and child. These reflect manualized components included in most BPT programs.

Limitations of Behavioral Parent Training

As was previously discussed, treatment for CP has undergone extensive empirical review and has consistently demonstrated that BPT is more effective than other types of interventions (Eyberg et al., 2008). Unfortunately, not all children who receive treatment demonstrate improvement in CP behaviors. In fact, the generalization of treatment effects has been less consistently documented, with effects often failing to transfer to settings in which treatment did not take place and failing to maintain following termination (McMahon et al., 2006). In addition, the efficacy rates for interventions with these children have demonstrated that approximately one third of parents continue to report that their child's behavior falls in the clinical range (Hartman et al., 2003). Data also indicated

that approximately one third of families fail to complete treatment (Sanders, Markie-Dadds, Tully, & Bor, 2000). Overall, BPT appears to be consistently effective for only approximately one third of targeted children.

Although the range of factors that contribute to positive treatment outcomes are not fully understood, several studies have found that relatively younger children are more likely to succeed in treatment and that their families are less likely to drop out of treatment, as compared to older children and their families (Dishion & Patterson, 1992; Strain, Young, & Horowitz, 1981). This is not altogether surprising given that relatively minor and developmentally typical misbehavior of early childhood is less complex and more transitory in nature, making it more malleable overall. Historically, BPT has primarily been used as an intervention for school-aged children with CP, while less frequently being employed as an early intervention strategy with young children. Unfortunately, this model has been less frequently modified and employed as a prevention strategy with typically developing toddlers. Thus, although BPT has been described as an appropriate intervention for young children, it has predominantly been utilized with school-aged children who have CP (CPPRG, 1999). By the time children exhibiting CP have reached school-age, coercive parent-child interactions have been heavily rehearsed, CP behaviors have typically emerged across multiple settings (i.e., home and school), and children are more likely to have experienced academic problems and peer rejection (CPPRG, 2000). Given that substantial evidence exists suggesting that parents are concerned with the behavior of their young children, it is unfortunate that families must often wait until their children enter school before being offered services.

Models of Prevention

Preventative programs are linked to theoretical underpinnings that posit that a causal chain or mechanism exists that lead to the onset and persistence of a disorder, as well as the development of secondary conditions (Rose, 1992). Said differently, preventative science begins with the assumption that effective prevention efforts will promote adaptive behavior while targeting risk and protective factors that have been implicated as causally associated with the development and maintenance of a disorder (CPPRG, 2002). Thus, preventative programs focus on altering underlying causal relations in a way that leads to a reduction in the incidence, prevalence, and severity of the disorder. As such, the content, timing, and target population for prevention programs must be derived from our understanding of underlying causal mechanisms.

Preventative science has developed various models to describe the timing and populations targeted for treatment, which has led to the classification of prevention efforts as universal, selective, and indicated (Greenberg, Domitrovich, & Bumbarger, 2000). Universal prevention programs target the general public or an entire population group that has not been identified on the basis of individual risk. The focus of universal prevention programs is on being positive, proactive, and providing services independent of risk status. The assumption is made that the entire population could benefit from the content of the program whether it is through strengthening of adaptive behaviors present or providing novel information. One of the most significant advantages of a universal approach is the minimized risk of stigmatizing individuals, which consequently should lead to increased acceptability and program adoption. Selective prevention programs

target individuals or subgroups whose risk of developing a disorder is significantly greater due to the presence of risk factors in their lives. Selective prevention is driven by the use of such risk factors to identify the target audience. The third level of prevention is referred to as indicated prevention programs. At this final stage of prevention, programs target individuals who are identified as having prodromal signs, symptoms, or biological markers related to a disorder but who do not yet meet diagnostic criteria. To date, most BPT programs have been utilized for clinical intervention and, occasionally, as selective or indicated prevention models of treatments. Thus, an emphasis has been placed on alleviating the severity of the problem (e.g., preventing ODD from developing into CD) rather than preventing the development of clinical levels of disruptive behaviors.

In a comprehensive, integrated public health approach to reducing the prevalence of disruptive behavior disorders, universal prevention programs offer services to nonreferred populations that complement clinical services offered at the selective and indicated prevention level. In fact, strong arguments can be advanced to suggest that universal prevention increases the likelihood of change in at-risk children, as well as whole population groups (Simkiss et al., 2010). Universal prevention programs allow for the provision of services early in a child's developmental trajectory, and thus, increase the likelihood that behaviors will be more malleable to treatment given that coercive patterns of interaction will have been less extensively rehearsed. Although selective and indicated levels of preventions do serve to prevent dysfunction in individuals who are presenting with only minor problems, universal preventions offer an advantage of meeting the parenting needs of large numbers of parents through the use of a much lower

dosage of treatment. Thus, universal prevention has the potential of being much more cost-effective than both selective and indicated prevention programs.

Preventative Programs

Given the substantial advances that have been made in delineating the developmental pathways leading to the development of externalizing behavior disorders, increased attention has been given to creating programs that prevent the occurrence of clinically significant behavior problems. A review of the literature suggests that preventative work has primarily focused on selective and indicated prevention programs. That is, children who are targeted for treatment are at-risk of or already exhibiting CP behaviors at an elevated rate and oftentimes at a clinical level. Thus, targeted children may meet criteria for ODD but do not yet meet criteria for CD. Of the various prevention programs available, three have been linked to demonstrable positive outcomes: The Incredible Years Program, the Fast Track Project, and the Triple P-Positive Parenting Program. These programs share in common an emphasis of teaching parents to replace maladaptive parenting strategies with more effective ones. Furthermore, these programs often work to improve collaboration between parents, teachers, peers, and the broader community to ensure consistency across settings.

The Incredible Years

The Incredible Years program utilizes an interactive, videotaped-based curriculum and is designed to alter the developmental trajectory of preschool and early school-aged (ages 3 to 8) children who are already displaying clinical levels of CP

(Webster-Stratton & Reid, 2003). In general, this program targets children who are already exhibiting clinical levels of CP behavior, classifying it as an indicated prevention program. Utilizing strategies put forth by the Hanf model, this program emphasizes positive parenting and teaching parents to replace maladaptive parenting strategies with more effective ones. In addition, this program works to improve collaboration between parents and teachers to ensure consistency across settings.

In the core parent-training component of this program (BASIC), parents are involved in an interactive, videotaped-based prevention program. The BASIC parent-training program generally takes about 26 hours and is completed in 13-14 weeks with 2-hour sessions. This program is unique in that the program utilizes a standard package of videotapes, which model the parenting skills discussed, and are shown by the therapist to groups of parents. There are 250 video vignettes, each lasting approximately 1 to 2 minutes, which include examples of parents interacting with their children in both appropriate and inappropriate ways. The vignettes then serve as a stimulus for group discussions, problem solving, and collaborative learning. Specific strategies taught include enhancing positive relationships between parents and children through child-directed interactive play, praise, and incentive programs. Parents are then taught appropriate disciplinary strategies such as effective commands, ignoring, monitoring, and timeout. Children are also given the opportunity to participate in weekly 2-hour group sessions for approximately 18 to 20 weeks. These groups focus on teaching children about conflict resolution, negative attributions, perspective taking, cooperation, communication, and problem solving.

An expansion of the BASIC program, the ADVANCE treatment program, was later developed in an attempt to target risk factors other than parenting behavior. This broader-based training model is offered after the completion of the BASIC training program and includes an additional 60 vignettes focusing on parental self-control, communication skills, problem-solving skills, and strengthening social support and self-care. Given the correlation between CP and later academic difficulties, The Incredible Years program also incorporated a school component into their curriculum. The SCHOOL program is an adjunct to the BASIC and ADVANCE programs. This program consists of 4 to 6 additional sessions offered to parents after the BASIC program. The focus is on fostering children's academic readiness, increasing parental involvement, and improving collaboration with teachers.

The Incredible Years program has been evaluated in several randomized controlled trials, with the lead developer and her associates conducting the majority of these trials. Webster-Stratton (1984) evaluated the efficacy of the BASIC program by randomly assigning mothers of clinic-referred children with CP to the BASIC program, an individually administered parent-training program, or a waitlist control group. Treatment conditions were approximately nine sessions and covered the same content across formats. Results demonstrated that positive changes occurred in both treatment conditions on a variety of treatment outcome measures and most of these changes were maintained at a 1-year follow-up, with virtually no differences between the two treatment groups. An additional study conducted by Webster-Stratton indicated that parents who received the ADVANCE component following the BASIC parent training program

reported greater improvements in communication, problem-solving skills, and consumer satisfaction relative to parents who received only the BASIC program.

Webster-Stratton and Hammond (1997) evaluated the efficacy of the parent-training (PT), child training (CT), and parent training plus child training (PT+CT) treatments compared to a waitlist control in a group of 97 families with children between 2 and 7 years of age diagnosed with ODD. At the conclusion of the study, children in all three treatment groups demonstrated significant improvements on standardized child behavior ratings, as well as on observations of conflict management when compared to the control group. The PT condition tended to be superior to the CT condition on parent trainings of problem behaviors at home, as well as observed parenting parents. The CT condition produced more significant positive changes on ratings and observations related to child social problem solving the PT+CT group showed improvements over the broadest array of outcome measures. None of the treatment groups demonstrated significant improvements based on teacher ratings of problem behaviors. The PT and PT+CT produced the highest consumer satisfaction ratings. All treatment gains were maintained at 1-year follow-up for each treatment group. Taken together, when the Incredible Years program has been utilized as a early intervention or indicated prevention program, research has shown that approximately two thirds of children have shown clinically significant behavior improvements, with 25% to 46% of parents still reporting clinically significant child behavior problems at posttreatment (Webster-Stratton & Reid, 2003).

The Fast Track Project

The Fast Track Project (CPPRG, 2000) was created to target children at the highest risk for life-course persistent CP. This program was guided by developmental theory positing that the development of antisocial behavior was influenced by the interaction of multiple factors. More specifically, the effects of negative parenting, exacerbated by neighborhood stressors, interact with child factors such as impulsivity and irritability during the preschool years. In turn, these children are unprepared cognitively, emotionally, and behaviorally once they reach school age, placing them at even greater risk for developing more severe CP. Thus, this project aimed to provide more comprehensive treatment and to implement treatment for a longer period of time. The program involves the family, school, peer group, and community in an attempt to target multiple risk and protective factors. This prevention model was divided into two phases: elementary school and the adolescent period.

Three levels of prevention activities were implemented during the elementary-school phase of the program: (a) universal prevention support at the school level, (b) standard prevention support for children identified as high-risk during the initial kindergarten screening, and (c) additional individualized prevention support provided to high-risk children on an as-needed basis. At the universal level, the Promoting Alternative Thinking Strategies Curriculum was taught by classroom teachers two to three times per week in Grades 1 through 5. This curriculum emphasized the concepts of self-control, emotional awareness, social skills, and problem solving. At the standard level of prevention, 2-hour family group meetings were held regularly at local schools.

Sessions were held weekly for 22 sessions for Grade 1, biweekly for four sessions for Grade 2, and monthly for eight sessions for Grades 3 through 5. Parents were taught effective communication and discipline skills, while children were taught social skills, problem-solving skills, and self-control skills. At the end of each session, parents and children would meet together so that they could practice their new skills with staff guidance. Individualized prevention services included academic tutoring two to three times per week, home visits during the weeks between training sessions, and peer pairing to promote friendships.

Children in Grades 5 through 10 were targeted during the adolescent phase of the project. Intensive prevention efforts began during the transition from grade school to middle school (Grades 5 through 7) and continued with individualized preventative support through Grades 8 through 10. Parents and youth continued to engage in monthly group sessions during Grades 5 and 6. Sessions increasingly emphasized the importance of parent-youth communication and adult supervision and monitoring. Beginning in Grade 7, individualized criterion-referenced services (rather than group sessions) were utilized, with increasing emphasis being placed on identity development, positive peer group affiliation, and academic achievement and orientation to school.

The efficacy of the Fast Track project has been evaluated through a randomized controlled trial across the course of a 10-year period. This study included 891 behaviorally disruptive children who were originally identified through a multi-stage universal screening process involving both teacher and parent ratings of disruptive behavior (CPPRG, 1999, 2000). At the end of the first year of this preventative trial,

children in the treatment group, relative to children in the control condition, demonstrated significant progress toward acquiring almost all of the skills deemed to be critical protective factors against the development of CP, including emotional and social coping skills, more positive peer relations, and higher academic achievement. Parents in the treatment condition, relative to the control condition, demonstrated more positive involvement, more consistent discipline, and more positive school involvement. At the universal level, treatment schools showed lower overall levels of aggression and higher ratings of the quality of the classroom atmosphere. Finally, results indicated some initial effects on the reduction of disruptive and aggression behavior problems.

At the end of the third grade, children in the treatment condition displayed fewer conduct problems and parents reported less use of physical punishment and greater improvements in their parenting skills. By fifth grade, the preventative program had a significant impact on children's social competence and CP in the home and community (CPPRG, 2004). These effects diminished during middle school (CPPRG, 2007). By ninth grade, the preventative program was shown to have a significant impact on psychiatric CD diagnoses but only among the highest risk group of children (CPPRG, 2007). Ultimately, the Fast Track project has been found to prevent high-risk children from being diagnosed with CD by age 18. This study demonstrated that of those children identified as high risk in kindergarten, only 18% of this group remained free from an externalizing disorder diagnosis by age 18 without intervention, while this rate rose to 32% when children received effective intervention. These effects appear to remain stable for at least 2 years after the intervention has been terminated (CPPRG, 2011).

Triple P-Positive Parenting Program

Triple P-Positive Parenting Program (Triple P; Sanders, 1999) is a multilevel model of treatment, consisting of five levels of treatment on a tiered continuum of increasing strength and narrowing reach. This program incorporates all three levels of prevention into its model of treatment. To date, emphasis has been given to the two upper-levels of the program (Level 4 and 5), with these levels constituting standard clinical treatment and requiring up to 12 sessions with a mental health practitioner. In general, this program combines parent-training strategies with a range of family support materials and services, largely delivered in a primary care context. This program was originally designed for children from birth to age 12, and has recently been extended to include youth ages 12 to 16.

At Level 1 (Universal Triple P), the model includes information-based parenting strategies easily accessible to the entire population through the use of media sources (e.g., television, radio, newspaper), a set of “tip sheets,” and videotapes. Currently, the Triple P system utilizes a media resource kit, which consists of the following elements: (a) a 30-second television commercial promoting the program for broadcast as a community service announcement; (b) a 30-second radio commercial announcing the program; (c) a series of 40- or 60-second audio sound capsules on positive parenting; (d) 52 newspaper columns on Triple P dealing with common parenting issues and topics of general interest to parents; (e) self-directed information resources in the form of tip sheets and videos, which depict how to use behavior management strategies to address common behavior and developmental problems; (f) printed advertising materials; and (g) press releases and

letters to editors/community leaders requesting their support and involvement in the program (Sanders, 2010).

Level 2 (Selected Triple P) is a one-session, brief (usually 20 to 30 minutes) consultation program delivered by primary health care providers for parents who voice concerns about mild behavioral problems and independently request additional information (Sanders, 1999). This level of intervention is designed to help in the management of discrete child behavior problems that are not complicated by other behavioral difficulties and/or family dysfunction. At this level, primary care providers disseminate tip sheets used to provide basic information to parents on the prevention and management of common problems in each of four age groups (e.g., infants, toddlers, preschoolers, and primary school-aged children). Tip sheets outline specific and effective ways of solving common child management and developmental problems. Four videotape programs are also available to supplement the tip sheets used. The consultation visit is spent clarifying the presenting problem, explaining the materials, and tailoring them to the family's needs. Families are then encouraged to return should they have any further difficulties.

Level 3 (Primary Care Triple P) is a four-session, 20-minute consultation program conducted by a primary health care provider wherein parents are taught appropriate parenting skills designed to address problem behavior (Sanders, 2010). This level of prevention is appropriate for parents of children with mild to moderate CP behaviors. The first session clarifies the presenting problem, establishes goals for treatment, and sets up a baseline tracking system. The second session reviews the baseline monitoring, discusses

with the parents any conclusions about the nature of the problem, and discusses specific parenting strategies that can be used to address the concerns. The third session is spent monitoring the family's progress, discussing implementation difficulties, and reviewing additional parenting strategies, if necessary. The final session involves reviewing the family's progress troubleshooting any difficulties, and terminating services.

Level 4 (Standard Triple P) targets children with more severe CP and include 8 to 10 intensive sessions with a mental health practitioner (Sanders, 1999, 2010). At this level, many components of traditional parent training programs are included such as positive parenting skills and application of parenting skills to a broad range of target behaviors and settings. Program variants include individual, group, or self-directed options. Level 5 (Enhanced Triple P) is also administered by a mental health practitioner and provides adjunctive treatment for families in which parenting concerns occur in the context of other major problems (e.g., parental depression, marital conflict).

Sanders and colleagues (2000) conducted a study involving 305 families and compared Standard Triple P, Enhanced Triple P, and a waiting-list control group. Compared to the control group, both treatment groups showed reductions in parent-reported child CP. Although mothers in both treatment groups reported using fewer dysfunctional parenting practices at posttreatment, the treatment groups did not differ from the control group in terms of observed aversive maternal behaviors. In an additional randomized controlled trial of 87 families with 3 year olds, Standard Triple P, Enhanced Triple P, and a wait list control group were compared. At posttreatment, both treatment groups reported reduced child CPs, although significant improvements were only

observed in the Enhanced Triple P group. In addition, parents in the treatment groups reported reductions in the use of aversive parenting practices, although observational measures failed to demonstrate group differences. At 1-year follow up, treatment gains were maintained (Bor, Sanders, & Markie-Dadds, 2002).

Wiggins, Sofronoff, and Sanders (2009) evaluated the effects of Pathways Triple P, which is an adjunctive treatment used in combination with the Standard Triple P intervention to promote positive parent-child relationships. Sixty parents were randomly assigned to either the Triple P treatment group or a waitlist control group. Treatment consisted of 9 weeks of group therapy targeting development of basic parenting skills and reduction of dysfunctional parenting practices (e.g., laxness, verbosity, and overreactivity). Results demonstrated that parents who participated in the treatment showed improvement in parent-child attachment and parenting confidence, while simultaneously showing a reduction in child behavior problems. These gains were maintained at 3-month follow-up.

Limited research has been conducted on the three lower-level Triple P prevention programs. Sultana, Matthews, De Bortoli, and Cann (2004) conducted a recent study comparing Selected Triple P, Primary Care Triple P, and a waiting-list control in a sample of 50 children ages 1-5. Parents in the Primary Care Triple P prevention group reported significantly fewer child CP behaviors and the use of fewer aversive parenting strategies, relative to the waiting-list controls. In comparison, no significant differences were found between the Selected Triple P prevention group and the wait-list controls. Little empirical attention has been given to the effects of Universal Triple P. Calam,

Sanders, Miller, Sadhnani, and Carmont (2008) have recently conducted one of the few studies evaluating the effects of media intervention on parenting. This study examined the effects of watching a six-episode television series on parenting that portrayed five families with disruptive children undergoing Group Triple P. Results demonstrated that approximately 40% of families reported improvement in their children's level of disruptive behaviors and improvement in dysfunctional parenting practices, with a positive relationship shown between the number of episodes watched and level of behavioral improvement. In general, all forms of Triple P have been shown to have moderate-to-large effects when outcomes were parent-reported child and parenting behaviors, with the exception of Universal Triple P, which has been shown to have small effects (Thomas & Zimmer-Gembeck, 2007).

Taken together, current evidence reveals positive effects for each prevention program on outcomes of child and parent behaviors. More specifically, all three programs have been shown to yield moderate-to-large effects in reducing levels of dysfunctional parenting and clinical levels of child disruptive behaviors, as well as preventing the development of more severe CP in later childhood and adolescence (CPPRG, 1999, 2000; Sanders et al., 2000; & Webster-Stratton & Reid, 2003), with the exception of Universal Triple P which has been shown to have small effects on these outcomes (Thomas & Zimmer-Gembeck, 2007).

Primary Care Prevention

Generally speaking, when parents are faced with difficulties in managing their

child's misbehaviors, the first professional with whom they will likely discuss their concerns is their pediatrician (Bauer & Webster-Stratton, 2006). Utilizing a primary care pediatric setting in the delivery of prevention services addresses a number of barriers to accessing adequate or appropriate care. As such, dissemination of prevention programs in a primary care setting has recently been given more attention in the literature.

Reedtz, Handegard, and Morch (2011) evaluated a shortened version of the BASIC Incredible Years Program when working with a non-clinical community sample in a public-health care center. This study was conducted to determine if this shortened parent-training program could reduce risk factors related to the development of childhood behavior problems (e.g., harsh parenting, parents' sense of competence, positive parenting, etc.). The shortened intervention differed from the standard BASIC program in length (6 versus 12 parent sessions) and only covered content related to positive disciplinary strategies (play, praise, and rewards) while choosing not to cover topics related to limit setting, ignoring, and timeout. Parents of 186 children between 2 and 8 years of age (mean age = 3.88 years) were randomly assigned to the treatment or control group. Results from this study demonstrated that there were significant differences found between the treatment and control group regarding reductions in harsh parenting, children's behavior problems, strengthening of positive parenting and parents' sense of competence.

Lavigne and colleagues (2008) conducted an indicated prevention study utilizing the Incredible Years curriculum and included 117 children with ODD, aged 3 to 6, who had been assigned to either the 12-session parent-training program or a bibliotherapy

condition. The trainer degree was also evaluated, resulting in two parent-training groups (psychologist led or nurse led). The study consisted of randomly assigning 24 pediatric clinics to one of the three conditions. Families in the parent-training program watched the Incredible Years videos and participated in related discussion. Participants assigned to the bibliotherapy condition were simply given a copy of *The Incredible Years* (Webster-Stratton, 2006). Results indicated that all three treatment conditions showed significant improvement at a 1-year follow-up, with no differences noted between either of the parent-training groups and the bibliotherapy group. However, there was a dose effect seen where children of parents who attended seven or more treatment sessions demonstrating greater gains than the bibliotherapy group.

A study conducted by McMenemy and colleagues (2011) evaluated a 10-week parent education group using the Incredible Years program in two primary care pediatric offices. At the first site, 620 children attended their two and three year well-child visits during a 7-month period. Of these, 55% completed screening questionnaires and 17% ($n = 59$) met criteria for elevated ADHD and/or ODD symptoms. Of these families, 18 agreed to participate in the prevention program. At the second site, 80 families were identified for screening during a 3½-month period. Of these, 74% completed the screener, 29% ($n = 17$) met criteria for elevated ADHD/ODD symptoms, and 5 agreed to participate. Following completion of the program, mothers reported improvements in parenting skills and reductions in parenting stress. They also reported a decrease in child aggression and an increase in child compliance. Both mothers and pediatric providers reported high levels of satisfaction with the program.

A recent randomized controlled trial of Primary Care Triple P (Level 3) examined the impact of having a nurse provide basic parenting information to families who requested advice about how to effectively manage their child's disruptive behaviors. Participants received three to four brief (30-minute) individual family consultation visits with a nurse and were provided with parenting tip sheets and video resources covering common developmental and behavioral problems. This study demonstrated that families receiving the intervention, in comparison to a waitlist control, exhibited a significant decrease in dysfunctional parenting strategies, reduced parental anxiety and stress, and reports of problem child behavior (Turner & Sanders, 2006). These findings are noteworthy in light of a previous review of brief clinician-led psychosocial interventions delivered in primary care settings, which indicated that primary care providers (e.g., nurses) were not effective in altering child behavioral outcomes (Bower, Garralda, Kramer, Harrington, & Sibbald, 2001).

Others have sought to examine the utility of early identification and intervention with young children in primary care. One such study (Berkovitz, O'Brien, Carter, & Eyberg, 2010) screened 111 children with the Eyberg Child Behavior Inventory within a pediatric primary setting, with 30 children scoring greater than 1 standard deviation from the normative mean and having mothers who indicated wanting help for their child's behavior. Children were randomly assigned to one of two conditions, both which were abbreviated version of Parent-Child Interaction Therapy for use in pediatric primary care: (a) a four-session therapist-led group intervention; or (b) written materials describing basic PCIT concepts and guidelines for practice. Both groups demonstrated moderate to

large effect sizes in regards to decreases in child problem behaviors and ineffective parenting strategies.

Finally, some programs have sought to provide families with brief services aimed at providing an overview of generic behavioral parent training information within a primary care setting. This program is loosely based on parent management training and is known as The Brief Behavioral Intervention. Results of this clinical program demonstrated that 32% of patients showed improvement in their disruptive behavioral problems following the successful completion of the program, 47% of patients dropped out of the program prematurely, and 21% of patients demonstrated ongoing clinical concerns which warranted a referral for additional treatment (Axelrad et al., 2008). Although this program has been shown to be effective, acceptable, and accessible, it represents indicated prevention efforts for children engaging in clinically concerning levels of CP and requires a significant number of sessions (e.g., average of 7.2 sessions; Axelrad et al., 2009).

Summary and Conclusions

BPT has been established as an empirically supported intervention for treating children with disruptive behavior disorders. Treatment outcome studies consistently document that school-age children display less noncompliance and aggression when parents are taught to replace ineffective parenting practices with more effective parenting practices. Although BPT has a longstanding history of demonstrating improvements in children's CP, inherent weaknesses remain. Namely, approximately one third of

participants fail to complete treatment and an additional one-third fail to show improvement despite treatment completion. Although research has examined a wide range of potentially contributing factors to positive treatment outcomes, the literature indicates that relatively younger children are more likely to experience treatment success and their families are more likely to complete treatment, when compared to older children and their families (Dishion & Patterson, 1992; Strain et al., 1981). Unfortunately, BPT has been predominantly used as an intervention with children who are already displaying clinically significant disruptive behaviors and who are at-risk for engaging in persistent CP throughout the lifespan. Compounding the problem further is the overwhelming percentage of parents requesting parenting information from their pediatricians that fail to receive effective advice (Sanders, 2002).

A comprehensive downward extension of BPT has not been developed and tested with children under the age of three and current BPT programs are rarely utilized with children under 4 years of age (Kaminski et al., 2008). A very simplified version of BPT could be developed as a universal prevention program for use with very young children who exhibit developmentally typical rates of misbehavior. By targeting these children while they are still engaging in relatively minor and developmentally typical misbehavior, their behaviors should be more malleable, and thus, more responsive to treatment. The brief nature of such a universal prevention program may address a primary variable (e.g., length of treatment) influencing the large percentage of parents that drop out of treatment prematurely. The strategic utilization of a pediatric primary care setting should lead to decreased experience or perception of stigmatization and address

difficulties parents have in accessing high-quality parenting guidelines. Perhaps most importantly, by targeting very young children, opportunities to develop, practice, and perfect coercive behavioral patterns may be preempted.

A significant gap in the literature currently exists regarding the effective prevention of disruptive behavior disorders, such as ODD. Even less information is available regarding the dissemination of universal prevention programs, particularly when implemented within a primary care setting. Indeed, no studies have been conducted examining the utility of a universal prevention program conducted within a primary care setting by a mental health professional. Thus, this study was designed to determine the utility of PBPT in immediately addressing conduct concerns that have been identified as behavioral precursors in the development of disruptive behaviors disorders. Unique to this study was dissemination of PBPT as a universal prevention program within a primary care pediatric setting. Currently, most universal prevention programs rely on mass media strategies to disseminate information to the general population, raising the question as to how many parents actually respond and employ preventative strategies. In contrast, within this study all 2-year-old children attending a well-child physical were referred to the prevention program by their pediatrician in a manner patterned after universal referral for childhood immunizations.

Prevention science in mental health has emphasized that the next iteration of preventive programs must be closely tied to life course models that address the dynamic relationship shared by major antecedents of a target outcome (Reid, Eddy, Fetrow, & Stoolmiller, 1999). Thus, if prevention programs can demonstrate a positive proximal

impact on the targeted antecedents, this would provide support for further evaluation of the distal impact of a prevention program. Given that cycles of coercive behaviors between parent and child have been identified as one of the earliest and most powerful antecedents of disruptive behavior disorders, it is reasonable to conclude that changes in this coercive cycle would lead to a reduction in the development of clinical problems. Furthermore, previous research has demonstrated that immediate changes in targeted antecedents were linked to longitudinal change consistent with the objective of prevention (Malmberg & Field, in press). Given the exploratory nature of this study, focus was placed on evaluating immediate changes among select behavioral precursors linked to the development of clinical levels of children's CP. Positive findings would provide the basis for further evaluation of the distal impact of the unique characteristics of this prevention program. This study also provides a basis for additional model development and evaluation. The current project was designed to answer the following research questions.

1. Do rates of child disruptive behaviors (e.g., noncompliance, tantrums, and aggression) significantly differ at pre- versus postparticipation in prevention services?
 - a. If so, what proportion of the variance observed in altered rates of child disruptive behaviors can be accounted for or are moderated by child and/or parent variables?
2. Does parenting efficacy significantly differ at pre- versus postparticipation in prevention services?
 - a. If so, what proportion of the variance observed in changes in parent

efficacy ratings can be accounted for or are moderated by child and/or parent variables?

3. Does rate of engagement in effective parenting practices significantly differ at pre- versus postparticipation in prevention services?
 - a. If so, what proportion of the variance observed in changes in rates of engagement in effective parenting practices can be accounted for or are moderated by child and/or parent variables?
4. To what extent do parents perceive the PBPT program to be socially acceptable and feasible?

It was hypothesized that children would demonstrate significant reductions in rates of disruptive behaviors (e.g., noncompliance, tantruming, and aggression) from pre- to postparticipation and that moderating child and/or parent variables could be identified that account for a proportion of the variance in these changes. Regarding parenting variables, it was hypothesized that parents would report increased levels of parenting efficacy and engagement in more effective parenting practices at postparticipation, in comparison to preparticipation. Again, it was posited that specific child and/or parent variables would moderate these changes. Finally, it was hypothesized that parents would perceive this universal prevention program to be both feasible and socially acceptable.

CHAPTER III

METHODOLOGY

Dataset Description

Data were obtained from a preexisting clinical database of children between 24 and 36 months of age who were provided primary care services in a hospital-based pediatric office and voluntarily participated in the free PBPT prevention service. All parents were referred to participate in this prevention program by their pediatrician as a result of attendance at their child's 24-month well-child checkup. Participation was strongly encouraged by pediatricians and participation in the program was completely voluntary, in the same manner that child immunizations are encouraged and considered voluntary. Consistent with the characteristics of a universal prevention program, pediatricians were encouraged to refer all parents with a child participating in 24-month well-child checkups to the prevention program and all parents that chose to participate were accepted, with no exclusionary criteria utilized. The database included the participant's age in months, sex, and scores on assessment instruments administered as a standardized aspect of the prevention service. All data included in this database were de-identified prior to the point of research access. This research project was approved by the Utah State University Institutional Review Board (IRB Exempt - #4428).

Participants

Ninety-two parents were referred to participate in the free PBPT prevention

service over a 9-month period. Of the 92 parents who were referred to participate, 74 parents attended the initial session of the PBPT prevention program and were included in the clinical database. Of the 74 patients that enrolled, 61 successfully completed all sessions in the PBPT prevention program. The remaining 13 patients attended at least one session in the program and provided preparticipation clinical data but did not complete the program in its entirety. An additional 18 patients were referred to participate in the prevention program but did not attend any sessions and were not included in the clinical database, as no preparticipation clinical data were collected.

Children that completed the PBPT prevention program consisted of 26 girls and 35 boys, with a mean age of 25.8 months ($SD = 1.5$). The majority of children were Caucasian ($n = 58$), with one child being of African American descent, one child identifying as Hispanic, and one child being of “mixed” ethnicity. All families identified English as their primary language. Only one child came from a single parent home, with all other parents ($n = 60$) reporting that their child lived in a dual-parent household.

Among the children whose families attended at least one session but did not successfully complete the program, 6 were girls and 7 were boys. These children had a mean age of 26.9 months ($SD = 3.1$). Again, the majority of children were Caucasian ($n = 9$), with one child being of Indian descent, two children being of “mixed” ethnicity, and one child identifying as Hispanic. All families identified English as their primary language and no children came from a single parent home. Table 1 summarizes the number and percentages of these child categorical variables, as well as the means and standard deviations of relevant continuous child demographic variables.

Table 1

Child Demographic Information

Variables	Total sample (N = 74)				Program completers (n = 61)				Program dropouts (n = 13)			
	N	%	M	SD	N	%	M	SD	N	%	M	SD
Categorical variables												
Sex												
Male	42	56.8			35	57.4			7	53.8		
Female	32	43.2			26	42.6			6	46.2		
Ethnicity												
Caucasian	67	90.5			58	95.1			9	69.2		
Hispanic	2	2.7			1	1.6			1	7.7		
Biracial	3	4.1			1	1.6			2	15.4		
Other	2	2.7			1	1.6			1	7.7		
Continuous variables												
Child age (months)			25.97	1.9			25.79	1.6			26.85	3.1
CBCL total problem <i>t</i> score, time 1			50.49	10.0			50.36	10.2			51.08	9.4

To determine if there were differences on child demographic characteristics the two main groups of patients (children who completed the PBPT program and children who attended at least one session but failed to complete the PBPT program in its entirety) were compared. Independent-sample *t* tests were conducted to evaluate differences on continuous variables including child age (in months) and preparticipation Child Behavior Checklist (CBCL) total problems *t* score. The tests comparing children who completed the program and children who dropped out were nonsignificant for both child age, $t(72) = -1.83, p = .072$ and CBCL total problems *t* score, $t(72) = -.233, p = .816$. Chi-square analyses were conducted to evaluate differences between the two groups on the sex of the child. The sex of the child of completers versus dropouts was not found to be significantly related, $\chi^2(1, N = 74) = .054, p = .816, V = .027$. Chi-square analyses

examining ethnicity of completers versus dropouts were not possible because the expected value of at least five observations in each cell was not attained.

Approximately half ($n = 31$) of the parents who completed the PBPT program identified themselves as first-time parents. The majority of fathers (95.1%) were gainfully employed, while over half (60.7%) of mothers reported being homemakers. Approximately half of parents had earned a college, professional, or graduate degree (mothers = 49.2%; fathers = 59%), while only a small percentage of parents reported that high school was the highest level of education completed (mothers = 14.8%; fathers = 18%). Almost half of families reported that their current financial situation was “good” (54.1%), with 41% of families reporting their financial situation was “fair,” and a small percentage indicating their financial situation was bad (4.9%).

Approximately half of parents who failed to complete the PBPT program indicated that they were first time parents (46.2%). The majority of these fathers also reported that they were gainfully employed (92.3%) and over half of the mothers also reported that they were homemakers (53.8%). In regards to highest level of education completed by parent participants, the majority of mothers reported that they had obtained a high school degree (61.5%), while only a small percentage had earned a college, graduate, or professional degree (7.7%). Of those fathers who failed to complete the program, approximately half obtained a high school degree (46.2%), another third completed some college (30.8%), and the remaining obtained a college, graduate, or professional degree (23.1%). Table 2 summarizes the number and percentages of these parent and family categorical variables, as well as the means and standard deviations of

Table 2

Parent and Family Demographic Information

Variables	Total sample (N = 74)				Program completers (n = 61)				Program dropouts (n = 13)			
	N	%	M	SD	N	%	M	SD	N	%	M	SD
Categorical variables												
First time parent												
Yes	37	50.0			31	50.8			6	46.2		
No	37	50.0			30	49.2			7	53.8		
Mother education level												
High school	17	23.0			9	14.8			8	61.5		
Some college	26	35.1			22	36.1			4	30.8		
College/graduate/prof.	31	41.9			30	49.2			1	7.7		
Mother employment status												
Employed	30	40.5			24	39.3			6	46.2		
Not employed	44	59.5			37	60.7			7	53.8		
Father education level												
High school	17	23.0			11	18.0			6	46.2		
Some college	18	24.3			14	23.0			4	30.8		
College/graduate/prof.	39	52.7			36	59.0			3	23.1		
Father employment status												
Employed	70	94.6			58	95.1			12	92.3		
Not employed	4	5.4			3	4.9			1	7.7		
Family financial situation												
Bad	6	8.1			3	4.9			3	23.1		
Fair	31	41.9			25	41.0			6	46.2		
Good	28	37.8			24	39.3			4	30.8		
Very good	9	12.2			9	14.8			0	0.0		
Continuous variables												
PSS total score, time 1			34.6	8.0			34.8	7.7			33.5	9.4
Parenting abilities												
Confidence level, time 1			5.5	1.6			5.5	1.4			5.5	2.4
Parenting knowledge												
Confidence level, time 1			5.6	1.5			5.6	1.4			5.5	1.8

Note. Continuous confidence level variables were measured on a 10-point Likert scale (1 = Not at all confident to 10 = Extremely confident).

relevant continuous demographic variables. To determine if there were differences on parent or family demographic characteristics the two main groups of patients (families who completed the PBPT program and families who attended at least one session but

failed to complete the PBPT program in its entirety) were compared. Independent-sample t tests were conducted to evaluate differences on continuous variables including the preparticipation Parental Stress Scale Total score, as well as preparticipation parent ratings on level of confidence in parenting abilities and parenting knowledge. The test comparing families who completed the program and families who dropped out was nonsignificant for preparticipation levels of parenting stress, $t(72) = .504, p = .616$. The test comparing family completers versus dropouts was also nonsignificant for preparticipation parent ratings related to their level of confidence in their parenting abilities, $t(72) = .162, p = .872$, and parenting knowledge, $t(72) = .042, p = .967$. Chi-square analyses were conducted to evaluate differences between the two groups on a variety of categorical variables. The indication that parents were “first time parents” was not found to be significantly related to completers versus dropouts, $\chi^2(1, N = 74) = .093, p = .76, V = .036$, nor was the status of a family’s current financial situation, $\chi^2(1, N = 74) = .655, p = .09, V = .298$. The employment status of both mothers, $\chi^2(1, N = 74) = .206, p = .65, V = .053$, and fathers, $\chi^2(1, N = 74) = .161, p = .688, V = .047$, were also found to not be significantly related to completers versus dropouts. A mother’s level of education was found to be significantly related to whether or a not family completed the program versus dropped out prematurely, $\chi^2(1, N = 74) = .14.70, p < .01, V = .446$, as was a father’s level of education, $\chi^2(1, N = 74) = 6.58, p < .05, V = .298$. Specifically, completers were more likely to have earned a college, graduate or professional degree, while dropouts were more likely to report that their highest level of education was high school.

Measures

Four primary measures were utilized in the PBPT program: the Brief Infant-Toddler Social and Emotional Assessment (BITSEA), Child Behavior Checklist 1½ to 5 (CBCL 1½ to 5), Parental Stress Scale (PSS), and Home Record Card (HRC).

Supplemental information was obtained through the use of semi-structured interviews and a program evaluation form.

Brief Infant-Toddler Social and Emotional Assessment

Parents were asked to complete the BITSEA (Briggs-Gowan & Carter, 2002), a screening measure predominantly used in primary care settings. The BITSEA is used to detect emotional or behavioral problems, as well as delays in social-emotional competence. It is appropriate to use with children 12 to 36 months of age and consists of 42 items. On this measure, parents were asked to respond to each item by indicating on a 3-point scale how true (e.g., “not true,” “sometimes true,” or “very true”) each statement was for their child. This screening measure yields two scaled scores: Problem Total Score and a Competence Total Score. Psychometric research conducted on the BITSEA has demonstrated excellent test-retest reliability (Problem Scale = .87, Competence Scale = .85; Kruizinga, Jansen, Carter, & Raat, 2011). The internal consistency of the Problem Scale has been reported to be .79 and .65 for the Competence Scale. The BITSEA has also been shown to have high criterion-related validity relative to the CBCL 1½ to 5 (Briggs-Gowan, Carter, Irwin, Wachtel, & Cicchetti, 2004).

Child Behavior Checklist 1½ to 5

Parents were asked to complete the CBCL (Achenbach & Rescorla, 2000), a widely used parent report index of child behavior problems containing 99 items. On this measure, parents were asked to respond to each item by indicating on a 3-point scale how frequently their child exhibited each different problem behavior during the preceding two months. The checklist yields an overall score for symptomatic behavior, as well as two broadband scales: Internalizing and Externalizing. There are also seven syndrome scales: emotionally reactive, anxious/depressed, somatic complaints, withdrawn, sleep problems, attention problems, and aggressive behavior. Finally, five DSM-oriented scales are provided: affective problems, anxiety problems, pervasive developmental problems, attention deficit/hyperactivity problems, and oppositional defiant problems. The CBCL has satisfactory psychometric properties and has been shown to distinguish between referred and nonreferred children (Achenbach & Rescorla, 2000). This measure has demonstrated high levels of test-retest reliabilities for the Internalizing Problems, Externalizing Problems, and Total Problems scores, ranging from .87 to .90. Inter-rater reliability between parents (mother and father) has been shown to be .65. This measure has also been found to correlate highly with other established measures of childhood conduct problems, including the Toddler Behavior Screening Inventory ($r = .70$; Rescorla, 2005). The CBCL has been one of the most frequently utilized measures of childhood disruptive behaviors and has been extensively validated on previous research (Kazdin, 1987).

Parental Stress Scale

Parents were asked to complete the PSS (Berry & Jones, 1995), which is a parent self-report measure of overall parenting stress. This measure contains 18 items representing both positive (e.g., emotional benefits, self-enrichment, personal development) and negative themes (demands on resources, opportunity costs, and restrictions) related to parenthood. Parents were asked to indicate how much they agree or disagree with each statement based upon a five-point scale. The 8 positive items are reverse scored so that possible scores on this measure range from 18 to 90. Higher scores on this scale are reflective of higher parenting stress. The PSS has demonstrated satisfactory levels of internal reliability (.84) and test-retest reliability (.81). This measure has also been shown to have significant convergent validity with the Parenting Stress Index Total score (.75), as well as measures of work stress, anxiety, guilt, marital satisfaction, and social support (Berry & Jones, 1995).

Home Record Card

Rates of noncompliance, tantrums, and physical aggression were also measured within the home and community. HRCs were used to record this data. A HRC allowed for event recording of these disruptive behaviors. Examples of each of these behaviors were listed at the top of the column designated for that particular behavior. Noncompliance was defined as refusal to initiate an appropriate response within five seconds following a viable, parental command (McMahon & Forehand, 2003). Similarly, tantrums broadly refer to a wide range of disruptive behaviors or emotional outbursts displayed by children in response to unmet needs or desires (Potegal et al., 2003). For the

purpose of this study, tantrums were defined as any combination of behaviors suggestive of excessive negative emotional display including persistent crying, whining, yelling, screaming, body flopping, and exaggerated motions that are inappropriate given the child's developmental level and the context in which the behavior occurs. Each column indicated a particular behavior (e.g., noncompliance, tantrums, etc.) and each row indicated a separate day of the week. Parents were asked to record one tally mark for each occurrence of a behavior in the designated box. Parents were trained as participant observers who collected data on a daily basis and returned it to the clinic each visit. The frequency and type of consequences parents chose to implement following their child's disruptive behaviors were also recorded. The HRC has been shown to have moderate convergent validity with other parent report measures of child behavior, such as the *Eyberg Child Behavior Inventory* (.46) and correlates significantly with direct observation methods (.53; Nadler & Roberts, 2013).

Semi-Structured Interview

Parents completed a semistructured interview with the clinician at pre- and postparticipation. This interview was used to assess parent reported rates of noncompliance and tantrums, levels of confidence in parenting knowledge and ability, and current utilization of various behavior management techniques. Level of confidence in parenting knowledge and ability was assessed by asking parents to rate on a scale from 0 (e.g., no confidence) to 10 (e.g., complete confidence) how confident they felt in their knowledge and abilities to effectively manage their child's misbehaviors. These ratings were averaged to create a composite score of parenting efficacy.

Program Evaluation Form

Following completion of the program, parents were asked to complete a prevention program evaluation form. This form included 11 statements inquiring as to the social acceptability and feasibility of the prevention program. Parents were asked to indicate the level to which they agreed or disagreed with each statement through the use of a 5-point Likert scale. Parents were also provided with a list of six behavior management strategies discussed in the prevention program and asked to rank them based upon which strategy they preferred to use and which strategy they found to be most effective.

Description of Clinical Service

Families were initially informed about the prevention program by their pediatricians at their 24-month well-child checkup. Families that expressed interest to their pediatrician were subsequently scheduled for their first prevention appointment by a clinic medical assistant. At that time, families were also provided with a packet of documents that included a description of the prevention program (Appendix A), as well as assessment measures to be completed including the CBCL (Achenbach & Rescorla, 2000), the BITSEA (Briggs-Gowan & Carter, 2002), the PSS (Berry & Jones, 1995), a Behavioral Pediatric History (BPH) form (Appendix B), and a HRC (Appendix C). The measures utilized in this program were consistent with those typically used in a primary care clinical environment and reflected standardized assessment conducted with all families accessing prevention services. The results from these measures were used

clinically to monitor behavioral changes and prevention effects for participating children. A clinician contacted families approximately one week prior to their first scheduled appointment to remind them to begin completing their HRC and to confirm their scheduled appointment.

Clinicians were advanced graduate students from Utah State University and were supervised by a licensed clinical psychologist employed by the pediatric clinic. Clinicians had previously received didactic trainings and completed practicums in the assessment and treatment of child behavioral and emotional problems during their graduate training. All clinicians participated in weekly team meetings discussing the PBPT curriculum. Prior to providing services in the PBPT program, they were required to rehearse specific skills during these meetings and were provided with immediate behavioral feedback on their performance. Clinicians were also required to practice these skills with clinically identified children and received live supervision of these sessions. The PBPT program was conducted in exam rooms in the pediatric clinic. Each room was uniformly decorated and contained an examination table, medical tools and supplies, three adult-sized chairs, and various toys with which the child could play (e.g., blocks, magnets, trains, etc.).

Each family participated in a total of three prevention appointments. The first prevention session was approximately 60 minutes in length and was limited to assessment issues. During this session, a standardized clinical informed consent form was completed and detailed information about the prevention service was provided. The BPH form was reviewed and additional information regarding specific disruptive behaviors and parenting knowledge/practices was obtained via a semistructured interview (Appendix

D). The final portion of the session was spent reviewing the initial HRC and further instructions for accurately tracking child behaviors was provided in preparation for the coming week.

All families returned to the clinic approximately one week following their first appointment. This second session lasted approximately 60 minutes and emphasized the PBPT curriculum. Thus, parents were taught basic skills for managing their child's developmentally typical yet disruptive behaviors (e.g., noncompliance, tantrums, aggression, etc.) via a standardized BPT curriculum modified for use as a universal prevention strategy. The strategies discussed during this session included (a) using parent attention strategically, (b) employing effective commands, and (c) utilizing timeout appropriately as a consequence following disruptive behavior displays. Parents were taught through didactic instruction and modeling. They were also provided a handout detailing the skills discussed in the session (Appendix E). Parents were provided with additional HRCs and instructed to track their child's behavior over the next two weeks. One week following a family's second visit, they received a telephone call from the clinician to confirm the subsequent appointment and to remind parents to continue using the strategies previously discussed. Specific discussion regarding prevention techniques was generally deferred to the final prevention appointment in order to maintain a standardized prevention curriculum.

Families returned to the clinic approximately two weeks following the second session for their final visit. The final session was approximately 60 minutes in length. This session involved a brief review of the skills taught in session two and provided

parent(s) with an opportunity to receive additional support regarding any questions or concerns that came up during the previous two weeks. The clinician also conducted a semi-structured interview (Appendix F) to ensure that parents had gained the knowledge necessary to engage in effective parenting practices and any ongoing deficits were noted and further discussed. At the end of this session, parents were asked to complete the CBCL, PSS, and BITSEA a second time in order to assess change in parent attitude and parenting practices, as well as to assess changes in the child's engagement in disruptive behaviors as a result of participation in the prevention services. Assessments that indicated the presence of clinical concerns yielded a referral to a mental health provider, if appropriate. Families also completed a program evaluation form (Appendix G) in order to provide feedback to clinic staff regarding the value and utility of the services provided.

Dependent Variables

The focus of this study was to evaluate immediate changes among behavioral precursors linked to the development of clinical levels of children's CP. Such variables have been hypothesized to constitute pertinent change targets within a prevention context and were expected to change in in this study as a result of exposure to a standardized prevention protocol. Primary dependent variables included rates of child engagement in various disruptive behaviors. More specifically, rates of noncompliance, tantrums, and physical aggression were examined. These behaviors were measured by the HRC, prior to and immediately following participation in the PBPT program. The total numbers of occurrences of each disruptive behavior were summed for one week at preparticipation

and one week at postparticipation. The second week of preparticipation data was identified for use in these analyses, as it was noted that many families did not understand how to complete the HRC during the first week of baseline. Formal instruction on how to correctly complete the HRC was provided to families when they presented to the first PBPT session and the second week of HRC preparticipation data was collected between the first (assessment) and second (intervention) PBPT session. Similarly, the second week of postparticipation data was chosen for use in these analyses in order to allow parents ample opportunity to implement prevention strategies discussed during the second PBPT session. Overall changes in the rate of childhood problem behaviors at preparticipation were also assessed by examining changes in the CBCL Total Problem score and the BITEA Total problem score at preparticipation versus postparticipation.

Further analysis was conducted to determine if any changes in rates of child disruptive behaviors from preparticipation to postparticipation were moderated by child and/or parent characteristics. Each regression model identified a change score as the outcome variable. This change score represented the magnitude of change that occurred on that child outcome variable from preparticipation to postparticipation. Predictor variables were identified for inclusion in these regression models based upon theoretical considerations and previous empirical findings. Predictor variables included sex of the child (male/female), first time parent (yes/no), preparticipation level of parenting stress (PSS total score), and maternal level of education (high school diploma/more than high school diploma).

Secondary dependent variables included changes in levels of parenting efficacy

and engagement in effective parenting practices. Semi-structured interviews conducted at pre- and postparticipation were used to assess levels of parenting efficacy. During these interviews, parents were asked to rate on a scale from 0 (e.g., no confidence) to 10 (e.g., complete confidence) how confident they felt in their knowledge and abilities to effectively manage their child's misbehaviors. These ratings were averaged to create a composite score of parenting efficacy. Focus was given to assessing if level of parenting efficacy significantly differed at preparticipation versus postparticipation. If significant differences were noted, further analysis was conducted to determine which child and/or parent characteristics appeared to moderate changes in levels of parenting efficacy. Predictor variables included those discussed in the previous section and also included a change score (post-pre) of child disruptive behaviors, as measured by the HRC.

A variety of variables related to engagement in effective parenting practices were also included as secondary dependent variables. Data were obtained through the use of semi-structured interviews, as well as HRC data collection. Discipline consistency was calculated by dividing the total count for a child's engagement in disruptive behaviors by the total count for a parent's engagement in discipline strategies over the course of one week, as indicated by the HRC. Similarly, HRC data were used to calculate the rate at which parents utilized a timeout procedure by taking the frequency with which they used timeout and dividing it by the total number of instances of using any discipline strategy. These calculations resulted in a percentage that was then compared at preparticipation and postparticipation. Finally, parents were categorized into one of three discipline styles: effective, harsh, or permissive at preparticipation versus postparticipation. This

categorization was based upon the most frequently endorsed discipline strategy utilized by parents prior to and immediately following engagement in PBPT. Parents were labeled as “effective” if they identified utilizing a timeout or privilege loss as their primary disciplinary method. Parents were identified as being “harsh” if they endorsed using spanking, yelling, or threatening as their primary disciplinary strategy. Parents were labeled as “permissive” if they reported using bribing or “giving in” as their primary disciplinary approach.

Parents were asked to provide details on the parenting practices in which they typically engaged during the semi-structured interview at both pre- and postparticipation. Specifically, parents were asked to provide estimates on the following parenting practices: (a) use of effective commands; (b) ratio of positive to negative interactions with their child; (c) timeout procedures utilized; and (d) utilization of timeout for misbehaviors. Further details regarding parenting practices were assessed through the use of the HRC and included: (a) consistency in disciplining and (b) utilization of timeout. Parents were awarded one point for effective engagement in each parenting practice (Appendix H). Taken together, points derived from use of these six parenting strategies constituted a parenting practices composite score, which quantified a parent’s level of engagement in key parenting strategies. Effective parenting scores can range from 0 to 6, with higher numbers indicating engagement in more effective parenting strategies. Changes in parent’s level of engagement in effective parenting strategies were evaluated from pre- to postparticipation. Further analysis was conducted as warranted, to determine if this difference was moderated by child and/or parent variables.

The present study also provided preliminary data regarding the social acceptability and feasibility of PBPT when disseminated in a primary care pediatric office. The program evaluation form was used to assess the level of feasibility, utility, and social acceptability. A feasibility total score was calculated by adding up items addressing the ease with which parents could implement the behavior management strategies discussed. There were 25 points possible, with higher scores indicating greater feasibility. A Utility Total score was calculated by adding up items addressing the usefulness of the strategies discussed in the PBPT program. There were 30 points possible, with higher scores indicating greater utility. Finally, a social validity total score was calculated by combining the total feasibility and total utility scores, with higher scores indicating greater social validity. Descriptive statistics are provided, as well as the percentage of parents that endorsed each category (ranging from strongly agree to strongly disagree) for each individual item. Evaluation of the program's feasibility was further conducted by determining the percentage of families who were referred to the program but failed to attend any session, as well as the percentage of families that attended one or more sessions of the programs but failed to complete the program in its entirety.

CHAPTER IV

RESULTS

To assess the normality of the data, *Shapiro Wilk Tests* were conducted on all outcome variables. Results demonstrated that all outcome variables were significant ($p < .05$) at pre- and postparticipation. Taken together, the outcome variables included in this study were not normally distributed, reflecting a violation of assumptions required for parametric analyses. Both a nonparametric (*Wilcoxon Signed Rank test*) and a parametric (*paired-samples t-test*) test were run on all relevant outcome variables and results were compared. Results of these analyses yielded identical levels of statistical significance. Research on statistical methods has demonstrated that parametric statistical analyses are robust and may not be negatively impacted by certain violations of assumptions. Thus, it has been recommended that when nonparametric test results are consistent with results of parametric tests, the parametric test results may be fully interpreted (Rosen & Rosen, 1955; Smith, 2003). Results of the parametric tests are discussed below.

Child Outcomes

Do rates of child disruptive behaviors (e.g., noncompliance, tantrums, and aggression) significantly differ at pre- versus postparticipation in prevention services?

In order to answer the first research question, a *paired-samples t-test* was conducted comparing pre- and postparticipation weekly totals for each behavior as measured by the HRC (see Table 3). A within-subjects Cohen's *d* effect size was also calculated in order to assess the practical significance of this finding. Effect sizes for all

Table 3

Descriptive Statistics, t Scores, and Effect Sizes for Rates of Child Disruptive Behaviors

Instrument	Preparticipation rates (<i>N</i> = 61)	Postparticipation measure (<i>N</i> = 61)	<i>t</i> value	<i>ES</i>
HRC – noncompliance				
Mean	27.72	7.52	5.38**	1.37
<i>SD</i>	35.38	8.52		
HRC – tantrums				
Mean	18.23	4.33	8.70**	1.58
<i>SD</i>	14.85	4.96		
HRC – physical aggression				
Mean	11.05	2.61	6.07**	1.19
<i>SD</i>	12.88	3.79		
CBCL total externalizing				
Mean	52.05	42.46	8.81**	1.18
<i>SD</i>	10.90	8.22		
BITSEA total problems score				
Mean	8.97	5.31	6.78**	.98
<i>SD</i>	5.31	3.56		

** $p < .001$.

analyses were calculated using Morris and DeShon's (2002) equation 8, to account for repeated measures.

Results of the *paired-samples t tests* indicated a significant difference in rates of noncompliance at preparticipation versus postparticipation. Children who participated in the PBPT service exhibited higher rates of noncompliance at preparticipation versus postparticipation. A significant difference was also found in rates of tantruming at preparticipation versus postparticipation. These results indicated that children who participated in the PBPT program engaged in higher rates of tantrums at preparticipation versus postparticipation. Rates of physical aggression were also shown to be significantly

different at preparticipation versus postparticipation. These results demonstrated that children who participated in the PBPT program engaged in fewer aggressive acts at postparticipation versus preparticipation. Effect sizes calculated for these variables yielded values indicative of a large effect (see Table 3).

Additional *paired-samples t tests* were conducted comparing changes in overall rates of externalizing behavior problems at preparticipation versus postparticipation, as measured by the CBCL Externalizing Problem score and the BITSEA Total Problem score (see Table 3). Effect sizes were also calculated in an identical manner to that described above. As indicated by the CBCL Externalizing Problem score, a statistically significant difference was found in the overall rate of disruptive behaviors at preparticipation versus postparticipation. Similarly, results of the *paired-samples t test* for the BITSEA Total Problem score demonstrated a statistically significant difference in the overall rate of problem behaviors at preparticipation versus postparticipation. The magnitude of change for both variables was shown to be large. Taken together, these results indicated that children who participated in the PBPT program engaged in lower rates of overall disruptive behaviors at preparticipation versus postparticipation.

What proportion of the variance observed in changes in rates of child disruptive behaviors can be accounted for or are moderated by child and/or parent variables?

In order to assess whether parent and/or child variables moderated the variance observed in these child outcome variables, a linear regression analysis was conducted for each statistically significant finding. Using the enter method, nonsignificant models ($p > .05$) emerged for the HRC noncompliance change score, $F(4,56) = 2.28$; the HRC

tantrums change score, $F(4,56) = 2.20$; and the HRC physical aggression change score, $F(4,56) = 2.48$. A significant model emerged for the CBCL total change score, $F(4,56) = 3.55, p < .05$. The model explained 14.5% of the variance (adjusted $R^2 = .145$). Table 4 displays results for each predictor variable entered into the model. Of these, only preparticipation level of parenting stress was significant. This finding was replicated for the BITSEA total change score, $F(4,56) = 2.57, p < .05$, wherein the model explained 9.5% of the variance (adjusted $R^2 = .095$). These results indicate that parents who endorsed greater levels of stress at preparticipation also reported larger behavioral improvements for their child from pre- to postparticipation.

Parent Outcomes

Does parenting efficacy significantly differ at pre- versus postparticipation in prevention services?

Table 4

Regression Models for Significant Child Outcome Models

Model/variable	B	SE	β	<i>t</i> value
CBCL total change score				
Sex of child	-.10	1.73	-.01	-.06
First time parent	3.32	1.70	.23	1.96
Maternal education	3.33	2.41	.17	1.38
Preparticipation parenting stress level	.32	.11	.35	2.86*
BITSEA total change score				
Sex of child	1.38	.89	.19	1.55
First time parent	1.08	.87	.15	1.24
Maternal education	1.20	1.24	.12	.97
Preparticipation parenting stress level	.15	.06	.32	2.59*

* $p < .05$.

In order to answer the second research question a *paired-samples t test* was conducted evaluating changes observed in self-reported levels of parenting efficacy prior to and following engagement in PBPT. A significant difference was found in self-reported parenting efficacy at preparticipation versus postparticipation (see Table 5). These results indicated that parents who participated in the PBPT program felt more confident in their knowledge and abilities to effectively manage their child's disruptive behaviors at postparticipation in comparison to preparticipation, with the magnitude of change shown to be large.

What proportion of the variance observed in changes in parent efficacy ratings from pre- to postparticipation can be accounted for or are moderated by child and/or parent variables?

To assess whether parent and/or child variables moderated the variance observed in changes in parenting efficacy, a linear regression analysis was conducted. Using the enter method, a nonsignificant model emerged at the .05 level of statistical significance, $F(5,55) = 2.28, p > .05$. Thus, no child or parent predictor variables were found to significantly account for the variance observed in the changes in parenting efficacy from pre- to postparticipation.

Does rate of engagement in effective parenting practices significantly differ at pre- versus postparticipation in prevention services?

In order to evaluate the third research question *paired-samples t-tests* were conducted comparing parents rate of engagement in effective parenting practices prior to and following engagement in PBPT. A significant difference was found in the rate of

parent's discipline consistency observed at preparticipation versus postparticipation (see Table 5). These results indicated that parents who participated in the PBPT program were significantly more consistent at postparticipation (88% consistency) relative to preparticipation (48% consistency). The magnitude of this change was shown to be large. Additionally, rate of timeout use prior to and immediately following participation in the PBPT program was compared. A statistically significant difference was found in parent rate of engagement in the use of timeout as a primary discipline strategy at preparticipation versus postparticipation. These results indicated that parents were utilizing timeout at a significantly higher rate at postparticipation than preparticipation, with the magnitude of this change shown to be large (see Table 5). Specifically, parents were utilizing timeout as a discipline strategy in approximately 84% of appropriate instances at postparticipation, relative to 18% of instances at preparticipation. Further analysis was conducted examining changes in parents rate of engagement in effective parenting practices prior to and immediately following participation in the PBPT program, as measured by the parenting practices composite score described above. Analysis was completed through the use of a *paired-samples t test*. Results of this analysis indicated a statistically significant difference was found in parent rate of engagement in effective parenting practices at preparticipation versus postparticipation (see Table 5). These results indicated that parents were engaging in a significantly higher number of effective parenting strategies at postparticipation in comparison to preparticipation, with the magnitude of this change shown to be large.

Table 5

Descriptive Statistics, t Scores, and Effect Sizes for Continuous Variables of Parenting Efficacy and Practices

Instrument	Preparticipation rates (<i>N</i> = 61)	Postparticipation measure (<i>N</i> = 61)	<i>t</i> value	<i>ES</i>
Interview – Self-Reported Parenting Efficacy				
Mean	5.54	8.34	-13.77**	1.80
SD	1.40	.95		
HRC – Discipline Consistency Percentage				
Mean	48%	88%	-11.19**	1.46
SD	3%	2%		
HRC – Rate of Timeout Utilization				
Mean	18%	84%	-17.69**	2.33
SD	16%	25%		
Interview/HRC – Parenting Practices Composite Score				
Mean	1.52	5.51	-24.99**	3.92
SD	.91	.72		

** $p < .001$.

To evaluate changes in specific parenting practices at preparticipation versus postparticipation, a series of *McNemar tests* were conducted. The *McNemar test* is used to analyze data obtained by measuring a dichotomous variable for related designs. All variables included in these analyses were dichotomous variables coded as “yes/no” and indicated the utility of a given parenting strategy at respective measurement points. Analyses demonstrated statistically significant differences in the utilization of effective commands, an effective timeout procedure, and an optimal interaction ratio (4:1 positive to negative interactions) at preparticipation versus postparticipation. All analyses

indicated that a larger percentage of parents were engaging in effective parenting practices following participation in the PBPT program. Results of all McNemar tests conducted are summarized in Table 6.

A final nominal test was conducted to evaluate changes in parent's overall discipline style (e.g., harsh, effective, or permissive). The *McNemar-Bowker test* was utilized in this analysis. This test is similar to the *McNemar test* but it is utilized in related designs when nominal data have more than two values. Results of this analysis were rendered uninterpretable, as one of the categories present at preparticipation (e.g., harsh parenting style) was no longer present at postparticipation. Results for this test can only be computed for a P x P table, where P must be greater than 1. As such, descriptive statistics were calculated as an approach to analysis for this variable. At preparticipation, the majority of parents (70.5%) identified using disciplinary strategies that were consistent with a permissive discipline style, while a smaller percentage of parents reported using harsh (9.8%) or effective (19.7%) disciplinary approaches. In contrast, the

Table 6

Percentages and Level of Statistical Significance for Dichotomous Parenting Practices Variables

Parenting practice	Percentage utilized		<i>p</i>	<i>N</i>
	Preparticipation	Postparticipation		
Use of effective commands	13.1	95.1	< .001	61
Use of effective timeout	11.5	96.7	< .001	61
Optimal interaction ratio (4:1 positive:negative)	14.8 ^a	88.5 ^b	< .001	61

^a Average interaction ratio was 2:1 at preparticipation.

^b Average interaction ratio was 4:1 at postparticipation.

overwhelming majority of parents (91.8%) reported using an effective disciplinary approach at postparticipation, while the remainder of parents continued using a permissive approach (8.2%). No parents indicated using a harsh disciplinary style at postparticipation.

What proportion of the variance observed in changes in rates of engagement in effective parenting practices from pre- to postparticipation are moderated by child and/or parent variables?

To assess whether parent and/or child variables moderated the continuous parenting practice variables, linear regression analyses were conducted. Predictor variables were identical to those included in the parenting efficacy model. Using the enter method, all models were shown to be nonsignificant: discipline consistency, $F(5,55) = 0.60, p > .05$; timeout utilization, $F(5,55) = 0.46, p > .05$; and parenting practices composite score, $F(5,55) = 0.36, p > .05$.

Logistic regression analyses were performed for all statistically significant *McNemar tests*. In regards to the utilization of effective commands, the full model did not significantly predict postparticipation utilization of effective commands (omnibus chi-square = 9.52, $df = 6, p > .05$). Similarly, the full model did not significantly predict postparticipation utilization of an effective timeout procedure (omnibus chi-square = 4.28, $df = 6, p > .05$).

A final logistic regression analysis was performed regarding parent's engagement in an optimal interaction ratio. Sixty-one cases were analyzed and the full model significantly predicted parent's postparticipation interaction ratio (omnibus chi-square =

13.54, $df = 6$, $p < .05$). The model accounted for between 19.9% and 39.1% of the variance in the postparticipation interaction ratio. No predictor variables were shown to be significant, however, “sex of the child” closely approximated significance ($p = .051$), with parent’s postparticipation interaction ratios being slightly higher when their child was female. Table 7 depicts coefficients, the Wald statistic, and probability values for each of the predictor variables.

To what extent do parents perceive the PBPT program to be socially acceptable and feasible?

Descriptive statistics were used to address the fourth research question. Of 92 patients who were referred to the prevention program, 74 attended the initial session. This reflects an enrollment rate of 80.4%. Of the 74 patients that enrolled, 61 successfully completed the PBPT program in its entirety. This 17.6% dropout rate falls well below the typical 33% dropout rate observed in other BPT programs (McMahon & Forehand, 2003).

Parents who completed the program in its entirety were asked to complete a

Table 7

Logistic Regression Model for Significant Dichotomous Parenting Outcome Variable

Model/variable	B	SE	Wald	Sig	Exp (B)
Interview-interaction ratio					
Preparticipation interaction ratio	-20.27	1.34 x 10 ⁴	.00	.99	.00
Sex of child	-1.97	1.01	3.81	.05	.14
First time parent	-1.30	1.02	1.64	.20	.27
Maternal education	20.31	1.19 x 10 ⁴	.00	.99	6.59 x 10 ⁸
Preparticipation parenting stress	-.07	.07	1.18	.28	.93
CBCL total change score	.09	.08	1.26	.26	1.10

* $p < .05$.

Program Evaluation Form at the end of the third session. Descriptive statistics derived from this form are depicted in Table 8. Parents reported a mean total PBPT utility score of 27.5 out of 30, with higher scores indicating greater utility. All parents indicated that they “agreed” (24.6%) or “strongly agreed” (75.4%) that the behavior management strategies discussed in the PBPT program had been helpful in improving their child’s behavior. Most parents reported that they “agreed” (32.8%) or “strongly agreed” (65.6%) that they felt they had been successful in decreasing their child’s disruptive behaviors. Similarly, most parents reported that they “agreed” (34.4%) or “strongly agreed” (62.3%) that their child had benefited from changes in their parenting strategies and expectations. Parents also reported that the PBPT program was effective in improving the parent-child

Table 8

Parental Report of Acceptability and Feasibility of PBPT Program

Program evaluation form questions	Mean	SD ^a	% ^b
1. Using these strategies helped my child’s behavior improve	4.8	.4	100.0
2. I was successful in decreasing my child’s misbehaviors	4.6	.5	98.4
3. I feel like my relationship with my child improved	4.6	.6	95.1
4. I feel like I play more with my child	4.1	1.0	82.0
5. My child benefited from changes in my parenting strategies	4.6	.6	06.7
6. It felt difficult to use timeout	3.8	1.1	18.0
7. Trying to use timeout took too much time	4.0	1.0	11.5
8. It was hard to find time to play with my child	3.8	1.1	19.7
9. There are easier or better ways of improving my child’s behavior	4.3	.7	1.6
10. I would rather use positive behavior management strategies solely	4.1	.9	3.3
11. I would recommended this program to others	4.8	.4	100.0
Feasibility total score (out of 25)	19.9	2.9	—
Utility total score (out of 30)	27.5	2.6	—
Social validity total score (out of 55)	47.4	4.6	—

^a Range from 1 = “Strongly Disagree” to 5 = “Strongly Agree” for Questions 1-5, 11; 1 = “Strongly Agree” to 5 = “Strongly Disagree” for Questions 6-10.

^b Agree to Strongly Agree.

relationship. Most parents (95.1%) reported that they felt like their relationship with their child had improved, while 82% of parents reported that they played more with their child than prior to their participation in the PBPT program.

Regarding the feasibility of the PBPT program, parents reported a mean total PBPT feasibility score of 19.9 out of 25, with higher scores indicating greater feasibility. A small percentage (18%) of parents reported that timeout felt too difficult to use as a behavior management strategy for their child, while 11.5% of parents reported that using timeout took too much time. Similarly, a small portion of the sample (19.7%) reported that they felt that finding time to play with their child was difficult. Despite these reported difficulties from some parents, only 1.6% of the sample reported that they felt there were easier or better ways to improve their child's behaviors and only 3.3% of parents reported a preference for changing their child's behavior through the use of positive interactions alone rather than using positive interactions and timeout together.

Taken together, the social validity total mean score derived from the Program Evaluation Form was 47.4 out of 55. This mean score suggested that the overwhelming majority of parents found their participation in the PBPT program to be useful. Additionally, this score indicated that parents who participated in the PBPT program found the strategies they were taught to be feasible and effective in creating positive changes in their parenting strategies.

CHAPTER V

DISCUSSION

Current research has suggested that approximately 20% of children exhibit clinically concerning behavioral difficulties (Hiscock, Bayer, & Wake, 2005). Unfortunately, these children represent a chronically underserved population, with approximately 70% not receiving treatment (Webster-Stratton & Reid, 2003). Significant treatment barriers to appropriate mental health services exist including access to services and acceptability of treatment (Axelrad et al., 2008). Additional concerns have been expressed regarding the efficacy of currently available treatments (e.g., BPT) for disruptive behavior disorders. While a number of factors have been implicated as limiting the effectiveness of BPT, the severity of the behavior and age of the child have been shown to significantly influence treatment outcomes. Furthermore, high dropout rates have been demonstrated when clients participate in a full BPT model, and this has been linked to the extensive number of therapy sessions often required.

More recently, a shift has been made in the development of prevention models, as the field has gained a better understanding of children's behavioral developmental trajectories. While initial evaluation of prevention programs has been promising (Bauer & Webster-Stratton, 2006), most are classified as selective or indicated prevention and are overly cumbersome for dissemination at a population level. Additional research has been conducted on the utility of disseminating preventative programs within a primary care setting; however, significant limitations remain including sustainability, effective integration, and ongoing emphasis on the treatment of clinically identified children

(Axelrad et al., 2008).

This study aimed to evaluate the effectiveness of a brief universal prevention program (e.g., PBPT) when disseminated within a primary care setting. Universal prevention programs have the added benefit of meeting the needs of large numbers of parents through the use of a much lower dosage of treatment that is highly accessible. Previous research has indicated that PBPT is efficacious when utilized as a selective prevention program within a clinical setting (Malmberg & Field, in press). The purpose of this study was to determine if PBPT could be utilized as a universal prevention program to aid parents in effectively managing their young child's typical misbehaviors, thereby preventing the development of clinical levels of CP, while strengthening the practices of all parents. Further attention was placed on evaluating the feasibility and acceptability of implementing this universal prevention program within a primary care setting.

At a general level, results of the current study indicated that PBPT yielded positive outcomes in both child and parenting variables. These findings are consistent with previous research that has examined the utility of PBPT (Malmberg & Field, in press); however, the current study extends these findings by (a) being delivered as a universal approach to prevention, (b) being delivered in a pediatric primary care setting, and (c) by succeeding in strengthening parenting practices of most parents, regardless of the severity of their child's disruptive behaviors. Subsequently, the specific results of this study are considered in relation to each of the study's empirical questions.

Empirical Questions

Child Outcomes

Do rates of child disruptive behaviors (e.g., noncompliance, tantrums, and aggression) significantly differ at preparticipation versus postparticipation?

Results of this study demonstrated that children exhibited a significant reduction in the level of noncompliance at postparticipation relative to preparticipation. Overall, children engaged in an average of 28 acts of noncompliance per week at preparticipation and parents reported an average compliance rate of 56%. Following completion of the PBPT program, children engaged in an average of 8 acts of noncompliance per week and were compliant approximately 84% of the time. This change reflects a reduction of 20 acts of noncompliance per week and a 28% increase in the average rate of compliance over the course of a 2-week period. This significant reduction in a child's rate of noncompliance over such a short duration of time is suggestive of the impact of PBPT on child disruptive behaviors.

Child noncompliance has been consistently implicated as a “keystone behavior” in the development of CP (McMahon & Forehand, 2003). While displays of noncompliance are considered developmentally typical among young children, excessive rates of noncompliance appear to play an integral role in the development of the coercive cycle in relation to the “early starter” pathway of CP (Patterson et al., 1992). If a universal prevention program could aid parents in effectively managing developmentally typical, or slightly elevated levels of child noncompliance, this should lead to a reduction in the likelihood of engagement in a coercive interaction style. Furthermore, the negative

behaviors of young children have been described as more amenable to changes in parenting practices with smaller doses of treatment required. Taken together, this immediate reduction in the rate of noncompliance should serve as a protective factor against the development of CP, as it may aid in preventing child development from moving towards increasingly coercive interactions with their parents.

An additional child behavior that has been implicated as relevant to the development of childhood CP has been temper tantrums, and more broadly speaking, a child's ability to emotionally regulate (Shelleby et al., 2012). Results of this study demonstrated that children engaged in an average weekly rate of 18 tantrums prior to engagement in the PBPT program. Following participation in the PBPT program, children engaged in an average weekly rate of four tantrums. This average reduction of 14 tantrums per week yielded a large effect size. These results suggested that children were able to demonstrate increased ability to engage in self-soothing and effective anger management strategies over the course of a 2-week period.

Problems with emotional regulation, particularly regulating anger and dealing with frustrating situations, have differentiated typical toddlers from those with behavior problems (Cole, Teti, & Zahn-Waxler, 2003). From a functionalist perspective, emotional regulation has been defined as monitoring, evaluating, and modifying emotional reactions to accomplish one's goals (Shelleby et al., 2012). Thus, tantrums could be considered an example of a way in which children may emotionally react in order to accomplish their goals (e.g., escape an aversive stimulus, obtain a desired stimulus, etc.). Parents who participated in PBPT were taught to place their child in timeout for tantruming behaviors

and were instructed that the child must calm down in timeout prior to the cessation of the procedure. Said differently, parents were taught to hold children accountable for displaying negative behavior as an expression of negative emotion, while also differentially reinforcing self-soothing or calming behaviors. By utilizing this strategy, it is likely that children quickly learned that negative reactions to a situation were no longer functional in achieving their goal, and thus, began to modify their reactions in future interactions as demonstrated by their ability to more readily calm themselves when presented with a frustrating situation.

Research has suggested that young children rely most heavily on extrinsic factors, such as effective parenting practices, to learn how to effectively manage their emotions and behaviors (Shelleby et al., 2012). Results of this study suggest that utilization of the parenting practices discussed in PBPT might be particularly instrumental in promoting the development of adaptive behavioral and emotional control. From a preventative science perspective, it stands to reason that if prevention programs can increase a child's regulatory abilities (e.g., proximal factor), this would serve as a protective factor, and thereby reduce the likelihood of CP development (e.g., distal outcome).

Physical aggression has also been implicated in the development of childhood disruptive behaviors. Results of the current study demonstrated that children engaged in an average of 11 acts of physical aggression per week prior to engagement in the PBPT program. Following the completion of the PBPT program, children exhibited an average of 3 acts of physical aggression per week. This reflects a statistically significant reduction of 8 acts of physical aggression per week.

The implications for this finding are significant. A longitudinal study published by the Office of the U.S. Surgeon General demonstrated that aggression in young children is a significant predictor of the development of youth violence and clinical CP (Kelleher, 2001). Furthermore, the Surgeon General's report cited numerous studies that have found aggression to be a moderate risk factor for the development of ODD and CD, particularly among boys.

The display of mild forms of physical aggression is developmentally typical among young children. However, current theory suggests that the likelihood of a toddler engaging in escalated displays of aggression is dependent on whether the parent responds skillfully or ineffectively to early, mild levels of this behavior (Del Vecchio & O'Leary, 2006). More specifically, parents who engage in harsh or lax parental discipline responses to a child's aggression are hypothesized to encourage child aggression, through modeling or negative reinforcement. Thus, early intervention is imperative so that parents do not unwittingly respond to these behaviors in a manner that will increase the likelihood that they will develop into more serious violent acts. Within the current study, parents were taught to consistently utilize a timeout strategy immediately following an aggressive act. It is reasonable to conclude that this strategy allowed children to quickly learn that their engagement in aggressive behaviors was no longer functional, and conversely, resulted in their experiencing a negative consequence (e.g., timeout). Furthermore, use of this parenting practice likely prevented parents from modeling parental frustration or anger in front of their child. Taken together, PBPT appears to decrease early aggressive behaviors, which have consistently been implicated as a risk

factor for the development of CP, by reducing dysfunctional parenting practices.

Additional analyses were conducted on results from standardized behavior rating scales, which assessed for changes in overall problematic behaviors prior to and following engagement in the PBPT program. Statistical analyses performed on the CBCL Total Problems score and the BITSEA Total Problems score were indicative of significant reductions in children's engagement in problematic behaviors at postparticipation relative to preparticipation. Effect sizes for both of these analyses were shown to be large. Although most of the young children who participated in the PBPT program were not expected to exhibit clinically significant problem behaviors at preparticipation, the marked reduction observed across measures of these behaviors suggested that even screening measures possessed a sufficient level of sensitivity for detecting the positive effects of prevention efforts. Taken together, results of the various analyses conducted evaluating changes in children's problematic behaviors consistently demonstrated that patients were engaging in significantly fewer disruptive behaviors following participation in the PBPT program. These changes could be considered a protective factor for these children, as a reduction in the rate of their disruptive behaviors will decrease the likelihood of their engaging in a coercive pattern of interacting with their parents.

If so, what proportion of the variance observed in changes in rates of child disruptive behaviors can be accounted for or are moderated by child and/or parent variables?

In order to assess the possible presence of predictive relationships of specific

parenting or child variables and rates of child disruptive behaviors, numerous linear regression analyses were performed. Interestingly, none of the linear regression analyses performed with home record card change data specified as the outcome variable were significant. This suggests that none of the variables entered into the model were indicative of better outcomes for children who participated in the PBPT prevention program. More specifically, the sex of the child, parents' status as a first time parent, level of maternal education, and preparticipation level of parenting stress did not account for the changes observed in rates of children's noncompliance, tantruming, or physical aggression.

The absence of statistically significant findings here has significant clinical implications. The theoretical underpinnings of a universal prevention program support the notion that the content will be found to be beneficial to a population as a whole, whereas indicated and selective interventions are frequently targeted to benefit a more specific subgroup. Given the lack of significant findings, it is likely the PBPT program would prove beneficial to patients regardless of parent level of education, level of parenting stress, status as a first time parent, or the sex of the child. This finding depicts a sharp contrast to results of previous preventative studies, which have demonstrated parents with higher levels of parenting stress or lower levels of parenting education were less likely to benefit from similar interventions. Thus, results of this study are particularly telling, as it suggests that the format utilized and the strategies covered were beneficial to all parents who participated in the program.

Additional linear regression analyses were conducted with changes in the

standardized behavior rating scales (e.g., CBCL and BITSEA) identified as the outcome variables. Results of these analyses identified preparticipation level of parenting stress to be a significant predictor variable. Preparticipation level of parenting stress accounted for 14.5% of the variance in the CBCL Total Problems change score and 9.5% of the variance in the BITSEA Total Problems score. These findings are not altogether surprising, given that these outcome measures were based upon parental perception, whereas the HRC data were driven by more objective observations and frequency counts made within the home and community setting. Previous research has demonstrated that parenting stress can negatively impact parent perception of their child's behavior (Webster-Stratton, 1990). These negative perceptions in turn have been shown to negatively influence parenting practices and increase the likelihood of engagement in negative parent-child interactions. This multidirectional relationship between parenting stress, ineffective parenting practices, and childhood disruptive behaviors is a plausible explanation for why this predictor variable is accounting for a small portion of the variance of this model.

Parent Outcomes

Does parenting efficacy significantly differ at preparticipation versus postparticipation?

Parenting efficacy is defined as the degree to which parents expected to competently and effectively perform their role as parents, with low parenting efficacy being predictive of increased risk of child CP (Sanders & Woolley, 2005). Results of the current study indicated that prior to engagement in the PBPT prevention program, parents

endorsed a moderate level of parenting efficacy. Following participation in the PBPT program, parents endorsed a high level of parenting efficacy. That is, parents reported increased knowledge of and ability to use effective behavior management strategies following their child's engagement in disruptive behaviors. This change in parenting efficacy from preparticipation to postparticipation was shown to be significant and resulted in an effect size that was large in magnitude. Additional information regarding parenting efficacy was gained from the program evaluation form. Results demonstrated that the overwhelming majority of parents (96.7%) reported that they felt their child had benefited from changes in their parenting strategies and that they were successful in decreasing their child's misbehaviors (98.4%). Taken together, these results suggest that parents felt more efficacious about their parenting abilities after their participation in the PBPT program.

Considerable evidence supports the importance of strengthening parenting efficacy in parenting programs. Parenting efficacy has been shown to directly affect the quality of parenting practices utilized. That is, high parenting efficacy has been shown to be a protective factor for all children, especially among those with challenging temperaments (Karreman, de Haas, van Tuijl, van Aken, & Dekovic, 2010). Alternatively, low levels of parenting efficacy have been shown to be associated with negative parental affect and coercive and harsh disciplinary practices (O'Connor, Rodriguez, Cappella, Morris & McClowry, 2012). In turn, harsh disciplinary practices have been shown to be instrumental in the initial development of a coercive style of interaction between a child and a parent, which can place a child at risk for developing a

disruptive behavior disorder.

Within the current study, it is particularly noteworthy that parenting efficacy improved, despite the fact that the PBPT curriculum does not directly address this construct. These results suggested that by targeting changes in parenting strategies, parenting efficacy is also likely to improve. It is plausible that by teaching parents effective strategies that could be utilized in a variety of contexts within the home and community, they were able to quickly develop increased confidence in their ability to manage their child's typical misbehaviors. As parents gained additional opportunities to observe that their application of consistent and effective discipline strategies resulted in improvements in their child's behavior, these parenting characteristics, also considered to be a protective factor against CP development, were reinforced.

If so, what proportion of the variance observed in changes in parent efficacy ratings can be accounted for or are moderated by child and/or parent variables?

In an effort to understand possible predictive relationships of various child/parenting variables and parenting efficacy, a linear regression analysis was performed. Results demonstrated that none of the variables entered into the model were indicative of increased parenting efficacy. That is, the sex of the child, parents' status as first time parents, preparticipation level of parenting stress, maternal education level, and the CBCL change score were not predictive of the magnitude of change in parenting efficacy seen across the course of the study. This finding is particularly noteworthy given the nature of a universal prevention program, as it suggests that parents will likely benefit from increases in their parenting efficacy through participation in PBPT regardless of

these predictor variables.

Does rate of engagement in effective parenting practices significantly differ at preparticipation versus postparticipation?

The current study evaluated the effect of PBPT on a number of pertinent parenting variables. Results of these analyses revealed significant changes in relevant parenting practices following participation in the PBPT program. Parents were more consistent in implementing consequences for misbehaviors, more likely to provide effective commands, and more likely to utilize an effective timeout as a discipline strategy. Significant changes in parenting styles were also observed in this study. Prior to participating in PBPT, most parents were using permissive disciplinary strategies, whereas the overwhelming majority of parents were using an effective disciplinary approach at postparticipation. Of particular importance is the fact that no parents were using a harsh disciplinary style following participation in the PBPT program. Additional beneficial changes were noted among the shifts observed in positive parenting practices, as a larger percentage of parents were endorsing an optimal interaction ratio with their child at postparticipation. Taken together, the current study provided preliminary evidence of the positive proximal impact the PBPT program has on parenting practices.

There is a robust literature demonstrating the profound impact parenting practices have on the emotional and behavioral development of a child. Cycles of coercive behaviors between parent and child, comprised of harsh and inconsistent discipline, are clearly one of the earliest and most powerful antecedents of antisocial behavior (Reid et al., 1999). The current study demonstrated that parent discipline consistency rates

increased from 48% at preparticipation to 88% at postparticipation. The theoretical underpinnings of the coercive model posit that parental ability to engage in consistent discipline clearly communicates to a child the futility of escalating their behaviors, as they are no longer inconsistently negatively reinforced for this escalation. An additional positive outcome was that no parents were classified as having a harsh disciplinary style at postparticipation. Harsh parenting has been implicated as a major contributing factor in failing to teach appropriate regulatory coping strategies to children, through inappropriate modeling of escalated negative emotional reactions and behaviors. Co-occurring harsh parenting and poor emotional regulation are predicted to sustain and amplify one another, which places a child at significantly greater risk for developing clinical CP (Scaramella & Leve, 2004). Thus, the current study's demonstration of marked shifts in parenting styles is further indicative of the positive proximal impact of the PBPT program.

Research has also demonstrated the importance of engaging in specific parenting strategies aimed at reducing the frequency of children's engagement in disruptive behaviors. The PBPT curriculum was specifically designed to highlight the most pertinent components of traditional BPT, based upon meta-analytic findings that have identified parenting strategies that have the greatest effect on children's misbehaviors (Kaminski et al., 2008). An effective command-timeout sequence has been implicated as one of the most pertinent and influential parenting strategies for young children (McMahon & Forehand, 2003), and thus, this sequence was taught to parents who participated in the PBPT program. In the current study, parent's use of effective commands increased from 13.1% to 95.1% over the course of the study. Parent ability to

utilize effective commands can be conceptualized as a discriminative stimulus. That is, a parent's command serves as a cue for display of a desired response (e.g., compliance). Consequently, parent ability to use effective commands should also increase the effectiveness of other reductive behavior strategies, such as timeout, based upon previous research findings (Mackay, McLaughlin, Weber, & Derby, 2001).

Parents also demonstrated an increase in the use of an effective timeout sequence from 11.5% at preparticipation to 96.7% at postparticipation. Parent's consistent use of timeout as a consequence (e.g., negative punishment) for their child's misbehavior would be expected to reduce the frequency of their child's misbehaviors, based upon behavioral theory. Perhaps most importantly, the current study demonstrated that by teaching parents use of a structure timeout sequence they also significantly decreased their use of permissive or harsh disciplinary tactics. Taken together, when considering the utility of the PBPT curriculum in regards to the goals of a universal prevention program, the current study demonstrated that participation in this program resulted in a significant positive impact on proximal factors associated with the development of CP.

The importance of positively based parenting strategies has also been highlighted in the literature. On a basic level, teaching parents to attend in a positive manner to their child's appropriate behaviors should cause an increase in the frequency of the child's engagement in these behaviors. By differentially reinforcing the child's prosocial behaviors, the likelihood that the child will engage in disruptive behaviors should also decrease. More broadly speaking, one of the primary goals for teaching parents to interact in a consistently positive manner with their child is so they can become more effective

reinforcing agents (McMahon & Forehand, 2003). Furthermore, parents are able to model appropriate and prosocial behaviors for their child, which should increase the likelihood that their child will engage in similar behaviors. In the current study, parents were able to double their positive to negative interaction ratio (2:1 to 4:1) with their child following participation in PBPT. The combination of increasing parental salience as a reinforcing agent while also modeling prosocial behaviors is a positive outcome of the study that is punctuated by the brevity of the PBPT program.

If so, what proportion of the variance observed in changes in rates of engagement in effective parenting practices can be accounted for or are moderated by child and/or parent variables?

To assess for the presence of any predictive relationships between child/parenting variables and continuous parenting practice variables, linear regression analyses were performed. Results of these analyses indicated that none of the variables entered into the model were indicative of changes in discipline consistency, rate of timeout utilization, or the parenting composite score. That is, the sex of the child, parents' status as first time parents, preparticipation level of parenting stress, maternal education level, and the CBCL change score were not predictive of the magnitude of change seen in these parenting practices across the course of the study. Similarly, logistic regression analyses conducted for utilization of effective commands and a timeout procedure were both nonsignificant, again suggesting none of the predictor variables were predictive of change in the outcome variables.

As discussed with regards to the child outcome variables, the clinical implications

for these nonsignificant models are noteworthy. When constructing a universal prevention program, the intention is to provide the same service to all individuals included within that population. If it was determined that certain subgroups of individuals within this population were differentially benefiting, it would hinder the ability to effectively disseminate the program at a universal level. Thus, these regression analyses provide additional support for the universal framework of PBPT, as they demonstrate that all children and parents appear to benefit equally from their participation in the program with regards to parenting practice outcome variables.

A final logistic regression analysis was conducted with the optimal interaction ratio being identified as the outcome variable. Results of this analysis revealed that the overall model was significant; however, it was noted that none of the predictor variables were significant at the $p < .05$ level, although the sex of the child was closely approximating ($p = .051$). While it is unusual to obtain a significant model and not identify any significant predictor variables, it is not altogether surprising given the small sample size of the current study. Previous research has demonstrated that the sex of the child does impact the parenting practices a child experiences. For example, stereotypical incongruent behavior of the child (e.g., externalizing behaviors in girls, internalizing behavior in boys) is associated with parental harshness that actively alters expected socialized trajectories or serves as a hostile response to unexpected behaviors (Kim, Arnold, Fisher, Zeljo, 2005). Given this finding, it would be reasonable to conclude that parents may demonstrate greater change with their daughters versus sons after learning about the importance of the optimal interaction ratio.

To what extent do parents perceive the PBPT program to be socially acceptable and feasible?

The Surgeon General has declared that our nation is facing a public crisis in mental health for children and adolescents (Kelleher, 2001). Growing concerns have surfaced as the field of psychology has gained an awareness of the significant number of children who are experiencing clinically concerning behavioral problems and are not receiving adequate treatment. Current research suggests that parent's will be most likely to share their concerns regarding their child's behavior with their pediatrician, who will then oftentimes make a referral to a child psychologist (Axelrad et al., 2008).

Unfortunately, the overwhelming majority of these patient referrals fail to yield additional services, with research demonstrating that of those patients referred to a child psychologist only 13% attend one office visit within a period of 6 months (Kelleher, 2001). Numerous factors have been identified as contributing to lack of follow-through including appointment delays and barriers related to contacting an unfamiliar office and provider. Dissemination of a clinical program within the setting of a primary care provider may address both of these concerns.

Within the current study, the PBPT prevention program was disseminated in the same clinical setting in which patients attended their pediatric appointments. By providing services within this pediatric setting, a number of barriers were effectively addressed including reduced stigmatization and increased accessibility (e.g., clinic familiarity and ease of location). Furthermore, initial contact was generally made with a patient who was referred to the PBPT program on the same day as their pediatric well-

child appointment, which significantly decreased the general wait-time for patients admitted into the program (e.g., immediacy barrier). Additionally, the rapport and trust created between the patient and the medical professionals was likely generalized to the PBPT providers, increasing the likelihood of follow through due to this positively established relationship. Finally, by having the pediatrician “prescribe” the PBPT program, patients may have expected the program to be helpful (e.g., placebo effect) and complied with the authority of the pediatrician’s “prescription.” Descriptive statistics indicated that a total of 92 patients were referred to the PBPT prevention program, while 74 patients attended at least one session of the program. Thus, 80.4% of patients followed through with a referral from their pediatrician to participate in the program, which eclipses the 41% referral follow-through rate demonstrated on previous studies (Axelrad et al., 2008).

In addition to barriers to treatment, another factor that has been implicated in the current mental health crisis is the lack of feasible clinical programs. Current research suggests that approximately one third of families that present to treatment dropout prematurely (McMahon & Forehand, 2003). One of the primary reasons for the high rate of attrition is the extensive length of treatment, ranging as much as 13 to 27 sessions (Sanders, 1999). A significant advantage cited for use of a universal prevention program, relative to higher tiered levels of prevention or intervention programs, is that they are able to meet the needs of a large number of parents through the use of a much lower dosage of treatment. Given that recent meta-analyses have demonstrated that specific BPT treatment components are consistently associated with greater improvements in

disruptive behaviors (Kaminski et al., 2008), these program characteristics ought to be emphasized in universal prevention programs. A strength of the PBPT curriculum is that it efficiently incorporates the most efficacious treatment components into its brief program content (e.g., positive interactions with child; time out; consistent responding; modeling; and practicing with own child), allowing it to be disseminated in a brief two-session format.

Results of the current study indicated that of the 74 patients originally enrolled in the PBPT program, 61 patients successfully completed the program in its entirety. This reflects a dropout rate of 17.6%, which is significantly below the standard dropout rate of 33% shown in most other BPT programs. This is particularly noteworthy, as the overwhelming majority of children were not exhibiting clinically concerning levels of disruptive behaviors at preparticipation. Given the absence of clinical impairment, it could be inferred that parents were experiencing less parenting distress, and thus, would have less incentive to participate in a clinical program focused on improving their parenting skills. Nevertheless, parents demonstrated significantly improved engagement in effective parenting practices at postparticipation in comparison to preparticipation. Thus, this finding is particularly promising, as it suggests that parents were able to devote the time needed to complete a universal prevention program that is short in duration and still experience the positive benefits associated with BPT.

Results of the program evaluation form provide further data supporting the social acceptability of the PBPT program. The overwhelming majority of parents indicated that they found their participation in the program worthwhile and indicated that the strategies

discussed were feasible and effective in managing their child's misbehaviors. Furthermore, all parents who completed the PBPT program indicated that they would recommend this program to their friends and family members. Taken together, results from the program evaluation form indicate that parents who completed the PBPT program found it to be both socially acceptable and feasible.

Limitations and Future Directions

Despite the promising findings reported above, several limitations of the current study should be carefully considered when interpreting the results. First, data used in this study were extracted from an existing database via medical chart review. This was deemed appropriate given the exploratory nature of this research project. However, this data collection strategy preempted the opportunity to compare this population to a control group. It is reasonable to believe that such dramatic shifts in child and specific parenting behaviors would not occur in such a short period of time absent participation in the PBPT program. This contention is supported by previous research completed on the PBPT prevention program which demonstrated significant and rapid shifts in child and parenting behaviors following participation in the PBPT program (Malmberg & Field, in press). Nevertheless, the lack of a control group precludes the development of causal conclusions about the effectiveness of the PBPT prevention program. Conducting additional research with the inclusion of a control group is a necessary future direction for this research, as it would strengthen the conclusion that effects observed were due to prevention program components.

A second limitation of the current research project was the absence of longitudinal assessment. Given that the primary purpose of the PBPT program is to prevent the development of disruptive behavior disorders, longitudinal follow-up will be necessary in order to demonstrate long-term preventative impact. Although previous research has demonstrated that at-risk children and parents maintain immediate PBPT treatment gains at a 6-month follow-up (Malmberg & Field, in press), these findings should be replicated within the context of a universal prevention program disseminated in a primary care setting. The current study did replicate previous findings that suggested that PBPT is effective in creating immediate change in rates of child disruptive behaviors, effective parenting strategies, and parental efficacy. Despite the absence of longitudinal assessment, it is important to note that preventative science emphasizes the importance of evaluating prevention efforts at both the proximal and distal level, both of which should be based upon a well-developed underlying theoretical model. That is, prevention efforts aimed at preventing the development of disruptive behavior disorders must examine the efficacy of prevention programs in terms of the immediate impact they have on targeted antecedents. As previously discussed, the key antecedents of CP are found in the coercive interactions between parent and child (Patterson et al., 1992). The results of this study suggested that participation in the PBPT program significantly impacts these targeted antecedents at a proximal level. Nonetheless, longitudinal maintenance of proximal effects has yet to be demonstrated within a context consistent with the current study.

The ability to generalize the findings to diverse populations is also questionable. Patients identified for inclusion in this study were quite homogenous based upon

ethnicity, intact family status, and income. While this reflected the natural referral patterns of pediatricians, it could, and likely did, constitute a sampling bias. For example, an overwhelming majority of parents included in this sample were relatively well educated. It is possible that the condensed instructional format of the program would have been less effective with less educated parents (e.g., those without a high school diploma). Further, it should not be assumed that parenting advice offered is equally pertinent to parents of all cultures. Thus, generalization of the conclusions of the current research should be limited to children and parents with similar demographic characteristics. Future research should be conducted to determine the specific parameters under which PBPT is efficacious.

Another limitation to the current research project pertains to the assessment measures used to evaluate child and parenting variables. All rating scale assessments utilized in this study, as well as the pre- and postparticipation interviews, relied on primary caregiver self-report, which may be subject to bias when compared to direct observations of child and/or parenting behaviors. However, it is important to note that the improvements shown on these assessment measures were consistent with improvements seen on the HRC. Given that the HRC reflects parent's direct observation of their child's engagement in discrete disruptive behaviors, these data should be less susceptible to the limitations seen in behavior rating scales (Nadler & Roberts, 2013); however, there continue to be concerns regarding possible self-monitoring effects. Thus, future research projects should include direct observational measures conducted by a trained observer (e.g., psychologist), which would provide further support as to the efficacy of PBPT as a

universal prevention program.

A final limitation seen in the current study is the small sample size. Although a small sample size was appropriate given the exploratory nature of the study, it is important to recognize that this necessitates replication with larger sample sizes to cross-validate findings. Furthermore, a larger sample size would have allowed for a more sensitive analysis of moderating variables and whether these variables impact treatment success, in part due to increased statistical power of analyses. Thus, future research projects should be conducted with a larger sample size for purposes of replication, as well as further evaluation of the possible moderating treatment variables.

Future research should also seek to determine if certain characteristics are predictive of patients who do not benefit from participation in the PBPT program. For example, previous research has shown that parents with serious mental health problems, single parent households, or economically disadvantaged families have been implicated as factors that hinder treatment effects (Chacko et al., 2009; Lundahl et al., 2006). This is likely due to the fact that parent willingness and ability to learn and apply management strategies is crucial to BPT success. Although identifying younger children with less severe CP may offset the lack of resources necessary for success in treatment, there is a possibility that the PBPT program may not sufficiently address the needs of all families. If specific characteristics are found to be predictive of patients who do not benefit from the PBPT program, additional research should be conducted to determine what screening measures will most efficiently and accurately identify these families. This will allow for these families to be referred to more comprehensive services immediately, rather than

needing to fail a lower dosage of treatment prior to being referred for additional services.

A final future research direction should focus on the sustainability of similar programs in other primary care settings. Various characteristics of the current PBPT program could potentially be modified to determine if it remains efficacious following these manipulations. One characteristic that should be examined is the provider of these services. Within the current study, graduate students from a local university psychology doctoral program were utilized to disseminate these prevention services; however, this may not be possible in cities or rural communities where a local university is not present. Previous research has been conducted evaluating the efficacy of using medical staff (e.g., nursing staff) to disseminate behavior management strategies to parents within a primary care setting; however, results of these studies have been mixed (Bower et al., 2001; Turner & Sanders, 2006). Thus, it will be important to conduct additional research examining the utility of using medical staff as the provider of PBPT services in order to determine if this would be a cost-effective and feasible modification. Another possible modification that may increase the sustainability of the PBPT program is format of service delivery. More specifically, it may reduce program costs by utilizing a group therapy format instead of individual. Previous research has been conducted on dissemination of secondary and tertiary prevention programs using this modality (Berkovitz et al., 2010); however, this format has not been evaluated with universal prevention programs. Therefore, future research should compare the efficacy of PBPT using these different service delivery formats.

Conclusions

This study sought to evaluate whether the PBPT universal prevention program resulted in immediate impact on proximal antecedents relevant to the developmental trajectories of young children, as this would provide preliminary evidence of the preventative impact of PBPT on later CP. Results of the current study demonstrated that children and parents that participated in the PBPT program demonstrated consistent positive effects at postparticipation in comparison to preparticipation. More specifically, children were engaging in significantly fewer disruptive behaviors (e.g., noncompliance, and tantrums) and parents were engaging in a significantly higher number of effective behavior management parenting strategies. Parents were also endorsing a reduction in their level of parenting stress and an increase in their level of parenting efficacy. Results further demonstrated that referral follow-through rates were higher and dropout rates were lower in comparison to what has been reported in the literature. Finally, the social acceptability and feasibility of the PBPT program was found to be high.

These findings are especially notable given the nature of the change strategy was only two sessions in duration. Additional unique aspects of this study included (a) the application of a modified and very brief version of BPT as a universal prevention strategy, (b) the strategic targeting of very young children but who were not identified based upon the presence of risk factors or elevated levels of CP, and (c) dissemination of a universal prevention program within a primary care setting. Data yielded through this study suggested that PBPT has promise as a brief, universal prevention program which can be widely disseminated to support parents in learning effective strategies for

managing their young child's typical misbehaviors, thereby preventing the development of clinical levels of CP and strengthening the practices of all parents. Additional empirical evaluation of PBPT is warranted given these initial promising findings.

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APPENDICES

Appendix A
Program Introductory Letter

Program Information and Instructions

Welcome to the Behavioral Pediatric Prevention Program! You might already be aware that the purpose of this program is to provide **FREE** behavioral prevention services to all 2-year-old children and their parents. Your child's age places him or her within a critical period of emotional and behavioral development. This program is designed to help you respond to and manage the emotional and behavioral challenges that arise during this developmental period. Your child will exhibit such behaviors simply as a result of the developmental stage they are in; however, carefully responding to such behaviors now will help ensure that bigger problems won't develop over the next several years.

Your participation will involve simply attending three appointments with one of our behavior specialists. These appointments can almost always be scheduled at your convenience. By doing so, you will receive training in the use of strategies that will reduce your child's negative behaviors and strengthen your confidence as a parent. You will also be taking a great step toward preventing further problems. Included in this envelope are important clinical measures that you should complete **prior to your first appointment**. These measures provide the information needed to ensure that you will achieve the best results from participating in the program. Below is a brief description of each of these clinical measures.

What you need to complete prior to your first visit:

1. *Form 1: Behavioral Pediatric History*: Please answer all items on this questionnaire.
2. *Form 2: Child Behavior Checklist*: Please fill out this form reflecting your views of your child's behavior. This measure contains a list of items that describe children. Think of your own child's behavior now or **within the past 2 months** and circle a 2 if the item is very true or often true, a 1 if the item is somewhat or sometimes true, and a 0 if the item is not true of your child.
3. *Form 3: Brief Infant-Toddler Social and Emotional Assessment*: This form is much like the previous form. Think of your child's behavior **over the past month** and answer by circling 0, 1, or 2 using the same guide (0 = not true, 1 = sometimes true, 2 = very true).
4. *Form 4: Parental Stress Scale*: Think of each item in terms of how your relationship is with your child. Please indicate the degree to which you agree or disagree with each of the items by placing the appropriate number in the space provided.
5. *Home Record Card*: This card allows you to record how often your child is performing certain behaviors. We are specifically interested in how often your child is being noncompliant, having tantrums, and being verbally or physically aggressive. At the top of each column a particular behavior is specified in blue ink (e.g. noncompliance, tantrums). Also at the top of the column are examples of each behavior (listed in black ink). Each row represents a separate day of the week. Please record one tally mark for each occurrence of each behavior in the box for that day of the week. It is important to begin collecting this data **IMMEDIATELY** after receiving this packet and to be sure to collect data on each day. It might be easiest to remember to do this if you place the card in an obvious place such as on the door of your refrigerator. Continue to collect this data until your first appointment.

Please be aware that information provided during your participation in this program will be kept confidential in a manner consistent with federal and state regulations. Confidential information could be required to be reported to a legal authority if threats of abuse (child/elderly) and or harm (toward self/others) are reported. **Please bring the completed forms and card(s) with you to your first appointment.** Please feel free to call Katie at (435) 792-1940 if you have any questions. Thank you and we look forward to seeing you soon.

Appendix B

Behavioral Pediatric History Form

Behavioral Pediatric History

Please fill out this form as completely and accurately as you can. If you are unsure of how to answer a certain item, circle it and we will be happy to discuss it with you. All information will be treated confidentially.

Today's date _____

Child's Name _____

Child's Pediatrician _____

Date of Birth _____ Age _____

M F Ethnicity _____

Mother's Name _____

Father's Name _____

Marital status _____

Stepparent's Names (if applicable) _____

Child resides with mother father both

Other children in the home

Name	Sex	Age

Family Background

Mother

Highest Level of Education Completed _____

Current Employment _____

Hours Spent at Home _____

Father

Highest Level of Education Completed _____

Current Employment _____

Hours Spent at Home _____

	very good	good	fair	bad	very bad
Level of marital satisfaction during past month	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall functioning of your family in the past month	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Family financial situation currently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please all that apply:

- recent stressful events (e.g. deaths, moves)
- ongoing stressors (e.g., financial problems)
- relatives have been treated for emotional/behavioral problems
- chronic medical/psychiatric problems exist in the family (e.g., diabetes, depression)

Brief explanation for any items:

Behavioral and Emotional Assessment

Of the commands you give in a day, what percentage would you estimate your child obeys: _____

	multiple times			
	daily	a week	weekly	rarely
How frequently does your child tantrum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How frequently is your child physically aggressive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Describe a typical day using short descriptors (e.g., lunch, school, play). Start with "wake up" and end with "bed."

6-7 a.m. _____ 10-11 a.m. _____ 2-3 p.m. _____ 6-7 p.m. _____
 7-8 a.m. _____ 11-12 p.m. _____ 3-4 p.m. _____ 7-8 p.m. _____
 8-9 a.m. _____ 12-1 p.m. _____ 4-5 p.m. _____ 8-9 p.m. _____
 9-10 a.m. _____ 1-2 p.m. _____ 5-6 p.m. _____ 9-10 p.m. _____

How many hours per day does your child watch TV/play video games _____

Behavior Management

Who ordinarily disciplines _____ Do parents agree on discipline method Yes No Sometimes

How is discipline handled _____ How often does discipline occur _____

What discipline is most effective _____

What discipline has not worked _____

Developmental and Medical History

Please note age at which your child did the following:

Sat alone _____ mo. Talked (one word) _____ mo. Walked _____ mo.
 Crawled _____ mo. Talked (sentences) _____ mo. Toilet Trained _____ mo.

Complications during the pregnancy or delivery _____

Child's current health problems _____

Date of child's last medical visit: _____ Reason: _____

Please if your child has experienced any of the following:

- | | |
|---|---|
| <input type="checkbox"/> Hospitalization reason: _____ date: _____ | <input type="checkbox"/> Vision problems |
| <input type="checkbox"/> Emergency room visit reason: _____ date: _____ | <input type="checkbox"/> Hearing problems |
| <input type="checkbox"/> Significant illnesses _____ | <input type="checkbox"/> Speech problems |

Current Concerns and Strengths

What concerns, if any, do you have about your child at this time?

List three things you think your child does well

Appendix C
Home Record Card

HOME RECORD CARD

Start date: _____

Day	Target Behaviors						
	Noncompliance (after given two chances to comply)	Tantrums (scream, cry, yell, flopping, excessive emotional upset)	Physical Aggression (hit, kick, bite, pinch, spit, throw, push, etc.)	Consequences Y=Yell; reprimand B=Bribe, rewards S=Spank P=Privilege Loss R=Reason, talk G=Room Grounding O=Other strategy			
1							
2							
3							
4							
5							
6							
7							
Total							

Preparticipation Home Record Card

HOME RECORD CARD

Start date: _____

Day	Target Behaviors					Consequences Y=Yell; reprimand B=Bribe, rewards S=Spank P=Privilege Loss R=Reason, talk G=Room Grounding O=Other strategy	Parent-Child Play (10-15 minutes per day)
	Noncompliance (after given two chances to comply)	Tantrums (scream, cry, yell, flopping, excessive emotional upset)	Physical Aggression (hit, kick, bite, pinch, spit, throw, push, etc.)	Timeout (as discussed in your appointment)			
1							
2							
3							
4							
5							
6							
7							
Total							

Postparticipation Home Record Card

Appendix D
Preparticipation Interview

Pre-Treatment Interview

1. Have you sought parenting advice from any of the following (circle all that apply):
 - a. Established my own parenting strategies
 - b. Self-help books/magazines
 - c. Help from friends/family
 - d. Formal classes/workshops
 - e. 1:1 training with a professional

2. When giving your child a command, how many chances do you give him/her to comply before a consequence is implemented, on average:
 - a. 1-2
 - b. 3-4
 - c. 5-6
 - d. 7+

3. Over the past several weeks, estimate the rate of your child's compliance (via estimated percent) within the first 1-2 prompts provided: _____

4. Over the past several weeks, estimate how frequently your child is engaging in tantrums:
 - a. Daily: Indicate how many per day _____
 - b. Weekly: Indicate how many per week _____

5. Over the past 2-3 weeks, estimate how often you engage in at least 15 minutes of 1:1 playtime with your child (do not include non-play parent-child activities such as watching TV/movies together):
 - a. Daily: Indicate how many per day _____
 - b. Weekly: Indicate how many per week _____

% non-directive _____ % educational _____ % structured _____

6. In thinking about your overall interactions with your child (both positive and negative), what would you say is your overall ratio of positive to negative interactions?

7. On a scale of 0-10 (0 = no confidence, 10 = complete confidence), how confident do you feel about your knowledge of specific strategies for managing your child's misbehaviors?

8. On a scale of 0-10 (0 = no confidence, 10 = complete confidence), how confident do you feel about your abilities to use specific behavior management strategies for your child's misbehaviors?

9. Which of the following misbehaviors do you currently implement a consequence for with your child:
 - a. Noncompliance
 - b. Tantrums
 - c. Physical Aggression
 - d. Whining
 - e. Breaking a house rule
 - f. Other: _____

10. The following is a list of things that parents have reported they do when their child misbehaves (e.g. noncompliance, tantrums, aggression, etc.). How often do you do each of the following things when your child misbehaves?

1=Never, 2=Seldom, 3=Sometimes, 4>About half the time, 5=Often, 6=Very Often, 7=Always

- a. Ignore it.
- b. Raise your voice (scold or yell)
- c. Threaten to punish him/her (but not really punish him/her)
- d. Time out
- e. Take away privileges (like TV, playing with toys)
- f. Give your child a spanking
- g. Discuss the problem with child/Reason with him/her
- h. Bribe child
- i. Other _____

11. Regarding the previous question, please rank (up to) your top 3 choices regarding which discipline methods you **prefer** to use? Which discipline methods do you feel are most **effective** (rank up to 3)?

Prefer: 1. _____ 2. _____ 3. _____

Effective: 1. _____ 2. _____ 3. _____

12. If you currently use a timeout procedure, please identify characteristics of the timeout that you use:

- a. Use a room
- b. Use a chair
- c. Place child in a corner/wall
- d. Use a timer
- e. If the child gets out of timeout, how do you address this?
 - i. Allow timeout to be over
 - ii. Reprimand
 - iii. Put back
 - iv. Back-up room
 - v. Other
- f. Have specific requirements for being able to get out of timeout. If so, what are the requirements: _____
- g. If child is placed in timeout for noncompliance, do they have to return to the task following completion of their timeout: _____

Appendix E
PBPT Parent Handout

Three Simple Steps to Success

Step 1: Create a positive relationship with your child and use your attention to encourage good behavior.

- **Your attention is powerful:** Try to "catch your child being good" many times throughout the day. As you point out what you like and ignore what you don't, your child will respond by doing what you like more often.
- **The 5:1 rule:** For every 1 time that you have to "get after" or be negative with your child, try to find 5 ways to be friendly or positive with them.
- **Play their game:** Your child loves to play with you, especially when you play *their* way. Find 10 minutes each day where you play on the floor with them, doing what they want to do! To be sure it is their game, don't ask question or give commands. Instead, give praise, describe what they are doing while playing, and imitate them whenever you can.

Step 2: Use effective commands when you want your child to do something.

- **No questions:** Don't ever give a command by asking a question.
- **Decide first:** Give commands only when you have time and are willing to follow through.
- **Make it simple:** Use your child's words, make eye contact, move closer to them, and break down big jobs into smaller jobs. If it is a really big job, you can even help so long as your child keeps working with you.

Step 3: Use timeout as a simple, effective consequence for helping your child follow your commands.

- **Timeout is a proven method** for shaping your child's behavior, and it will not harm your child. Plus, it's easy to use!
- **Follow these steps:**
 - Give simple, effective command.
 - Wait 5 seconds after giving a command. If your child follows your command, give praise and encouragement!
 - After 5 seconds, if your child isn't obeying, place them in timeout and say, "Because you didn't (desired behavior), you have to go to timeout. Sit here and be quiet."
 - **Remember to:**
 - Use an adult-sized chair in a corner.
 - Have your child stay in timeout for 1 minute per year.
 - Don't allow your child to get out of timeout until they've been quiet for 30 seconds.
 - Make sure your child finishes the original task immediately after timeout!
 - Timeout is time away from everything: no talking, playing, watching TV, etc.
 - If your child gets out of the timeout chair before time is up, use a back-up room for one minute and then bring them back to the chair to finish timeout.
 - Don't ever use a timer; just keep your eye on a clock.

Appendix F
Postparticipation Interview

Post-Treatment Interview

1. When giving your child a command, how many chances do you give him/her to comply before a consequence is implemented, on average:
 - a. 1-2
 - b. 3-4
 - c. 5-6
 - d. 7+

2. Over the past week, estimate the rate of your child's compliance (via estimated percent) within the first 1-2 prompts provided: _____

3. Over the past week, estimate how frequently your child is engaging in tantrums:
 - a. Daily: Indicate how many per day _____
 - b. Weekly: Indicate how many per week _____

4. Over the past week, estimate how often you engage in at least 15 minutes of 1:1 playtime with your child (do not include non-play parent-child activities such as watching TV/movies together):
 - a. Daily: Indicate how many per day _____
 - b. Weekly: Indicate how many per week _____

% non-directive _____ % educational _____ % structured _____

5. In thinking about your overall interactions with your child (both positive and negative), what would you say is your overall ratio of positive to negative interactions with him/her?

6. On a scale of 0-10 (0 = no confidence, 10 = complete confidence), how confident do you feel about your **knowledge** of specific strategies for managing your child's misbehaviors after completing the program?

7. On a scale of 0-10 (0 = no confidence, 10 = complete confidence), how confident do you feel about your **abilities** to use specific behavior management strategies for your child's misbehaviors after completing the program?

8. Which of the following misbehaviors do you currently implement a consequence for with your child:
 - a. Noncompliance
 - b. Tantrums
 - c. Physical Aggression
 - d. Whining
 - e. Breaking a house rule
 - f. Other: _____

9. The following is a list of things that parents have reported they do when their child misbehaves (e.g. noncompliance, tantrums, aggression, etc.). How often do you do each of the following things when your child misbehaves?

1=Never, 2=Seldom, 3=Sometimes, 4=About half the time, 5=Often, 6=Very Often, 7=Always

- a. Ignore it.
- b. Raise your voice (scold or yell)
- c. Threaten to punish him/her (but not really punish him/her)
- d. Time out
- e. Take away privileges (like TV, playing with toys)
- f. Give your child a spanking
- g. Discuss the problem with child/Reason with him/her
- h. Bribe child
- i. Other _____

10. Regarding the previous question, please rank (up to) your top 3 choices regarding which discipline methods you **prefer** to use? Which discipline methods do you feel are most **effective** (rank up to 3)?

Prefer: 1. _____ 2. _____ 3. _____

Effective: 1. _____ 2. _____ 3. _____

11. If you currently use a timeout procedure, please identify characteristics of the timeout that you use:

- a. Use a room
- b. Use a chair
- c. Place child in a corner/wall
- d. Use a timer
- e. If the child gets out of timeout, how do you address this?
 - i. Allow timeout to be over
 - ii. Reprimand
 - iii. Put back
 - iv. Back-up room
 - v. Other
- f. Have specific requirements for being able to get out of timeout. If so, what are the requirements: _____
- g. If child is placed in timeout for noncompliance, do they have to return to the task following completion of their timeout: _____

Appendix G
Program Evaluation Form

Child's Name _____

Please mark the box that best indicates your agreement with each statement.

	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
1. I feel like using these strategies has helped my child's behavior improve.					
2. I feel like I was successful in decreasing my child's tantrums and noncompliance.					
3. I feel like my relationship with my child improved as I addressed problem behaviors.					
4. I feel like I play more with my child than before.					
5. I can see that my child has benefited from changes in my parenting strategies and my expectations.					
6. It felt difficult to use timeout with my child.					
7. Trying to use timeout took too much time.					
8. It was hard to find time to play with my child.					
9. I think that there are easier or better ways of improving my child's behavior other than using timeout.					
10. I would rather change my child's behavior through the use of positive interactions alone than by using positive interactions and timeout together.					
11. I would recommend this program (increasing positive attention and using timeout consistently) to my friends, neighbors, or family members as a way to improve their children's behavior.					

Please rank the following strategies for addressing misbehavior. Place a "1" by your first choice, a "2" by your second choice, and so forth. Rank them first by what you would prefer to do and then rank them according to how you think they are most effective.

Prefer to do		Most Effective
_____	Increasing positive interactions alone	_____
_____	Using reprimands	_____
_____	Using positive attention and timeout together	_____
_____	Promising a reward or treat	_____
_____	Using timeout alone	_____
_____	Using some other punishment	_____

Appendix H
Parenting Practices Rubric

Child's Name _____

Instructions for Therapist: Circle "Yes" if parent is engaging in each parenting practice, circle "No" if parent is not currently engaging in this particular parenting practice.

	YES	NO
1. When giving their child an instruction, are parents providing 1-2 commands prior to implementing a consequence?		
2. Are parents overall interactions with their child reaching a 4-5:1 Positive to Negative ratio?		
3. Is timeout being used as the primary discipline strategy for their child's misbehaviors?		
4. Are parents demonstrating consistency ($\geq 80\%$) in implementing a consequence for inappropriate behaviors?		
5. Are parents implementing timeout for noncompliance, tantrums, and aggression?		
6. Is timeout being implemented appropriately (e.g. in a chair, one minute per year, quieting down prior to termination of timeout, returning to compliance task following timeout)?		

Total Engagement Score (0-6): _____

CURRICULUM VITAE

JESSICA L. MALMBERG

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EDUCATION

- 8/2013 Ph.D., Utah State University (Logan, UT)
 Combined Clinical/Counseling/School Psychology
 (APA Accredited)
 Dissertation: *Preventative behavioral parent training in a primary
 care context: Initial evaluation of a universal prevention program
 for disruptive behavior disorders.*
- 2011 Ed.S., Utah State University (Logan, UT)
 School Psychology (NASP Approved)
 Thesis: *Preventative behavioral parent training: A preliminary
 investigation of strategies for preventing at-risk children from
 developing later conduct problems.*
- 2008 M.S., Utah State University (Logan, UT)
 Psychology
- 2005 B.S., Utah State University (Logan, UT)
 Major: Psychology, Minor: English
 Graduated *magna cum laude*

HONORS & AWARDS

- 2013 Internship Professionalism Award, Children's Hospital Colorado
- 2011 Trainee of the Year, Center for Persons with Disabilities, Utah State
 University
- 2011 Bertoch Scholarship (\$1000), Utah State University Psychology
 Department
- 2009 Intermountain Graduate Research Symposium, Presenter Award
- 2008 Student Presenter Grant (\$150), Society for the Advancement of
 Behavior Analysis
- 2006 – 2012 Departmental Travel Award (7 Awards of \$300), Utah State
 University

2006 – 2011 Graduate School Travel Award (6 Awards of \$300), Utah State University

CLINICAL EXPERIENCE

- 7/12 – Present **Pediatric Health Psychology Predoctoral Internship**
(APA Accredited)
Children’s Hospital Colorado (Aurora, CO)
- 5/11 – 6/12 **Clinical Child/Pediatric Psychology Practicum**
Intermountain Healthcare Budge Clinic (Logan, UT)
- 9/10 – 6/12 **Pediatric Psychology Practicum**
Utah State University Pediatric Feeding Clinic (Logan, UT)
- 7/10 – 6/12 **Clinical Assistantship**
Up-to-Three Early Intervention Program (Logan, UT)
- 9/10 – 7/11 **Interdisciplinary Team Training**
Utah Regional Leadership Education in Neurodevelopmental Disabilities (URLEND), Autism Enhanced. Utah State University Center for Persons with Disabilities (Logan, UT) and University of Utah School of Medicine (Salt Lake City, UT)
- 9/10 – 5/11 **Counseling Psychology Practicum**
Utah State University Counseling Center (Logan, UT)
- 5/10 – 8/10 **Practicum in Psychology**
Utah State University Psychology Community Clinic (Logan, UT)
- 9/09 – 3/10 **Clinical Child Psychology Practicum**
Utah State University Psychology Community Clinic (Logan, UT)
- 8/09 – 9/10 **Clinical Child/Pediatric Psychology Practicum**
Intermountain Healthcare Budge Clinic (Logan, UT)
- 7/09 – 7/10 **Clinical Assistantship**
Clinical Services, Center for Persons with Disabilities, Utah State University (Logan, UT)
- 9/08 – 7/10 **Counseling Psychology Practicum**
Utah State University Psychology Community Clinic (Logan, UT)

- 8/08 – 5/09 **School Psychology Internship**
Weber County School District (Ogden, UT)
- 8/07 – 8/08 **Clinical Assistantship**
Utah State University Psychology Community Clinic (Logan, UT)
- 12/07 – 5/08 **Assessment Specialist**
Tooele County School District (Tooele, UT)
- 8/07 – 5/08 **School Psychology Practicum**
Davis County School District (Layton, UT)
- 1/07 – 5/07 **Counseling Psychology Practicum**
Utah State University Psychology Community Clinic (Logan, UT)

RELATED APPLIED CLINICAL EXPERIENCE

- 9/05 – 8/06 **Applied Behavioral Therapist**
Autism Support Services: Education, Research, and Training at Utah State University (Logan, UT)

RESEARCH EXPERIENCE

- 9/06 – Present **Graduate Student Researcher**
Behavioral Pediatric Research Group, Utah State University (Logan, UT)
- 9/05 – 8/06 **Undergraduate Research Assistant**
Behavioral Pediatric Research Group, Utah State University (Logan, UT)
- 9/05 – 5/06 **Undergraduate Research Assistant**
Bully Prevention Research Group, Utah State University (Logan, UT)
- 9/05 – 5/06 **Undergraduate Research Assistant**
Eating Disorders Research Group, Utah State University (Logan, UT)

PUBLICATIONS

- Malmberg, J.** & Field, C. (in press). Preventative behavioral parent training: A preliminary investigation of strategies for preventing at-risk children from developing later conduct problems. *Child & Family Behavior Therapy*.

Handwerk, M., Field, C., Dahl, A., & **Malmberg, J.** (2012). Conduct disorder, oppositional defiant disorder, and disruptive behavior disorders. In M. Hersen & P. Sturmey (Eds.), *Handbook of Evidence-Based Practice in Clinical Psychology: Child and Adolescent Disorders* (Vol. 3, pp. 267-302). Hoboken, NJ: John Wiley & Sons.

PROFESSIONAL PRESENTATIONS

Malmberg, J. (2013, May). *Dissemination of a universal prevention program for disruptive behavior disorders in a primary care setting*. Poster presented at the annual Children's Hospital Colorado Pediatric Research Poster Session. Aurora, CO.

Schellinger, K. & **Malmberg, J.** (2013, March). *Addressing children's physical, emotional, and social development in primary care settings*. Paper presented at the annual Rocky Mountain Early Childhood Conference. Denver, CO.

Malmberg, J., Gadgil, M., & Novins, D. (2012, November). *Disruptive behavior disorders: An update*. Grand Rounds presentation made to Department of Psychiatry and Behavioral Science, Children's Hospital Colorado. Aurora, CO.

Malmberg, J. & Field, C. (2012, November). *Preventative behavioral parent training in a primary care context: Initial evaluation of a universal prevention program for disruptive behavior disorders*. Poster presented at the annual convention of the Association for Behavioral and Cognitive Therapies. National Harbor, MD.

Malmberg, J. & Field, C. (2011, November). *Preventative behavioral parent training: A universal prevention trial in a primary care setting*. Poster presented at the annual convention of the Association for Behavioral and Cognitive Therapies. Toronto, ON.

Malmberg, J., Oldroyd, S., Thurston, B., Toohill, M., Humphries, K., & Carbone, P. (2011, November). *Exploring the perspectives of fathers of children with autism spectrum disorders*. Poster presented at the annual convention of the Association of University Centers on Disabilities. Washington, D.C.

Lopez, S. & **Malmberg, J.** (2011, October). *Examining the unique characteristics of a parent's relationship with a child with a disability*. Paper presented at the annual Southwest Conference on Disability. Albuquerque, NM.

Malmberg, J. (2011, June). *Understanding father's experiences in raising a child with an autism spectrum disorder: A qualitative study*. Paper presented at the annual Effective Practices for Teachers and Human Services Professionals: Interventions Across the Lifespan. Logan, UT.

- Malmberg, J.**, Field, C., & Jenkins, J. (2011, May). *A preliminary investigation of a primary prevention program for children at-risk for developing later conduct problems*. Poster presented at the annual convention of the Association for Behavior Analysis. Denver, CO.
- Malmberg, J.** & Field, C. (2010, November). *Recent modifications to and further analysis of the preventative behavior parent training program*. Paper presented at the annual pre-convention of the Association for Behavioral and Cognitive Therapies. San Francisco, CA.
- Malmberg, J.** & Field, C. (2010, November). *Effects of a primary prevention program on parental tolerance for children's misbehaviors and its relationship to measures of problem behaviors of at-risk children*. Poster presented at the annual convention of the Association for Behavioral and Cognitive Therapies. San Francisco, CA.
- Field, C., Armstrong, A., **Malmberg, J.**, Yardley, J., Prout, K., Greene, R. (2010, June). *ACT-enhanced behavioral parent training*. Three hour training workshop at the Association for Contextual Behavioral Science Annual World Conference. Reno, NV.
- Malmberg, J.** (2010, May). *Preventative behavioral parent training, II: Replication of immediate outcomes and longitudinal effects on socialization processes of at-risk children*. Paper presented at the annual convention of the Association for Behavior Analysis International. San Antonio, TX.
- Malmberg, J.** (2010, March). *Preventative behavioral parent training: Immediate outcomes and longitudinal effects on observed rates and maternal report of problem behaviors of at-risk children*. Paper presented at the annual Intermountain Graduate Research Symposium. Logan, UT.
- Malmberg, J.** & Field, C. (2009, November). *Preventative behavioral parent training: Immediate outcomes and longitudinal effects on observed rates and maternal report of problem behaviors of at-risk children*. Poster presented at the annual convention of the Association for Behavioral and Cognitive Therapies. New York, NY.
- Malmberg, J.**, Armstrong, A., Dahl, A., Duchoslav, R., Alexis Bolton, & Field, C. (2008, November). *Preventive behavioral parent training: Immediate and long term outcomes on observed rates and maternal report of parenting skills*. Poster presented at the annual convention of the Association for Behavioral and Cognitive Therapies. Orlando, FL.

- Malmberg, J.**, Armstrong, A., Field, C., Scharton, R., Duchoslav R., Bolton, A., & Dahl, A. (2008, May). *Preventative behavioral parent training: Immediate and long term outcomes on observed rates and maternal report of parenting skills*. Poster presented at the annual convention of the Association for Behavior Analysis. Chicago, IL.
- Malmberg, J.**, Armstrong, A., Field, C., Scharton, R., Duchoslav, R., Bolton, A. & Dahl, A. (2008, May). *Preventative behavioral parent training: Immediate and long term outcomes on observed rates and maternal report of conduct problems*. Poster presented at the annual convention of the Association for Behavior Analysis. Chicago, IL.
- Field, C. & **Malmberg, J.** (2007, November). *Preventative behavioral parent training: Initial evaluation of a strategy for preventing conduct problems*. Paper presented at the annual pre-convention of the Association for Behavioral and Cognitive Therapies. Philadelphia, PA.
- Armstrong, A., **Malmberg, J.**, Scharton, R., Dahl, A., Duchoslav, R., Bolton, A., & Field, C. (2007, November). *Preliminary evaluation of preventive behavioral parent training: Longitudinal impact on observed rates and maternal perception of problem behavior*. Poster presented at the annual convention of the Association for Behavioral and Cognitive Therapies. Philadelphia, PA.
- Armstrong, A., **Malmberg, J.**, Scheidel, G., Duchoslav, R., Scharton, R., & Field, C. (2007, May). *Preventive behavioral parent training: Immediate impact on reported and observed rates of child problem behavior*. Poster presented at the annual convention of the Association for Behavior Analysis. San Diego, CA.
- Scharton, R., Armstrong, A., **Malmberg, J.** & Field, C. (2007, May). *The impact of parent-child interaction ratios on the misbehavior of typically-developing children*. Poster presented at the annual convention of the Association for Behavior Analysis. San Diego, CA.
- Field, C., Armstrong, A., Knapp, J., **Malmberg, J.**, Vlahos, M., & Scheidel, G. (2006, November). *Preliminary evaluation of preventive behavioral parent training: Immediate impact on observed rates and maternal perception of problem behavior*. Poster presented at the annual convention of the Association for Behavioral and Cognitive Therapies. Chicago, IL.
- Field, C., **Malmberg J.**, Scharton, R., Bolton, A., Foster, N. & Axelrod, M. (2006, May). *Functional assessment interviews: Are parent and adolescent perceptions of behavioral function convergent?* Poster presented at the annual convention of the Association for Behavior Analysis. Atlanta, GA.

Field, C., **Malmberg, J.**, Scharton, R. & Lexi Munk (2005, November). *Pilot evaluation of an exposure-based anger management intervention for typically developing children*. Poster presented at the annual convention of the Association for Behavioral and Cognitive Therapies. Washington, D.C.

GRANT ACTIVITY

2005
(funded) **Research Co-Investigator**
Managing developmentally typical problem behaviors in early childhood: A preliminary investigation of strategies for preventing later conduct problems.
Amount: \$15,000 Funding Source: Utah State University
Principal Investigator: Clint E. E. Field, Ph.D.

TEACHING EXPERIENCE

08/12 – Present **Instructor**
Utah State University (Logan, UT)
Introduction to Interviewing and Counseling

4/13; 6/13 **Guest Lecturer**
Children's Hospital Colorado Child Health Clinic (Aurora, CO)
Management of Disruptive Behavior Disorders in Primary Care Settings

11/12 **Guest Lecturer**
Children's Hospital Colorado Pediatric Psychology Practicum (Aurora, CO)
Psychological Assessment in a Psychiatric Inpatient Setting

Summer 2010;
Summer 2011 **Instructor**
Utah State University (Logan, UT)
Analysis of Behavior: Basic Principles & Lab

6/10 – 8/10 **Graduate Teaching Assistant**
Utah State University (Logan, UT)
Psychological and Educational Consultation

1/09 – 5/09 **Graduate Teaching Assistant**
Utah State University (Logan, UT)
Psychoeducational Assessment

2/09 **Guest Lecturer**
Utah State University (Logan, UT)
Abnormal Psychology

8/06 – 5/07 **Graduate Teaching Assistant**
Utah State University (Logan, UT)
Analysis of Behavior: Basic Principles & Lab

INVITED COMMUNITY PRESENTATIONS

10/12 *Pursuing a Career in the Field of Psychiatry and Psychology*
Jefferson High School (Denver, CO)

8/11 *Behavior Management Strategies for the Classroom*
Centro De La Familia (Providence, UT)

8/11 *Classroom Inclusion and Behavior Management Strategies*
Head Start (Logan, UT)

7/11 *Three Simple Steps to Success in Managing Your Child's Behavior*
Conference for Hispanic Families (Logan, UT)

5/11 *Behavioral Assessment and Intervention*
Up to 3 Early Intervention Program (Logan, UT)

10/10 *Coping with Receiving a Disability Diagnosis for Your Child*
South Main Health Clinic (Salt Lake City, UT)

4/09 *Social and Emotional Development in Young Children*
Migrant Head Start (Honeyville, UT)

2/09 *Managing Children's Misbehaviors*
Early Head Start (Logan, UT)

PROFESSIONAL SERVICE

8/09 – 7/10 **Student Representative**
Utah State University Combined Psychology Doctoral Program
(Logan, UT)

10/08 – Present **Member**
Utah State University Allies on Campus (Logan, UT)

- 11/06 – 11/07 **Student Representative**
Association for Behavioral and Cognitive Therapies, Parent and Families Special Interest Group (National Organization)
- 1/05 – 8/06 **Child Appointed Special Advocate**
State of Utah Guardian Ad Litem's Office (Logan, UT)

PROFESSIONAL AFFILIATIONS

- 2011 – Present American Psychological Association, Division 53 & 54, Student Member
- 2010 – Present Utah Psychological Association, Student Member
- 2008 – Present Association for Contextual Behavioral Science, Student Member
- 2006 – Present Association for Behavior Analysis, Student Member
- 2005 – Present Association for Behavioral and Cognitive Therapies, Student Member