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Preventative Behavioral Parent Training: A Preliminary Investigation of Strategies for Preventing At-Risk Children from Developing Later Conduct Problems

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PREVENTATIVE BEHAVIORAL PARENT TRAINING: A PRELIMINARY

INVESTIGATION OF STRATEGIES FOR PREVENTING AT-RISK CHILDREN

FROM DEVELOPING LATER CONDUCT PROBLEMS

by

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ABSTRACT

Preventative Behavioral Parent Training: A Preliminary Investigation of

Strategies for Preventing At-Risk Children from Developing

Later Conduct Problems

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Children exhibiting conduct problems comprise the largest source of referrals to

children's mental health services in this county. Significant research has been conducted

in an attempt to identify specific risk factors that result in increased vulnerability of a

child developing conduct problems. Knowledge of these factors increases our ability to

identify young children who are at greater risk for developing conduct problems. The

treatment for conduct problems that possesses the greatest amount of empirical support is

behavioral parent training. Yet behavioral parent training fails to address behaviors and

risk factors that are present during a child's early development. Preventative behavioral

parent training is a very brief primary prevention strategy designed to prevent the

development of chronic and age-inappropriate display of conduct problems. This project

was an initial longitudinal assessment examining the merits of preventative behavioral

parent training as a primary prevention strategy for young children at-risk of developing

conduct problems. Results demonstrated that prevention participants were engaging in

normative rates of noncompliance and tantruming at 6-month follow-up, whereas

comparison children showed a general worsening in their disruptive behaviors over time.

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CHAPTER I

INTRODUCTION

Externalizing behavior problems such as noncompliance, acting-out, and aggression constitute the primary major 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 (CPs) have been shown to be the single most important predictor of later development of delinquency, substance abuse, and violence (Hartman, Stage, & Webster-Stratton, 2003). Unfortunately, young children with CPs are a chronically underserved population with approximately 70% not receiving any treatment and even fewer receiving treatments that are empirically validated (Webster-Stratton & Reid, 2003).

Contemporary etiological theories of CPs distinguish between two subgroups of children: early starters and late starters (Moffitt, 1993). The early-starter pathway is characterized by the onset of CPs 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, early childhood characteristics such as impulsivity, irritability, and inattention are believed to interact with family stressors (e.g., poverty) and inept parenting practices to produce children

who have a behavioral tendency to engage in aversive interactions in order to attain

gratification. This behavioral style becomes well-rehearsed over time and places 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 crime and the majority of violent crimes (Conduct Problems Prevention

Research Group, 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. In contrast to early starters, late-starters begin engaging in CP behaviors

during adolescence and have a much higher rate of desistance (Patterson, Reid, &

Dishion, 1992). 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 (Fagot, 1984).

Significant research has been conducted in an attempt to identify specific risk and

protective factors causally associated with the development and course of childhood CPs.

Knowledge of these factors increases our ability to identify young children who are at

greater risk for developing future behavior problems. Unfortunately, the majority of

current intervention treatments are designed to reduce current symptoms of CPs rather

than enhance protective factors and minimize risk factors associated with the onset of

disruptive behavior. One risk factor that has been consistently implicated in the

development of CPs is child noncompliance (Campbell, 1995; Webster-Stratton, 1998).

In fact, noncompliance is considered to be a "keystone behavior" in the development of

CPs (McMahon & Forehand, 2003). Excessive noncompliance appears to play an integral role in the development of the coercive cycle in the "early starter" pathway of CPs (Patterson et al., 1992).

Historically, a variety of interventions have been employed in an attempt to treat childhood CPs. Of these, behavioral parent training (BPT) has consistently emerged as the most successful intervention to date (Eyberg, Nelson, & Boggs, 2008). The underlying assumption of this model is that a parenting skills deficit has been at least partially responsible for the development of the child's CPs. Beginning in the 1960s, a shift was made from having a therapist work directly with the child to employing a therapist to work directly with the parent to alleviate the child's CP behaviors (O'Dell, 1974). The BPT model is heavily rooted in behavioral theory, especially reinforcement and punishment procedures based on operant conditioning. Parents are trained to alter their child's behavior by implementing behavioral modification strategies they are taught in session (McMahon & Forehand, 2003). By teaching parents how to engage in positive interactions with their children, as well as provide them with effective strategies for disciplining their children, children's CPs will decrease.

Although parent training has a longstanding history of demonstrating improvements in children's disruptive behaviors, inherent weaknesses remain that must be addressed. For example, BPT is not effective with all families. Patterson (1974) reported that 22% of treated families in his sample did not show improvement with BPT, while Webster-Stratton, Hollinsworth, and Kolpacoff (1989) reported that approximately one third of children continued to exhibit clinical problems at 1-year posttreatment. In

addition, a review of 22 BPT studies indicated that the overall dropout rate was 28% (McMahon & Forehand, 2003). Thus, BPT has been demonstrated to only help approximately one third of children who present for treatment.

While a number of child and family characteristics may limit the effectiveness of BPT, the severity of the child's CPs has been most consistently associated with parent training outcome (McMahon & Forehand, 2003). In addition, the age of the child has been shown to influence treatment outcome. Treatment outcome studies with preschool and elementary school-aged children with CPs indicate that when parents are taught to replace maladaptive parenting practices with effective parenting strategies, their children display less noncompliance and aggression (Webster-Stratton, Kolpacoff, & Hollinsworth, 1988). In contrast, interventions targeting adolescents have demonstrated far less productive outcomes (Kazdin, 1987). This is not altogether surprising considering that 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 importance of (a) child age for successful intervention and (b) addressing noncompliance early in development, there has been a recent shift towards the development of early intervention and prevention models for treating children at-risk for developing CPs, as the majority of widely disseminated treatments appear to be implemented too late in the child's trajectory of dysfunction. Although BPT has been deemed an appropriate intervention for children between the ages of 3 and 10, it has been predominantly utilized with school-age children (McMahon & Wells, 1998). Thus, its full utility as a preventative strategy with very young children remains unknown. While a

number of prevention models have been shown to be efficacious in the treatment of childhood CPs (Conduct Problems Prevention Research Group, 1999; Sanders, 1999; Webster-Stratton, 1998), they continue to be classified as attempts at secondary 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 considerable time and effort, making parents less likely to remain in treatment until completion.

BPT has been established as an empirically supported intervention for treating children with CPs. However, a comprehensive downward extension of this intervention has not been developed and tested with very young children. A simplified version of BPT could be developed as a preventative program for use with very young children who are identified as at-risk for developing severe CPs. The purpose of this study was to determine the utility of a modified approach to BPT that can be utilized to train parents to effectively manage their young child's typical misbehavior, thereby preventing the development of clinical levels of disruptive behaviors. Demonstrating the efficacy of this preventative model, as well as establishing its stability over time, will provide a basis for additional model development and evaluation.

The current project was designed to answer the following research questions:

1.   To what extent will preventative behavioral parent training (PBPT) produce immediate decreases in noncompliance among 1½- to 3-year-old children at-risk of developing CPs?

2.   To what extent will PBPT produce immediate decreases in tantrums among 1½- to 3-year-old children at-risk of developing CPs?

3.   To what extent will PBPT effects be maintained across a 6-month period among 1½- to 3-year-old children at-risk of developing CPs in regards to noncompliance?

4.   To what extent will PBPT effects be maintained across a 6-month period among 1½- to 3-year-old children at-risk of developing CPs in regards to tantrums?

5.   To what extent do children exposed to PBPT differ regarding their disruptive behaviors developmental trajectory relative to comparison children?

CHAPTER II

LITERATURE REVIEW:

INTRODUCTION TO CHILDHOOD CONDUCT PROBLEMS

Childhood disruptive behavior problems 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. The number of children residing in out-of-home or residential care treatment settings as a result of a severe emotional disturbance or display of unmanageable and delinquent behavior continues to rise. By adolescence, these children account for almost half of all adolescent crime and the majority of violent crimes (Conduct Problems Prevention Research Group, 2000). Research has indicated that children with early-onset CPs 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 (Kazdin, 1995). Unfortunately, few interventions target children prior to being diagnosed with an externalizing disorder, which often does not occur until the child has reached school-age. By this time, their disruptive behaviors have been extensively rehearsed since early childhood. The data has clearly indicated that such late

interventions have been overwhelmingly ineffective (Stormont, 2002; Wakschlag & Keenan, 2001). In order to minimize the likelihood of at-risk children developing more severe behavior problems, these children must be identified early and engaged in preventative programs.

Definitions

CPs 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). Display of mild forms of oppositional behaviors, particularly tantrums and noncompliance, is 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). For the purpose of this study, noncompliance will be 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, Kosorok, & Davidson, 2003). For the purpose of this study, tantrums will be 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.

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 CPS 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 reflecting 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, CPs 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 CPs is noteworthy.

Prevalence

Given that CPs are a frequently occurring problem even among nonclinical samples of children, it is not altogether surprising that children exhibiting CPs 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 (Sholevar & Sholevar, 1995). Research has consistently documented that CPs are prevalent during childhood, with an estimated 10% to 15% of preschool-aged children displaying behavioral problems (Campbell, 1995; Thomas & Guskin, 2001; Wakschlag & Keenan, 2001). CP behaviors

occur more frequently than any other type of problem among both clinical and nonclinical samples of children (Quay, 1986). While many of these behaviors are considered developmentally characteristic of preschool-aged children, when they 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 CPs 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).

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 CPs 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 4-7, reported noncompliance as a problem in their home. In contrast, approximately 85% of parents of clinic-referred children, ages 4-7, indicated that noncompliance was a concern. Finally, in a review of normative studies conducted by Forehand (1977) it was found that 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 et al., 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 has been consistent in indicating relatively high rates of tantrums in the normal population of preschool children. In a study conducted by Jenkins, Owen, Bax, and Hart (1984) all preschool-aged children took part in a longitudinal study ranging from birth to age 5 wherein rates of common behavior problems were examined. 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. Although tantrums are considered normative for preschool-aged children, the rate and severity of their tantrums can be cause for concern. An additional cause for concern is when tantrum rates remain high well beyond the preschool years (Achenbach & Edelbrock, 1981).

The ability to ascertain accurate estimates of the prevalence of child 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 CPs and are four times more

likely than girls to receive a formal disruptive behavior disorder diagnoses, although

these differences dramatically decrease during adolescence (Anderson, Williams, McGee,

& Silva, 1987; Hinshaw & Anderson, 1996).

Developmental Course

With respect to developmental considerations, it is clear that there is a high degree

of continuity in CP behaviors from infancy through early childhood. Campbell (1995)

studied hard-to-manage preschoolers who were recruited at ages 3 and 4. At recruitment,

target children were displaying elevated rates of noncompliance. At age 6, 50% of the

problem group was perceived by parents as having significant problems as rated on the

Child Behavior Checklist (CBCL). At age 9, 48% of the original problem group met

DSM-III criteria for an externalizing disorder, as compared to only 16% of the control

group. Finally, at age 13, children who had demonstrated persistent problems during

previous follow-ups continued to exhibit higher rates of problem behavior, relative to

those who had exhibited transient problems and in comparison to controls. In order to

gain a better understanding of how CPs are developed and maintained, further

examination of the roles various developmental, contextual, and transactional influences play in the developmental course of CPs is warranted.

Noncompliance is considered highly common among young children, with virtually every parent being occasionally challenged by their defiant child. In fact, noncompliance is consistently rated as a primary reason for referral by parents who bring their children to mental health clinics for assistance (Achenbach & Edelbrock, 1981). Due to the fact that noncompliance is relatively common among young children, it is important to differentiate between noncompliance that reflects normative behavior and that which is considered problematic and indicative of later, more severe, CPs. Some degree of noncompliance is developmentally appropriate for all young children, although compliance probabilities should increase during normal socialization (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). At the age of 2 or 3, children begin to 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). Parents are given the responsibility of setting appropriate limits for the child, based upon their developmental level. As the child continues to progress through developmental stages, they gradually become more cooperative, in large part due to their increasing skill in using negotiation strategies (Kuczynski & Kochanska, 1990).

Crockenberg and Litman (1990) have conducted developmental research in an attempt to decipher what is considered normative regarding noncompliance in young

children. They concluded that there must be a distinction between noncompliance that reflects important developmental advances toward independence (e.g., self-assertion, self-awareness, and self-regulation) and noncompliance that reflects anger or defiance. Similarly, typical developing children will occasionally demonstrate difficulty engaging in prosocial behavior with other peers or siblings, while those who exhibit hostile aggression towards others may signify potentially symptomatic behaviors (Campbell, 1990). Thus, although young children may exhibit a number of negative behaviors that parents find difficult to manage, they oftentimes do not indicate that the child will develop a disruptive behavior disorder. Rather, they present to parents the challenge of recognizing these behaviors as developmentally typical and responding in a manner that decreases the likelihood that they will continue to be displayed in later childhood.

Although some noncompliance is expected in young children, when these behaviors continue to be exhibited in older children or continue to increase in frequency and rate, they may become developmental precursors to more serious antisocial behaviors later in life. In fact, the argument has been made that "noncompliance appears to be a keystone behavior in the development of conduct problems" (McMahon & Forehand, 2003). Campbell (1990) suggested that in order for a young child to be considered behaviorally atypical, a number of components must be present including: (a) the presence of a constellation of symptoms, (b) the symptoms must demonstrate short-term stability that goes beyond a transient adjustment to change, (c) the behaviors must be evident in several settings and with people other than the parent(s), (d) the behaviors must be relatively severe, and (e) the behaviors must be impairing the child's functioning.

Campbell (1995) asserted that whether or not a child's behavior is considered typical depends on the degree to which the behaviors are severe and pervasive enough to interfere with normative developmental tasks. Research conducted by Wakschlag and Keenan (2001) provided further evidence of the importance of evaluating the severity and pervasiveness of a child's behavior when assessing whether a child is at-risk for developing future CPs. They determined that tantrums in response to parental limit setting were typical of preschoolers but that multiple tantrums elicited by normally occurring interactions throughout the day were atypical. Additionally, they differentiated between normative behaviors involving being noncompliant when it reflected self-assertion from atypical behaviors involving openly and pervasively defying adult requests, having a "reflexive no," and provocatively refusing to follow the rules. Unfortunately, research regarding the specific point at which behaviors are considered to move beyond the normative stages of development and on to behavioral manifestations that warrant clinical concern remain unclear (Campbell, 1995).

Children who continue to display high rates of CPs may be assigned a disruptive behavior disorder diagnosis. Although research has indicated that CPs develop very early in a child's life (Webster-Stratton, 1998), they are unlikely to be diagnosed with ODD or CD until they reach school-age. The particular challenge of applying a DSM diagnosis to a young child is largely a result of the limited diagnostic criteria for ODD and CD as they might be applied to children younger than 7. As was discussed above, the challenge of teasing apart what is typical versus atypical regarding normative displays of CPs in preschool-aged children makes it particularly challenging to apply a diagnostic

framework to young children. Unfortunately, this also decreases the likelihood that a young child will receive early intervention services.

A number of models have been proposed in an attempt to explain how normative CPs can develop into a clinical, potentially diagnosable concern. Emerging from the literature are various theories positing that biological predispositions via genetic influence play a primary role in the development and maintenance of CPs. Until recently, efforts to understand how biology contributes to childhood CPs has been limited by the invasiveness of the procedures necessary to research it, as well as by a fear of how the results would foster a deterministic conception of antisocial behaviors (Campbell, Shaw, & Gilliom, 2000). 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 CPs (Eley, Lichenstein, & Stevenson, 1999). Research examining neurological abnormalities has provided further evidence of the role biology may play in the development of CPs (Campbell et al., 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 CPs in childhood (Pennington & Bennetto, 1993). Similarly, temperamental theory has been involved in attempts to explain how CPs develop and are maintained. Numerous research studies have demonstrated significant correlations between certain temperament styles and CPs (Frick, Cornell, Barry, Bodin,

& Dane, 2003; Stormont, 2002). Researchers have been particularly interested in the temperamentally difficult child (e.g., intense, irregular, nonadaptable), who is thought to be at risk of developing subsequent CPs due to the increased likelihood of engaging in maladaptive interactions with family members (Frick & Morris, 2004).

In contrast to biological theories accounting for CPs, Patterson and his colleagues have conducted rigorous research over the past three decades in order to discern the impact a child's social system has on the development and maintenance of CPs. Emerging from his research is a theory based upon parent-child interactions called the coercion model (Patterson, 1982, 2002). The coercion model describes how display of typical CPs 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 CPs. The development of a coercive cycle between the child and the parent is considered the key element responsible for the early establishment of CPs. Central to this coercive cycle is an interactive process wherein the child learns to escape or avoid an aversive stimulus (i.e., commands, instructions, scolding) by engaging in negative behaviors such as excessive crying, arguing, tantruming, and noncompliance. Negative reinforcement plays a substantial role in the escalation and maintenance of the coercive cycle. If the child's reaction results in a termination of the aversive stimulus, the child is more likely to engage in the behavior again. In addition, the parent is reinforced for withdrawing their demand because it resulted in a termination of the negative behaviors being displaying by their child. However, when a parent responds aversively to their child's negative behavior (counterattacks), the coercion mechanism comes into play.

The parent will begin to escalate the severity of their aversive control tactics and will be reinforced by the child's eventual compliance. Said differently, the parent learns that the child will become compliant if they become louder and more negative. Thus, the child is reinforced for engaging in increasingly negative behaviors, while the parent is reinforced for escalating their control tactics. Data collected by Patterson (1982) indicated that among normal families, approximately 14% of their child's coercive behaviors initiated the coercive cycle, compared with 22% for boys in clinical samples. These exchanges increase in duration as parent and child amplify the intensity of their negative behavior. In sum, the coercive model largely accounts for the maintenance of CPs and display of increasingly coercive behaviors via processes of reinforcement and social modeling.

The coercion model provides the theoretical framework for the most thoroughly delineated pathway that leads to the display of persistent CPs. The "early starter" developmental pathway is characterized by the onset of CPs in the preschool years and by a high degree of continuity throughout the lifespan (Patterson, 1982). This pathway has also been referred to as the "childhood-onset" (APA, 2000) or "life-course-persistent" pathway (Moffitt, 1993). Throughout this review, the term "early starter" will be used to describe this developmental pathway. Consistent with the coercion model, these children initially demonstrate mild CPs (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 interaction with teachers and peers. As a result, the child is more likely to experience frequent disciplinary actions, rejection by his

peers, and academic problems (Patterson et al., 1992). Data collected during the Oregon Youth Study (Patterson, DeBaryshe, & Ramsey, 1989) provides further evidence of a child's CPs continuing upon school entry, with results strongly supporting the notion that child's CPs 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 there is a high degree of continuity in CP behaviors throughout the lifespan (Conduct Problems Prevention Research Group, 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).

Patterson (1982) also described a second developmental pathway termed the "late starter" pathway. These children are markedly different from early starters in that they do not begin engaging in CPs until adolescence. Rather than being a by-product of the coercive cycle described above, these individuals' CPs are considered to be highly transient and are considered to be most heavily influenced by a deviant peer group. They are more likely to engage in less serious forms of CPs, such as vandalism and truancy. The prevalence rates for this pathway have been shown to be much higher than those on the early starter pathway and the ratio of males to females is much lower (Kazdin, 1995). As a result of their delayed engagement in CPs, these youth are more socially skilled and academically inclined. These protective factors make them less likely to persist in their

CPs in adulthood, which is consistent with the diagnostic outcome of adolescent-onset

CD (APA, 2000). In comparison to those on the early starter pathway, these individuals

are less likely to be aggressive and less likely to have persistent manifestations of CD

later in life (Patterson et al., 1992).

Although these single component theories have provided substantial insight into

factors associated with the development and maintenance of CPs, it remains clear that

biological predisposition interacts with environmental factors in developing CPs in

children (Campbell et al., 2000). While Patterson's (1992) research focused on the

specific influence parent-child interactions had on the development of childhood CPs, he

also recognized the mutual interplay of characteristics of the child and their surrounding

social systems in the development of CPs. In fact, Patterson et al. (1992) stated that the

coercion model is based upon the social interactional perspective, which recognizes the

complex interplay between attachment, family-peer interaction, and context.

To this end, Dodge and Pettit (2003) have proposed a biopsychosocial model in

which they contend that a child's biological dispositions (e.g., temperament,

hyperactivity) interact with the broader sociocultural context (e.g., poverty, neighborhood

factors) to place them at risk in early life. This risk is then mediated by life experiences

with parents, peers, and social institutions. This theory has been lent empirical support

from the Child Development Project (CPD), a longitudinal study of 585 boys and girls

who were followed from the preschool years through early adulthood. Data from this

project demonstrated that temperament and early problem behaviors significantly

predicted whether these children would experience punitive discipline practices and

social rejection by peers. Furthermore, sociocultural factors such as stress, poverty, and lack of access to resources were strongly associated with inept parenting practices and harsh discipline. Conversely, positive parenting practices significantly reduced the direct effect of negative sociocultural factors on children's CPs (Dodge, Pettit, & Bates, 1994). Similar empirical findings and conceptualizations were offered in a longitudinal study conducted by Conger et al. (1992). In their study, both child dispositions and sociocultural context were shown to influence parent-child interactions, with parenting practices being shown to have the most direct effect on child's developmental outcome.

Risk Factors

Given the complex interactions between various predictor variables, significant research has been conducted in order to identify risk factors that would contribute to our ability to identify young children who are at greater risk for developing future behavior problems. The literature consistently indicates there are multiple developmental pathways that may yield CPs, while recognizing the complex interchange between the individual, their family, and broader contextual factors (Dodge & Pettit, 2003; Patterson et al., 1992; Stormont, 2002). Unfortunately, studies have yielded mixed results and have created a lack of consensus in the field regarding which risk factors should be given primary focus. A closer examination of the research available on the various risk factors involved in the development of CPs is needed. Although many risk factors have been identified, they can be placed into three general categories: individual, familial, and the environment.

Individual

Research has indicated that a child may have a biological predisposition for developing CPs (Dodge & Pettit, 2003). The within-child risk factor that has received the most attention is a child's temperament, more specifically the "temperamentally difficult" child. Children considered to be temperamentally difficult will display characteristics such as hyperactivity, impulsivity, and irritability (Frick & Morris, 2004). Research has found that up to 67% of children who display both hyperactivity and aggression during preschool will continue to exhibit severe behavior problems at the age of 9 (Stormont, 2002). A study conducted by Bates, Maslin, and Frankel (1985) identified a behavioral pattern of fussiness, being overly resistant to control, and having a difficult temperament in 6-month-old children to be predictive of mothers' ratings of CPs at the age of 3 years. Others demonstrated that in comparison to environmental factors such maternal depression, marital discord, and a number of stressful life events, temperament measured at age 2 was the most powerful predictor of temperamental problems at age 3 (Earls & Jung, 1987).

In contrast, Kingston and Prior (1995) obtained mixed results in their examination of the relationship between temperament and CPs. For example, they found that a difficult temperament was associated with reactive aggression and significant CPs that began early in childhood but not with transient or less severe CPs. Additionally, emotional regulation has been implicated as a temperamental difficulty associated with CPs. However, only certain types of negative emotions (e.g., anger and frustration) have been found to have a relationship with CPs, whereas other types of negative emotions

(e.g., fear, anxiety, and sadness) have not demonstrated any relationship. Finally, research has demonstrated that early problematic temperaments do not have a direct effect on the development of CPs, rather their effect is mediated by the types of parenting practices to which they are exposed (Dodge & Pettit, 2003). A large scale study of temperament and behavior problems reported a weak association between maternal ratings of temperamental difficulties and ratings of behavior problems. However, perceptions of temperament were more likely to predict other risk factors associated with CPs (Sanson, Oberklaid, Pedlow, & Prior, 1991). For example, a child's temperament is likely not a causal factor in whether a child develops CPs; rather, children who display an intensive, negative temperament are more likely to engage parents in negative interactions, which in turn will lead to the development of CPs. In fact, research has demonstrated that, at best, temperament is only moderately related to the development of later CPs (Stormont, 2002).

Other researchers have focused their attention on risk factors involving a child's affective and interpersonal style. One particular study demonstrated that individuals who display callous-unemotional (CU) traits (e.g., lack of empathy or guilt, callous use of others) early in life were at a greater risk of developing CPs (Frick et al., 2003). More specifically, these children were found to engage in more diverse and serious CPs, more likely to have persistent CPs, engage in patterns of violence that were severe, premeditated, and instrumental, and have an increased likelihood of developing parental antisocial personality disorder (McMahon et al., 2006). Children with CU traits have a tendency to engage in thrill-seeking behaviors, are less sensitive to the cues of

punishment, and are less responsive to threat or emotional distress in comparison to other children diagnosed with CPs. Additionally, there is evidence that this subgroup of children with CU traits have unique temperamental attributes such as high levels of behavioral dysregulation and low levels of behavioral inhibition (Frick et al., 2003). These children have also been shown to experience dysfunctional parenting practices (Oxford, Cavell, & Hughes, 2003), placing them at an even more elevated risk for developing severe, long-lasting CPs.

Research focusing on biological processes has also contributed to our understanding of individual child risk factors. Studies investigating the role of the heritability of aggression, delinquency, and antisocial behavior have provided evidence for the role genes may play in the development of CPs. Additionally, there continues to be a growing body of research that contends individual characteristics such as impulsivity, attention deficits, and temperament are also hereditary. When the variance accounted for by including in utero experiences is added, additional insight is provided. Together, genes and the prenatal environment cause some children to be born with a hyperpersistent behavioral facilitation system, an underactive behavioral inhibition system, or autonomic nervous system hyperactivity, all of which have been shown to place a child at-risk for developing CPs later in life (Dodge & Pettit, 2003). For example, resting heart rate, a general indicator of autonomic arousal, has been associated with CPs (e.g., lack of empathy and fearlessness) in child samples (Campbell et al., 2000). Raine, Venables, and Mednick (1997) found that a low resting heart rate at age 3 was significantly correlated with aggression at age 11. Additionally, neurological

abnormalities in the temporal and frontal lobes of adults diagnosed with antisocial personality disorder suggest that deficits in inhibitory control may confer risk for the development of CPs in childhood (Moffitt, 1993). Finally, genetic research conducted by Capsi, McClay, Moffitt, and Mill (2002) implicated a specific gene encoding the neurotransmitter-metabolizing enzyme monoamine oxidase A as having a role in the development of CPs by moderating the effects of harsh parental treatment.

Children at-risk for developing CPs have also been shown to have deficits in their social-cognitive skills when compared to a nonclinical sample. Specifically, they have been shown to make more hostile attributional biases and errors when interpreting social cues, lack the ability to generate solutions to social situations, have deficits in encoding, evaluate aggressive solutions more positively, and are more likely to choose to engage in aggressive behaviors (Crick & Dodge, 1994). In fact, one study conducted by Weiss, Dodge, Bates, and Pettit (1992) demonstrated that these social-cognitive deficits were predictive of the development of CPs in kindergarten-aged children. Unfortunately, these children were placed at an even more elevated risk for developing CPs when you examine the effect their social-cognitive deficits have on parenting practices. Namely, parents were more likely to report that they engaged in earlier and more severe disciplinary practices with these children.

Familial

Another significant factor contributing to the emergence and maintenance of CPs in childhood is familial influence. Of the various risk factors present within the family context, parenting has been given the most widespread attention. In general, researchers

have consistently agreed that parenting behavior plays a major role in both the onset and persistence of externalizing problems in young children (Campbell, 1995). Seminal work conducted by Baumrind (1967) demonstrated that parenting practices can heavily influence behavioral outcomes of children. She found that parents who were less nurturant, less involved, and more controlling had preschoolers who were more withdrawn and less trusting, whereas parents who were disorganized, nondemanding, and insecure about their parenting abilities had children with little self-control. Other types of parenting practices that are considered to place a child at an elevated risk of developing CPs is inconsistent discipline, low supervision and involvement, irritable/explosive discipline, and inflexible/rigid discipline (Chamberlain, Reid, Ray, Capaldi, & Fisher, 1997). Research has found that negative and controlling types of parenting place children at risk for developing CPs. A study conducted by Campbell and Ewing (1990) concluded that observed rates of maternal negative control when their children were 3 years old was predictive of significant CPs when their children were 9 years old. In general, there is overwhelming support in the literature substantiating the claim that inept parenting skills will greatly contribute to the development of CPs (Kendziora & O'Leary, 1993; Patterson, 2002; Stormont, 2002; Webster-Stratton, 1998). As the coercion model described above explained, dysfunctional parents are more likely to get caught in a negatively reinforcing, coercive cycle with their children, which consequently will increase the likelihood that their children will develop CPs. A series of studies conducted by Campbell and her colleagues (2000) have demonstrated findings consistent with the coercion model. They have found that high levels of negative maternal control in parent-

child interactions, familial/maternal distress, and high rates of CPs were predictive of externalizing problems later in life. Finally, research conducted by Olson, Ceballo, and Park (2002) demonstrated that mothers who received low scores on a measure of coping efficacy (i.e., feeling "out of control" in relation to managing daily child care issues) also reported high rates of child CPs. Consequently, women who reported low self-evaluations of coping were also more likely to demonstrate high rates of negative maternal control, including more frequent use of physical punishment.

Additional research has focused on the relationship between the warmth of the parent and the psychological adjustment of the child. McFayden-Ketchum, Bates, Dodge, and Pettit (1996) conducted direct home observations of preschoolers and their families and concluded that the lack of warmth between parents and their children was contributing to the likelihood that a child would develop CPs. Attachment theory has also discussed the importance of the parent-child relationship. Studies have demonstrated that toddlers who have a secure relationship with their caregivers are more compliant and cooperative (Campbell, 1995). However, the data has been subject to multiple interpretations, and thus, must be evaluated with caution. One transactional perspective that could explain this equivocal data is that an insecure attachment is only a risk factor for later CPs if the child is also subjected to ongoing family stress. This explanation has been supported by studies that have found the combination of maternal psychosocial problems and insecure attachment predicted CPs in preschool-aged children (Lyons-Ruth, Alpern, & Repacholi, 1993).

Parent's maladaptive social cognitions have also been shown to be a risk factor in whether or not a child develops CPs. Parents of children with CPs have been shown to be more likely to misperceive their children's behaviors, to have more negative family-referent cognitions, and to perceive CP behaviors as intentional and attribute them to global and stable causes (McMahon & Frick, 2005). These negative attributions regarding their children's misbehavior are then associated with an increased likelihood that the mother will be overreactive in their discipline and express higher levels of anger (Slep & O'Leary, 1998). In addition, these negative cognitions are thought to negatively impact parenting efficacy, with parenting efficacy having been shown to negatively relate to CPs in both clinical and nonclinical samples (McMahon & Frick, 2005).

Another risk factor that has been shown to be present in the display of many childhood disorders, including CPs, is parental psychopathology. A solid body of evidence has been collected that supports the contention that maternal depression is associated with children with CPs (Kendziora & O'Leary, 1993). Parents with depression are at increased risk for displaying dysfunctional parenting practices, such as inept discipline, low responsiveness to their children, and avoidance of conflict. In addition, many of the negative cognitions discussed above are more likely to be engaged in by mothers with depression, including negative perceptions of the child and unrealistic expectations of the child's behavior (McMahon & Forehand, 2003). There also appears to be a relationship between maternal depression and the likelihood of referral of the child for CPs, although these children will not always exhibit higher rates of CPs relative to nonclinical children (Rickard, Forehand, Wells, Griest, & McMahon, 1981).

Parental antisocial behavior has also been implicated as a risk factor for a child developing and maintaining CPs. In a study examining boys at high risk for CPs, it was found that parental antisocial behavior was negatively correlated with parenting practices (Patterson et al., 1992). Thus, parental antisocial behavior was demonstrated to have an indirect influence, through the negative effect it had on parenting practices, on the development of CPs in their children. Parental alcohol and drug abuse has also been implicated as a risk factor associated with child CPs (Forehand & McMahon, 2003). Similar to the effect depression has on parental cognitions, substance abuse also negatively influences parental perceptions of children's behavior, as well as negatively impacts parenting behaviors (e.g., inconsistent and harsh discipline, inadequate monitoring, and less problem solving; McMahon et al., 2006). Research conducted by Pelham and Lang (1993) suggests that these mediating factors are what accounts for the association between parental alcohol use and a child's CPs. In addition, they contend that a child's CPs can also have a deleterious effect on parental alcohol consumption, which only serves to perpetuate the cycle.

Research has identified various other familial risk factors that may contribute to the development and maintenance of child CPs. In general, research has shown that children with more familial stressors are likely to exhibit more severe CPs (Stormont, 2002). These families have been shown to experience a higher frequency of both minor daily hassles, as well as more significant stressors such as unemployment and residential mobility (Buchanan & Flouri, 2001). Parents of children with CPs are more likely to report marital discord, as well as be more likely to engage in physical aggression towards

each other (Kendziora & O'Leary, 1993). In fact, conflict between parents has been

rigorously researched and it has been demonstrated that parental conflict is more strongly

associated with CPs in samples of clinic-referred children than in samples of nonreferred

children (O'Leary & Emery, 1984). However, it is important to note that again, these

familial stressors seem to have an indirect effect on child misbehavior by disrupting

functional parenting practices (Campbell, 1995). In addition, marital conflict may provide

a direct model of aggression and coercive behavior for a child, contribute to maternal

depression, and disrupt a parent's ability to engage in appropriate parental cognitions

(McMahon et al., 2006).

Environmental

Childhood CPs have also been associated with a number of contextual factors.

Research has identified low socioeconomic status as one primary contributing factor to

the onset and maintenance of child CPs. A study conducted by Bradley and Corwyn

(2002) found that socioeconomic status (i.e., income, occupation, and education of

parents) at birth was one of the strongest and most consistent of all risk factors for later

CPs. Other factors influenced by low socioeconomic status may also create an

environment conducive to the development of CPs. These factors include poor child

supervision due to limited financial resources and increased parental stress as a result of

the pressures faced in providing for the family (Kazdin, 1995). However, research has

also demonstrated that the association between low socioeconomic status and the

development of CPs is not direct. Analyses performed by Capaldi and Patterson (1994)

indicate that the relationship between socioeconomic status and CPs appears to be largely

mediated by parenting practices. This is consistent with findings reported by Webster-Stratton and Hammond (1990) who found that single mothers with low socioeconomic status were more likely to be critical and be physically punishing towards their children.

Insularity has also been shown to be a risk factor associated with the development and maintenance of CPs. Insularity is defined as a pattern of social interactions that is characterized by a high level of negative coercive interchanges and by a low level of positively perceived supportive interchanges with helping agency representatives, relatives, and friends (Wahler & Dumas, 1984). A study conducted by Wahler (1980) demonstrated that the more insular a mother was, the more aversive she was towards her child and the more oppositional her child was towards her. These findings suggest that the less positive interactions the mother has with individuals outside the home, the more likely she is to engage in negative interactions with her children at home.

Another risk factor that has been suggested as having a role in the development and maintenance of CPs is neighborhood factors. In a seminal study conducted by Shaw and McKay (1942) it was argued that there was a relationship between individual violent behavior and the community in which they lived, noting that some communities were characterized by consistently high crime rates. Specific community risk factors identified in their study included poverty, ethnic heterogeneity, and high residential mobility. In the CDP, census tract data provided further support by indicating that neighborhoods characterized by poverty, single-parent households, high residential mobility, and unemployment represented significant risk factors for individual CPs (Beyers, Bates, Pettit, & Dodge, 2003). At a direct level, young children who live in these at-risk

neighborhoods may be developing CPs as a result of having greater exposure to antisocial attitudes and behaviors that socializes them to develop CPs (Wilson, 1996). Similarly, parents often report more worries regarding raising their children in such neighborhoods, which may cause them to be overly restrictive and harsh in their parenting style (Patterson et al., 1992).

Protective Factors

While significant focus has been given to the various risk factors involved in the development and maintenance of CPs, less attention has been given to potential protective factors. Given that this area of research is still relatively new, further investigation into protective factors is necessary. In order to lessen the impact of the risk factors mentioned above, it becomes essential that protective factors be built up in a child's life (Conduct Problems Prevention Research Group, 2000). While not all risk factors can be reversed and turned into protective factors, it has been demonstrated that risk factors such as lack of parenting skills, lack of support networks, and lack of school involvement are amenable to intervention (Webster-Stratton, 1998). Advances in this area could lead to interventions that include ways to develop these protective factors in the child's life in order to reduce the likelihood that they will develop significant CPs. Greenberg, Domitrovich, and Bumbarger (1999) have outlined three broad categories of protective factors including: personal attributes of the individual, the individual's interactions within their immediate environment (i.e., family and neighborhood), and the interacting systems in the individual's world (i.e., educational system and environmental factors).

Individual

      Exploring the protective factors within the individual, Kuczynski and Kochanska (1990) hypothesized that the type of strategies children develop in the context of early interactions involving parental control would be related to whether or not the child developed CPs later in life. Results demonstrated that when children began engaging in more autonomous functioning, those who demonstrated interpersonal competence would be less likely to develop CPs. More specifically, children who engaged in skillful negotiations with parental requests are less likely to develop CPs. These findings lend further support to Patterson's coercive model (1982), in that children who are able to skillfully negotiate with their parents during conflict are also less likely to initiate behaviors which would place the parent-child dyad in a coercive cycle. Owens and Shaw (2003) demonstrated that when children were at risk of developing CPs due to maternal depressive symptoms, low infant negative emotionality was associated with greater improvement in CPs over time. Attachment theorists have found that infants who demonstrate a secure attachment to their mother also demonstrate less noncompliance at age 2 with their mothers and, at age 4½, demonstrated better social skills and less CPs, as reported by their preschool teachers (Erickson, Sroufe, & Egeland, 1985). This is consistent with research done by Conduct Problems Prevention Research Group (2000), who indicated that strong bonds of attachment to family served a protective function in youth otherwise at risk for develop CPs. Additional protective factors were found in a study conducted by Loesel and Bliesener (1994). Their study included a group of adolescents who had grown up exposed to a high number of risk factors that have been

shown to promote the development of CPs. Those who had shown resiliency to these risk

factors tended to be more intelligent and had flexible and approach-oriented

temperaments. Another study focusing on individual protective factors found that at-risk

individuals with good coping skills and high school achievement were less likely to

develop CPs (Rutter, 1995). A more recent study conducted by Webster-Stratton, Reid,

and Stoolmiller (2008) provided further insight into individual protective factors. Within

their study, they targeted children believed to be at risk of developing CPs (i.e., high rates

of disruptive behaviors, low academic achievement, poverty) and placed them in an

intervention targeting social competence and emotional self-regulation. Results indicated

that children who were able to demonstrate more appropriate social skills and engage in

emotional self-regulation were also less likely to exhibit CPs.

Familial

While social learning theorists have focused more on how the coercive process

has been implicated as a primary determinant in child CPs, others have researched the

complementary contribution of parental responsivity as a protective factor against the

development of CPs (Patterson, 1982; Stormont, 2002; Webster-Stratton, 1998). A study

conducted by Owens and Shaw (2003) evaluated the relationship between parental

acceptance (e.g., warmth, responsiveness, supportiveness, reciprocity) and early CPs.

Results demonstrated that high levels of maternal acceptance are clearly predictive of low

levels of CPs in young children. The authors postulate that acceptance may increase the

effectiveness of socialization attempts by enhancing the parent-child relationship, which

in turn may influence child self-esteem, both of which may decrease the likelihood of

future CPs. Erickson et al. (1985) researched at-risk mother-child dyads and found that when mothers displayed positive emotional support and consistent responsiveness and sensitivity towards their child, they were less likely to report elevated rates of CPs. This evidence is consistent with the "nurturance hypothesis" that has emerged from the research that states that parents' positive attention and emotional investment contributes to the developmental trajectory their child will take (Dishion & Bullock, 2002). Others have evaluated the relationship between maternal monitoring and the development of CPs. Supplee, Unikel, and Shaw (2007) focused specifically on whether maternal monitoring acted as a buffer against risk factors in both the home and neighborhood environment. Results indicated that maternal monitoring was not found to act as a buffer against factors in the home, but was found to serve as a protective factor in relation to neighborhood risk. They contend that maternal monitoring protects the child from developing CPs indirectly by preventing the likelihood that the child will begin associating with deviant peers.

Environmental

Fewer studies have been conducted evaluating the role of broader contextual protective factors that may buffer the effects of risk factors implicated in the development and maintenance of CPs. One such study examined the relationship between families who demonstrate high levels of stressful life events and the quality of a mother's social support (Olson et al., 2002). Results concluded that mothers of at-risk children who reported being satisfied with the quality of their social contacts tended to report lower levels of child CPs. Others have focused on the protective factors that preschools may

have on childhood CPs. Webster-Stratton et al. (2008) evaluated an intervention targeting students placed in socioeconomic-disadvantaged schools. These children had been identified as at-risk because of low scores on school readiness, low parental involvement, low socioeconomic status, fewer social skills, and less academic success. Teachers within these schools were taught effective classroom management skills, and social and emotional skills training were integrated into the school curriculum. Results demonstrated that children who were placed in classrooms in which teachers used more positive classroom management strategies and who were engaged in social and emotional skills training displayed much lower levels of CPs than control students.

Behavioral Parent Training Model

The BPT model was first developed as a model of intervention during the 1960s and early 1970s (O'Dell, 1974). Prior to this, the majority of child therapy involved having the therapist work one-on-one with the child. Unfortunately, this approach failed to consider the important influence family and broader contextual factors had on the development and maintenance of CPs. By only targeting the child's dysfunction, treatment effects were rarely maintained once the child returned to their home. According to Kazdin (1985), the emergence of the BPT model came about because of the occurrence of a number of events including the development of behavior modification techniques (i.e., reinforcement and punishment procedures), the trend toward using parents to deliver mental health services, and an awareness that utilizing parents as therapists could greatly enhance the effectiveness of child therapy. BPT is defined as an approach to treating childhood behavior problems by which parents are trained to alter their child's behavior

by altering interactions with their child, promoting prosocial behavior, and decreasing

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

CPs. Although BPT has been used to treat a variety of child behavior problems, it has

been primarily employed as a treatment for young children's overt CPs.

Common Characteristics

Many of the primary BPT programs utilized today are based on the operant two-

stage parent training model for noncompliant children developed by Hanf (1969). The

first stage teaches parents attending skills and differential attention in an attempt to

enhance parent-child relationships, while the second stage focuses on timeout for

misbehavior. Although Dr. Hanf's work was not published or widely disseminated, she

has had considerable influence on the field of parent training. In general, these programs

focus on treating noncompliance and other oppositional behavior in young children.

Although there are a number of different versions of BPT interventions, they share a

number of commonalities (Dumas, 1989; Kazdin, 1995; Miller & Prinz, 1990). Within

the various BPT programs, one common characteristic they share is that the intervention

is conducted primarily with the parents. In fact, parents' therapeutic role is that of

primary treatment provider. Said differently, treatment gains are achieved by having

parents implement the parenting strategies they are taught in session, in a consistent

manner, 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 will typically include instruction in the social learning principles underlying the parenting techniques; providing training in systematic data collection of their child's behavior; training in positive reinforcement procedures; training in extinction and mild punishment procedures, including time out; training in giving clear instructions and commands; and training in problem solving. Therapists will teach parents these strategies by engaging them in 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 treatment of noncompliant behaviors, given they are considered to be the keystone behavior in the development and maintenance of CPs (Forehand & McMahon, 2003; Patterson, Reid, Jones, & Conger, 1975). Treatment is based on the assumption that a child's CPs 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 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

According to the most recent review of evidence-based psychosocial treatments for children and adolescents with disruptive behavior, BPT programs have received substantial support as an empirically sound treatment. In an early test of BPT, Peed, Roberts, and Forehand (1977) sought to evaluate the effectiveness of a BPT program in comparison to a nonintervention control group. Six mother-child pairs who received treatment were compared to six mother-child pairs in a waiting-list control group. In the clinic setting, child compliance and maternal rewards, attends, and contingent attention to compliance increased. Additionally, the treatment effects were shown to generalize to the home setting. The control group did not show any significant changes throughout the study in either the clinic or home.

Others have compared the effects of BPT programs with those of other treatments for children with CPs. Bernal, Klinnert, and Schultz (1980) randomly assigned 36 families of children with CPs to either a BPT program, client-centered parent counseling, or a wait-list control condition. Posttreatment data was collected through parental report and home observational data. Parents report indicated a superior outcome for BPT, relative to the client-centered parenting counseling and wait-list control conditions, although at follow-up there was no maintenance of this superiority. Home observational data demonstrated no advantage of BPT over client-centered parenting counseling, and

these two conditions did not improve significantly more than the wait control group.

Findings reported from a comparative study conducted at the Oregon Social Learning

Center were reported by Patterson and Chamberlain (1988) and by Reid (1987). Seventy

families of children with CPs were randomly assigned to either BPT or to a community

agency employing eclectic family therapy. Results demonstrated significant reductions in

child CPs for families in the BPT condition but no significant reduction for children in

the eclectic family therapy condition. In addition, only mothers in the BPT condition

reported significant reductions in levels of depression.

More recently, a randomized controlled trial of BPT was conducted by

Schuhmann, Foote, Eyberg, Boggs, and Algina (1998). In this trial, 64 families with 3- to

6-year-old children diagnosed with ODD were assigned to the treatment condition or a

waiting-list control. Results demonstrated that when compared to the control group,

children in the treatment group showed greater reductions in CPs and parents reported

less stress and felt more in control. In addition, treatment gains were maintained at a 4-

month follow up. Hood and Eyberg (2003) conducted a follow-up study involving the 23

families from the Schuhmann and colleagues study at 3-6 years posttreatment. Based

upon maternal report, child behavior and parental locus of control had been maintained.

Finally, the 23 families that completed treatment in the Schuhmann and colleagues study

were compared to 23 families that dropped out. Overall, families that completed

treatment had maintained gains at follow-up, while the children in families that had

dropped out of treatment had returned to pretreatment levels of CPs (Boggs et al., 2004).

More broadly, numerous meta-analyses have been conducted examining the specific components of BPT that are effective in reducing rates of CPs in children and adolescents. A meta-analysis conducted by Maughan, Christiansen, Jenson, Olympia, and Clark (2005) examined the effectiveness of BPT for children and adolescents with disruptive behavior disorders. To be included in the meta-analysis, studies had to utilize 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). Mean weighted effect sizes were calculated for each of the three design categories (between-subjects, within-subjects, and single-subjects). Mean weighted effects sizes were .30 for between-subjects design, .68 for within-subjects design, and .54 for single-subject design. Based upon these results, the authors concluded that BPT is a successful intervention in reducing disruptive behaviors in children. A more recent meta-analysis of BPT (Kaminski, Valle, Filene, & Boyle, 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 the treatment components predictive of the largest effect size included positive interactions with child, time out, consistent responding, modeling, and practicing with own child.

Limitations

As was previously discussed, treatment for CPs has undergone extensive empirical review and has consistently demonstrated that BPT is more effective than other types of interventions used (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 treatment effects often

failing to transfer to settings in which treatment did not take place and treatment effects

failing to maintain following termination (McMahon et al., 2006). In addition, the

efficacy rates for interventions with these children have demonstrated that at follow-up

assessments approximately one third of parents continue to report that their children's

behavior falls in the clinical range (Hartman et al., 2003). Data has 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 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

transitory in nature, making it more malleable overall. Unfortunately, BPT has primarily

been used as an intervention for children with CPs, rather than utilizing its full potential

as an early intervention strategy with young children or 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 CPs (Conduct Problems Prevention Research Group, 1999). By the

time children have reached school-age, coercive parent-child interactions have been heavily rehearsed, CP behaviors have emerged across multiple settings (i.e., home and school), and children are more likely to have experienced academic problems and peer rejection (Conduct Problems Prevention Research Group, 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 they will be 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 target risk and protective factors that have been implicated as causally associated with the development and maintenance of a disorder (Conduct Problems Prevention Research Group, 2002). Thus, preventative programs focus on breaking the causal chain or altering the underlying causal mechanism 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 chains and mechanisms.

Preventative science has developed various models to describe the timing and population targeted for treatment. Prevention efforts are commonly referred to as primary, secondary, or tertiary (Institute of Medicine, 1994). Primary prevention targets

healthy individuals who have not yet exhibited signs of a disorder but may have risk-factors present in their lives. The focus is on preventing the development of a disorder. Secondary prevention targets individuals who are presenting with minor symptoms and are "at-risk" for developing a disorder but have not yet met diagnostic criteria. At this stage, focus is given to reducing the prevalence and severity of symptoms so that a clinical diagnosis can be prevented. The final level is referred to as tertiary prevention. At this final stage, treatments target individuals late in the trajectory of dysfunction, as individuals have received a clinical diagnosis. As such, emphasis is placed on preventing the occurrence of further dysfunction or the development of secondary conditions. BPT has historically aligned most closely to the rationale underpinning tertiary prevention models of treatment. Thus, an emphasis has been placed on alleviating the severity of the problem and preventing further behavioral decline rather than preventing the development of clinical levels of disruptive behaviors from ever occurring.

Primary prevention programs offer services to nonreferred populations that complement clinical services offered at the secondary and tertiary level because of the mental health impact they provide for the general population. They also allow for the provision of services earlier in the development of a disorder, thus increasing the likelihood that behaviors will be more malleable to treatment. Although secondary preventions do serve to prevent dysfunction in individuals who are presenting with only minor problems, primary 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, primary prevention has the potential of being much more cost-effective than both

secondary and tertiary prevention programs. In addition, primary prevention programs have been shown to allow greater ease in transferring behavioral changes from the clinic to the home (Barlow, Parsons, & Stewart-Brown, 2005), addressing many of the generalization concerns that arise in secondary and tertiary prevention programs.

Specific Preventative Programs

Given the substantial advances that have been made in identifying risk and protective factors associated with developmental pathways leading to CPs, increased attention has been given to developing preventative programs that prevent the occurrence of clinically significant behavior problems. A review of the literature indicated that preventative work has primarily focused on secondary and tertiary preventions. That is, children who are targeted for treatment are already exhibiting CP behaviors at an elevated rate and oftentimes at a clinical level. A summary of these preventative programs and their efficacy follows.

The Incredible Years program is a preventative parent training program designed to alter the developmental trajectory of preschool and early school-aged (ages 3-8) children who are displaying CPs (Webster-Stratton & Reid, 2003). In general, this program targets children who are already exhibiting clinical levels of CP behavior, classifying it as a tertiary prevention program. Utilizing strategies put forth by the Hanf and HNC models, 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 videotape program of modeled parenting skills, shown by the therapist to groups of parents. There are 250 video vignettes, each lasting approximately 1-2 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 time-out. Finally, parents are taught how to teach their children problem-solving skills. 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 CPs 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 4-6 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.

Webster-Stratton (1984) sought to demonstrate the efficacy of the BASIC program by randomly assigning mothers of clinic-referred children with CPs to the BASIC program, an individual parent training program, or a waiting-list control. 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 (1994) 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. The efficacy of the BASIC program has also been evaluated by an independent group of researchers (Taylor, Schmidt, Pepler, & Hodgins, 1998). Within this study, the effectiveness of the BASIC program was compared to treatment as usual in a community mental health center. Children ($N = 108$) were assigned to the BASIC program, treatment-as-usual, or a waiting list control. At posttreatment, both the BASIC and treatment-as-usual groups showed greater reductions in child CPs compared to the waiting-list control group. In addition, compared to the treatment-as-usual group, children in the BASIC group had significantly fewer behavioral concerns and parents reported high consumer satisfaction. In general, research studies have demonstrated that approximately two thirds of children in The Incredible Years program showed clinically significant behavior improvements,

with 25% to 46% of parents still reporting clinically significant child behavior problems (Webster-Stratton & Reid, 2003).

Triple P-Positive Parenting Program (Triple P) is another preventative program that has received considerable attention (Sanders, 1999; Sanders et al., 2000). Triple P 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. However, emphasis has been given to treatments received in the two upper-levels of the program, with these levels being classified as tertiary preventions. 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 12-16. 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. Level 2 (Selected Triple P) is a one- to two-session, brief consultation program delivered by primary health care providers for parents with concerns about one or two mild behavior problems. At this level, primary care providers disseminate problem-specific advice, tip sheets, and videotapes demonstrating positive parenting strategies. Primary Care Triple P (Level 3) is a four-session program conducted by a primary health care provider wherein parents are taught appropriate parenting skills designed to address problem behavior. This level of prevention is appropriate for parents of children with mild-to-moderate CP behaviors.

Level 4 (Standard Triple P) target children with more severe CPs and include 8-10

intensive sessions with a mental health practitioner. 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. Enhanced Triple P (Level 5)

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 et al. (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 CPs.

Although mothers in the treatment group reported using fewer dysfunctional parenting

practices at postintervention, the treatment groups did not differ from the control group in

terms of observed aversive mother behavior. In an additional randomized controlled trial

of 87 families with 3 year olds, Standard Triple P, Enhanced Triple P, and a waiting-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). 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 difference was found between the Selected Triple P prevention group and the waiting-list controls. In general, all forms of Triple P have been shown to have moderate-to-large effect when outcomes were parent-report child and parenting behaviors, with the exception of Universal Triple P which has been shown to have small effects (Thomas & Zimmer-Gembeck, 2007).

One final preventative program that warrants attention is the Fast Track Project (Conduct Problems Prevention Research Group, 2000). This prevention program has incorporated all three levels of the prevention model. This program was guided by developmental theory positing that the development of antisocial behavior was influenced by the interaction of multiple influences. 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 CPs. 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 to 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 3-5. 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 5-10 were targeted during the adolescent phase of the project. Intensive prevention efforts began during the transition from grade school to middle school (Grades 5-7) and continued with individualized preventative support through Grades 8-10. 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 initial effectiveness of the Fast Track project through elementary school was demonstrated with 891 behaviorally-disruptive kindergarten children and their parents who were identified during a multi-stage universal screening involving both teacher and parent ratings of disruptive behavior (Conduct Problems Prevention Research Group, 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 CPs, 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. Evaluation analysis completed at the end of the third year of the prevention trial revealed that children in the treatment condition continued to be less likely to exhibit serious problem behaviors compared to children in the control condition. The longitudinal effects cannot yet be evaluated as the project with the original cohort has yet to be completed. In general, preliminary results of

the Fast Track project indicate moderate positive effects on children's CP behaviors (Conduct Problems Prevention Research Group, 1999).

Summary and Conclusions

BPT has been firmly established as an empirically supported intervention for treating children with CPs. Treatment outcome studies consistently document that school-age children display less noncompliance and aggression when parents are taught to replace maladaptive parenting practices with more appropriate parenting practices. Although BPT has a longstanding history of demonstrating improvements in children's CPs, inherent weaknesses remain. Namely, approximately one third fail to complete treatment and an additional one third fail to show improvement following 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 levels of CPs. By targeting young children who are displaying relatively minor and developmentally typical misbehavior, but who are at-risk for developing more severe CPs, it may be possible to alter their developmental trajectory. A significant gap in the literature exists regarding preventative interventions targeting children at-risk for developing clinical CPs. Additional research is needed to determine what preventative measures could be utilized to help this population.

CHAPTER III

PURPOSE AND OBJECTIVES

A comprehensive downward extension of BPT has not been developed and tested

with very young children. The aim of the current research was to develop a very

simplified version of BPT as a primary prevention program for use with very young

children who (a) currently exhibit developmentally typical rates of misbehavior but (b)

are identified as at-risk for developing severe CPs. 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. In addition,

the brief nature of a primary prevention program may address a primary variable (e.g.,

length of treatment) influencing the large percentage of parents that drop out of treatment

prematurely. Finally, by targeting very young children, opportunities to develop, practice,

and perfect coercive behavioral patterns may be pre-empted.

Thus, this study was designed to determine the utility of PBPT, a modified

approach to BPT that can be utilized to train parents to effectively manage their young

child's misbehavior, thereby preventing the development of clinical levels of disruptive

behaviors. This addressed a gap in the literature and provided a basis for additional model

development and evaluation.

Single case experimental methodology was utilized to examine individual pre-,

post-, and longitudinal differences in changes in disruptive behavior as a result of

exposure to PBPT. Evaluating behavioral changes over a 6-month period at the individual

level provided a detailed picture of individual differences that emerged. The strength of

this method was further established by the inclusion of a comparison group in examining changes in disruptive behaviors over time. While this is rarely seen in the literature, it provides additional information regarding the long-term impact of a primary prevention program through comparison against a normative developmental trajectory of at-risk children over a 6-month period.

To summarize, the current project was designed to answer the following specific questions:

1.   To what extent will PBPT produce immediate decreases in noncompliance among 1½- to 3-year-old children at-risk of developing CPs?

2.   To what extent will PBPT effects be maintained across a 6-month period among 1½- to 3-year-old children at-risk of developing CPs in regards to noncompliance?

3.   To what extent will PBPT produce immediate decreases in tantrums among 1½- to 3-year-old children at-risk of developing CPs?

4.   To what extent will PBPT effects be maintained across a 6-month period among 1½- to 3-year-old children at-risk of developing CPs in regards to tantrums?

5.   To what extent do children exposed to PBPT differ regarding their disruptive behaviors developmental trajectory relative to comparison children?

It was hypothesized that treatment group children would display immediate decreases in target behaviors as a result of exposure to PBPT and that treatment group children would maintain low rates of the target behavior across a 6-month period of time.

As a result, treatment group children would display lower rates of the target behaviors than comparison children at 6-months posttreatment.

CHAPTER IV

METHODOLOGY

Participants

Twelve mothers with a child between 1½ and 3 years of age were recruited. To control for the potential confounding effects of the gender of the parent, fathers were excluded from directly participating in this study. Participants were recruited through campus/community flyer placements (see Appendix A) and announcements. Flyers were placed in a broad range of public settings such as libraries, grocery stores, campus buildings, apartments, and pediatric offices. Announcements were also made in undergraduate courses. In addition to receiving study-related services (developmental screening report and PBPT materials/consultation), student parents had the opportunity to receive course credit for their undergraduate courses.

Pre-experimental Assessment

In order to participate, children had to meet the following criteria: (a) children had not received previous psychological services, (b) children were not displaying clinical levels of CP behaviors, (c) children were developing typically, (d) parents expressed concern regarding their ability to effectively manage their child's noncompliance and tantrums, and (e) parents reported the presence of two or more risk factors in their lives. Participant families were initially screened via a telephone interview to ensure that (a) children had not received previous psychological services, and (b) mothers expressed concerns regarding their ability to effectively manage their child's behavior (see

Appendix B). To ensure the child was at an age-typical developmental level, the

Cognitive and Communication domains of the Battelle Developmental Inventory, Second

Edition (BDI-II; Newborg, 2005) was administered. Participants with developmental

levels that matched or exceeded that expected by their age were included. To ensure the

child was not already displaying clinical levels of CP behaviors, the CBCL (Achenbach

& Rescorla, 2000) was administered. Participants who did not fall in the clinical range on

the Oppositional Defiant Problems DSM-oriented scale were included. Finally, in order

to identify at-risk families, parents had to report that at least two of the following risk

factors were present: single-parent household, low socioeconomic status, parental

psychopathology, high levels of negative life stressors, marital conflict, inadequate social

support, and child psychopathology (excluding disruptive behavior disorder, ODD, or

CD). The presence of a single- or dual-parent household was ascertained through the use

of a demographics questionnaire (see Appendix C) completed by the parents. Low

socioeconomic status was determined by comparing reported family per capita income

(total income divided by number of family members) to the poverty threshold, with those

falling below the poverty threshold being classified as having low socioeconomic status

(U.S. Census Bureau, 2008). Parental psychopathology was defined as the presence of

any elevated scores on the Brief Symptom Inventory (BSI; Derogatis, 1993). The

Parenting Stress Index (PSI; Abidin, 1995) was used to determine the presence of high

levels of negative life stressors (e.g., elevated Life Stress and/or Total Stress scores),

marital conflict (e.g., elevated Spouse scores), depression (e.g., elevated Depression

scores) and inadequate social support (e.g., elevated Isolation). Child psychopathology

was defined as scores falling in the borderline or clinical range on the DSM-oriented, Externalizing, and syndrome subscales on the CBCL.

Design

The study employed a multiple-baseline, small N, experimental design and included three experimental conditions: a time-one (T1) treatment group ($n = 4$), a time-two (T2) treatment group ($n = 4$), and a comparison group ($n = 4$). Cases were randomly assigned to each experimental condition to enhance generalizability. Baselines were variably extended across time to control for temporally based confounding factors. Thus, each treatment group (T1 and T2) was exposed to the independent variable (PBPT) in an identical manner but at different time intervals. Comparison participants received the intervention at the conclusion of the study (approximately 6 months later).

Setting

The study was conducted in a single room in a research lab in the Utah State University Psychology Department. The room contained an adult-sized table with four chairs, one child-sized table, two small chairs, and shelving for toys (within the child's reach). The shelves contained candy, office supplies, a block puzzle game, and a ball. A set of Play-doh was on the small table and a windsock was hanging from the ceiling. Blocks required for a novel construction task, toy food, and toy monkeys were in the center of the floor.

Procedure

Families responding to recruitment efforts were initially screened via telephone to (a) eliminate families who had sought out previous psychological services for their child and (b) to identify families wherein parents were expressing concern regarding their ability to effectively manage their child's behavior. Families meeting these criteria were asked to come into the research lab to complete multiple screening assessments to determine if they met inclusion criteria. During this visit, families were introduced to the project, informed consent was obtained, and the BDI-II was administered. While the inventory was being administered, information regarding the child's functioning, the parent-child relationship, and the presence of risk-factors was elicited from parents via the completion of various measurement instruments. Families meeting all criteria were then invited to participate in Phase I of the project.

Phase I lasted approximately six weeks and began with a videotaped standardized observational assessment of parent-child interactions. Specifically, parents were prompted via one-way radio communication to instruct their child to play independently with available toys or engage in a clean task (see Appendix D). Parents were asked to manage their child's behavior during free play, toy clean-up, and mother-busy conditions. These are analog conditions designed to mimic conditions that are typical within home environments and prompt behaviors and parent-child interactions typical of that setting. Finally, parents were sent home with instructions to collect Home Record Card (HRC) data for the next 2 (T1) to 4 (T2) weeks. The entire first session lasted approximately one hour.

Two weeks following their initial visit, T1 families visited the clinic once a week (for 2 weeks) to participate in PBPT, a two-session program designed to teach basic skills for managing noncompliance and tantrums of young children. Specifically, PBPT utilizes behavior shaping strategies adapted from BPT that are developmentally appropriate for children aged 1½ to 3. In session one, parents were taught specific strategies including (a) using their attention strategically, (b) using effective commands, and (c) utilizing timeout appropriately. Parents were taught through didactic instruction and modeling. They were also given a one-page handout to take home detailing the parenting skills discussed in session (see Appendix E). Session two involved a brief review of the skills taught in session one and an opportunity for parents to receive additional support regarding any questions or concerns that came up during the previous week. Parents continued to function as participant observers in home and community environments throughout Phase I of the project by filling out the HRC. T1 families completed Phase I of the project by participating in a second standardized observation assessment (identical to the first observation) approximately six weeks following their initial clinic visit. Each treatment session was 50 minutes in length, and the second observation session lasted approximately 30 minutes.

T2 families returned for the two-session program 4 weeks following their initial visit but were otherwise exposed to the intervention in an identical manner. All treatment families received a telephone call 3 months post-Phase I. During this phone call, parents were reminded to continue using the strategies taught and verified the time of their next appointment. Comparison group families returned to the research lab for the same

number of visits as treatment group families but simply returned and reviewed their completed HRCs. Comparison group families also received a telephone call 3 months post-Phase I, at which time they verified the time of their next appointment.

All families participated in the second phase of the project that occurred approximately six months post-Phase I. Phase 2 was a follow-up probe during which families made a 30-minute visit to the community clinic to participate in a third standardized observation session (identical to the first two observations). In addition, parents collected 2 additional weeks of home and community data as participant observers. Comparison group participants received the intervention at the conclusion of the study and a study debriefing was conducted.

Measures

There were three primary measures used to screen participants: BSI, CBCL, and PSI. Each of these measures was collected for each participant prior to being invited to participate in Phase I of the study.

Parents were asked to complete the BSI (Derogatis, 1993), a self-report measure used to assess a broad range of psychological symptoms containing 53 items. On this measure, parents are asked to rank on a 5-point scale how well each feeling item characterizes their level of distress during the past 7 days. This measure yields three global index scores (Global Severity Index, Positive Symptom Total, and Positive Symptom Distress Index), as well as nine primary symptom scales (Depression, Anxiety, Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism). Research has consistently attested to the

validity of the BSI (Derogatis, 1993) and has been shown to have high levels of reliability, with the Global Severity Index reliability being reported at $r = .96$ (Shahar, Soffer, & Gilboa-Shechtman, 2008).

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 are 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 2 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 been found to show high levels of reliability (Achenbach & Rescorla, 2000) and has been extensively validated on previous research (Rescorla, 2005).

Parents were asked to complete the PSI (Abidin, 1995), a self-report measure used to assess the level of stress a parent is experiencing based upon salient child characteristics, parent characteristics, and situations directly related to the parenting role. The PSI contains 120 items and asks parents to indicate how well they agree with each statement. This measure yields a Total Stress score, which is then broken down in Child Domain, Parent Domain, and Life Stress scale scores. The Child Domain is further broken down into six subscale scores (distractibility/hyperactivity, adaptability,

reinforces parent, demandingness, mood, acceptability) and the Parent Domain is further broken down into seven subscale scores (competence, isolation, attachment, health, role restriction, depression, and spouse). Research involving the PSI has indicated a high degree of internal consistency and has been extensively validated with various populations; including children with conduct disorder (Abidin, 1995).

Dependent Variables

Rates of noncompliance and tantrums were the primary dependent variables for this study. Frequency of target behaviors was measured in two ways: under a standardized condition and within a nonstandardized condition. Rates of target behavior were measured in a lab setting under standardized conditions designed to control a variety of environmental variables, including parental responses to displays of the target behavior. Behaviors were coded using a coding system developed by Hanf (Hanf & Kling, 1973) and subsequently modified by Forehand (Forehand, King, Peed, & Yoder, 1975). The coding system was further modified for the purposes of this study. The coding system evaluated parent behaviors, child behaviors, and parent-child behaviors, and permitted the recoding of both partial interval and event recording (see Appendix F). Observation sessions were broken down into four separate conditions, each lasting approximately eight minutes. Partial interval recording was used for tantrums, with intervals being broken down into 10 seconds. Event recording was used for noncompliance. Data on tantrums was analyzed by summing the total number of intervals in which a tantrum was occurring within each condition throughout the observation session. This yielded a total frequency count for tantrums that occurred in each

observation session, and within each condition. Data on noncompliance was analyzed by summing the total number of incidents of noncompliance following an alpha command throughout the observation session. This yielded a total frequency count for noncompliance that occurred in each observation session, and within each condition.

Rates of the target behaviors were also measured within the home and community. HRCs were used to record this data. HRCs allow for event recording of noncompliance and tantrums. Parents were trained as participant observers who will collect data on a daily basis and return it to the clinic each visit. Weekly mean rates of noncompliance and tantrums were calculated by adding all instances of these behaviors during the course of a week and dividing by seven.

Interobserver Agreement

Thirty percent of standardized observation sessions were simultaneously coded by trained graduate student observers to derive estimates of interobserver agreement. Interobserver agreement was calculated by the point-by-point method, which is found by dividing total number of agreements by the total number of agreements plus disagreements and multiplying by 100% to yield a percentage score.

Data Analysis

In a manner consistent with the tradition of single-case design methodology, data was graphically displayed and analyzed primarily via visual inspection of level, trend, and variability (Hayes, Barlow, & Nelson-Gray, 1999). To facilitate visual analysis, observed changes were classified as either mild, moderate, or significant. Mild change is

defined as an increase or decrease of 0-33%, a moderate change is defined as an increase

or decrease of 34-67%, and a significant change is defined as an increase or decrease of

68-100%. To fully address the empirical questions that guided this study, group

comparisons and within-subject analysis was conducted. Descriptive statistics were

computed to supplement the graphical display of data.

CHAPTER V

RESULTS

Demographic Information

As indicated previously, 12 families with a child between 1½ and 3 years of age

who was determined to be at risk for developing later CPs were recruited. Table 1

describes the participants across a variety of demographic variables.

Three prevention participants were male and five prevention participants were

female. Prevention participants ranged in age from 18 months to 28 months, with a mean

age of 22.5 months. Seven prevention participants were White, with one prevention

Table 1

Demographic Information of Participants

Participant	Gender	Age (in months)	Ethnicity	Family income
		Prevention Participants		
P1	M	20	White	Low
P2	M	28	White	High
P3	F	27	White/Hispanic	High
P4	F	20	White	Low
P5	F	24	White	High
P6	M	24	White	High
P7	F	19	White	Average
P8	F	18	White	Low
		Comparison Participants		
C1	M	20	White	High
C2	M	19	White/Hispanic	Low
C3	M	32	White	Low
C4	M	33	White	Low

participant identifying as ½ White and ½ Hispanic. All prevention participants were English-speaking. Four prevention participants came from households with a low or average income level and four prevention participants came from households with a high income level.

All four comparison participants were male. Comparison participants ranged in age from 19 months to 33 months, with a mean age of 26 months. Three comparison participants were White, with one comparison participant identifying as ½ White and ½ Hispanic. All comparison participants were English-speaking. Three comparison participants came from households with a low income level and one comparison participant came from a household with a high income level.

Risk Factors

Table 2 describes the various risk factors identified for each of the treatment and comparison participants. As previously mentioned, participants were considered at-risk if they reported the presence of two or more risk factors.

As can be seen in Table 2, all participants were identified as having two or more risk factors present in their life. The number of reported risk factors varied widely among participants.

Child Behavior Checklist

Table 3 displays baseline, posttreatment, and longitudinal results for treatment and comparison participants on the CBCL Oppositional Defiant Problems DSM-oriented

Table 2

Risk Factors for Participants

Participant	Maternal depression	Child psychopathology	Isolation	Life stress	Single parent	Poverty
		Prevention Participants				
P1	X				X	X
P2		X	X	X		
P3		X	X	X		
P4	X	X		X	X	X
P5	X	X		X		
P6		X		X		
P7		X		X		
P8	X	X				X
		Comparison Participants				
C1		X		X		
C2		X	X	X		X
C3		X	X	X		X
C4	X	X	X	X		

scale score. This measure converts raw scores into *t* scores, which have a mean of 50 and a standard deviation of 10. For DSM-oriented scale scores, *t* scores less than 67 are considered in the normal range, *t* scores ranging from 67 to 70 are considered in the borderline clinical range, and *t* scores above 70 are considered in the clinical range. Individuals were excluded from the study if they reported a clinical score at baseline. Participants were considered at-risk if they reported a borderline clinical score.

Three prevention participants were in the normal range at baseline according to the CBCL Oppositional Defiant Problems DSM-oriented scale, while five prevention participants were in the borderline range. Seven prevention participants were in the normal range at posttreatment, while one prevention participant was in the borderline

Table 3

CBCL Oppositional Defiant Problems DSM-Oriented Scale Scores

	t scores[a]		
Participant	Baseline	Posttreatment	Longitudinal
Prevention Participants			
P1	59	64	55
P2	64	59	55
P3	67	59	52
P4	67	52	52
P5	67	55	55
P6	67	67	55
P7	64	55	55
P8	67	51	55
Comparison Participants			
C1	67	80	73
C2	67	73	77
C3	67	70	59
C4	67	73	70

[a] <67 = normal; 67-70 = borderline clinical; >70 = clinical

range. All eight prevention participants were in the normal range at 6-months

posttreatment.

All four comparison participants were in the borderline range at baseline

according to the CBCL Oppositional Defiant Problems DSM-oriented scale. All four

comparison participants were in the clinical range at posttreatment. At 6-months

posttreatment, three comparison participants remained in the clinical range, while one

comparison participant fell within the normal range.

Interobserver Agreement

To establish interobserver agreement, 20% of standardized observation sessions

were simultaneously coded by trained graduate student observers to derive estimates of interobserver agreement. Interobserver agreement was calculated by the point-by-point method, which is found by dividing total number of agreements by the total number of agreements plus disagreements and multiplying by 100% to yield a percentage score. Mean percentage interobserver agreement was 86%, with a range of 74-98% through all experimental phases.

Empirical Questions

Immediate Decreases in Noncompliance

To what extent will PBPT produce immediate decreases in noncompliance among 1½- to 3-year-old children at-risk of developing CPs?

Figures 1 through 4 graphically display HRC data for baseline, posttreatment, and longitudinal reports of daily frequency counts, as well as weekly mean rates, of noncompliance for Time 1 prevention participants (P1-P4). The mean rate for each condition is indicated directly above its corresponding data. A dotted horizontal line visually represents the mean rate within each condition. A vertical horizontal line is placed between each condition shift. Solid lines connect the individual data points within each condition. All graphs are placed on the same numerical scale. All graphs discussed in the results section will follow this format.

A clear upward trend prior to treatment was seen for three out of four participants (P1, P2, and P3), with one participant (P4) demonstrating a mild downward trend. Once treatment was implemented, a marked shift to a downward trend was seen for three out of four participants (P1, P2, and P4), with one participant (P3) demonstrating a mild upward

Figure 1. Daily frequency count of noncompliance, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 1.

Figure 2. Daily frequency count of noncompliance, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 2.

Figure 3. Daily frequency count of noncompliance, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 3.
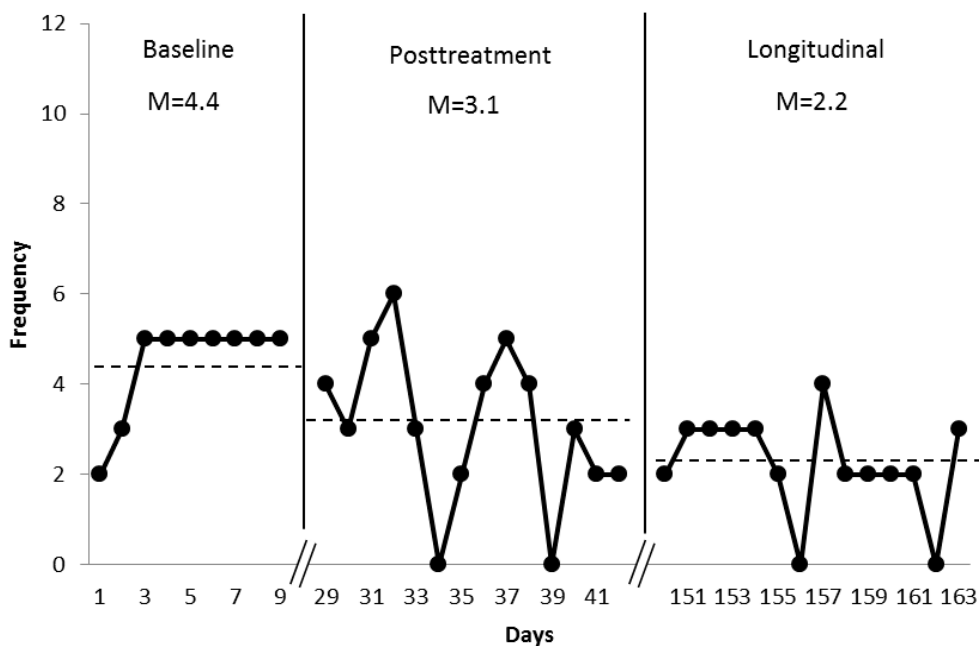

Figure 4. Daily frequency count of noncompliance, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 4.
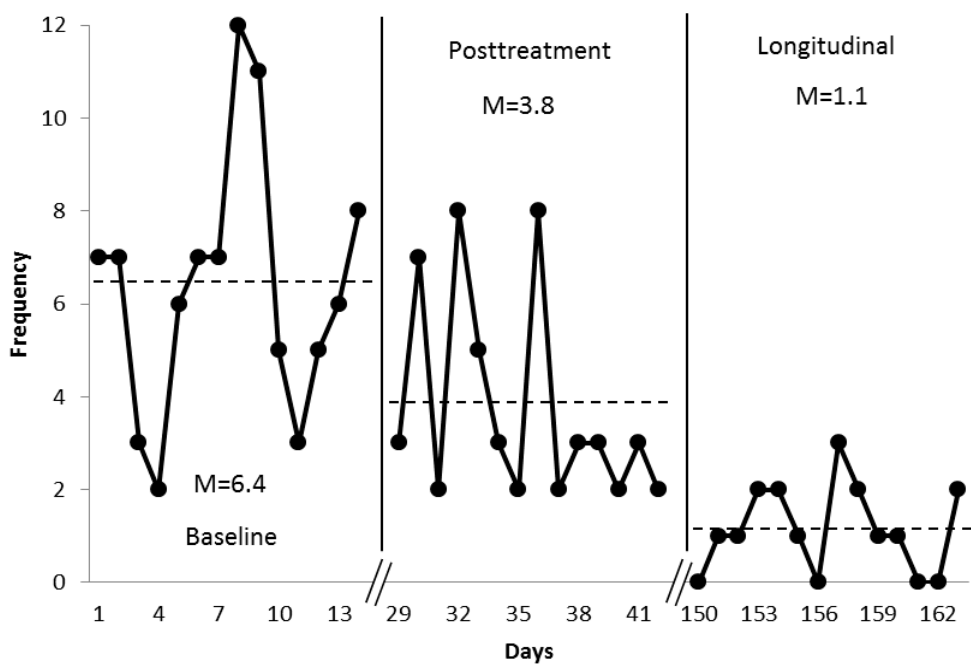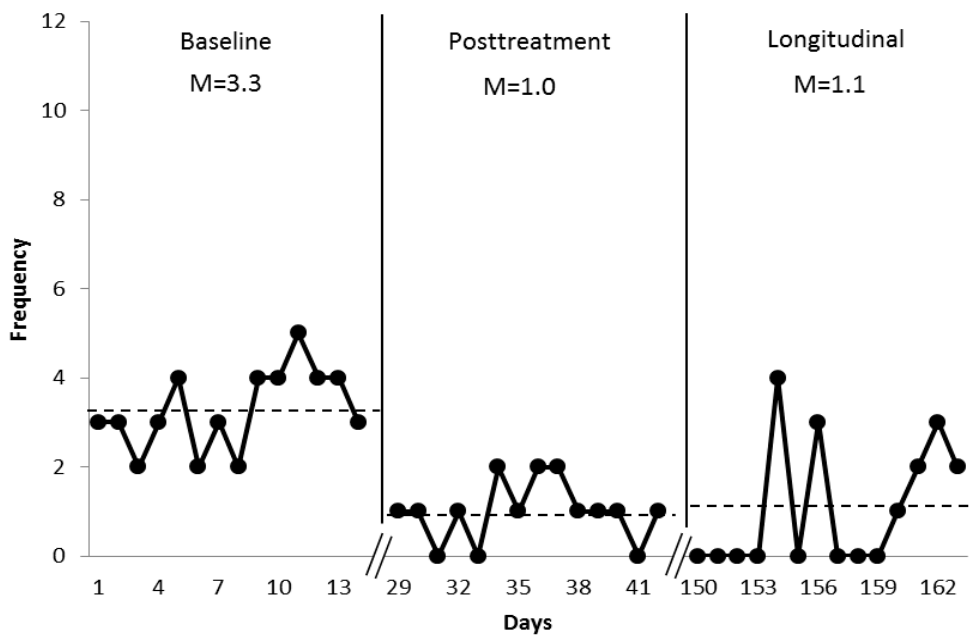
trend. A clear decrease in variability from baseline to posttreatment was seen for three out of four participants (P2, P3, and P4), with one participant (P1) demonstrating a mild increase in variability.

A clear decrease in level from baseline to posttreatment was seen for all participants. One participant (P1) showed a 30% decrease in level from baseline to posttreatment, which is considered a mild effect. A moderate effect was shown for two participants (P2 and P4), with a 41% and 63% decrease in level from baseline to posttreatment, respectively. One participant (P3) showed a 70% decrease in level from baseline to posttreatment, which is considered a significant effect.

Table 4 describes the proportion of noncompliance relative to the number of alpha commands given, collected during observational sessions conducted at baseline, posttreatment, and 6-months posttreatment for Time 1 prevention participants (P1-P4). Alpha commands were defined as a direct command that was immediately executable. Frequency data was not included given that the frequency count of noncompliance was directly influenced by the number of alpha commands given by the mother. For example, if a mother was coded as giving four alpha commands, the maximum number of acts of noncompliance that could be coded would be artificially capped at four. In contrast, if a mother was coded as giving 20 alpha commands, the maximum number of acts of noncompliance would also be 20. Thus, by focusing on proportional data, the frequency of a mother's alpha commands was controlled for in relation to observed noncompliance.

A decrease in the proportion of noncompliance relative to the number of alpha commands given was observed for all four participants from baseline to posttreatment.

Table 4

Observed Noncompliance for Prevention Participants 1-4 Across Baseline,

Posttreatment, and 6-Month Follow-Up

Participant	Total proportion (%)		
	Baseline	Posttreatment	Longitudinal
P1	80	45	43
P2	58	48	51
P3	69	39	14
P4	40	36	9

Two participants (P1 and P3) demonstrated moderate decreases in noncompliance. Two

participants (P2 and P4) demonstrated more mild decreases in noncompliance.

Figures 5 through 8 graphically display HRC data for baseline, posttreatment, and

longitudinal reports of daily frequency counts, as well as weekly mean rates, of

noncompliance for Time 2 prevention participants (P5-P8). Formatting for the following

graphs is consistent with the description previously provided.

A downward trend was observed prior to treatment for all participants, with three

participants showing a moderate downward trend (P5, P7, and P8) and one participant

showing a significant downward trend (P6). Once treatment was implemented, one

participant (P7) showed a decelerated continual downward trend, one participant (P6)

showed a steady downward trend, and two participants (P5 and P8) showed an

accelerated continual downward trend in comparison to trends observed at baseline.

A clear decrease in variability from baseline to posttreatment was seen for all four

participants. Three participants demonstrated a moderate decrease in variability and one

participant demonstrated a significant decrease in variability.

Figure 5. Daily frequency count of noncompliance, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 5.
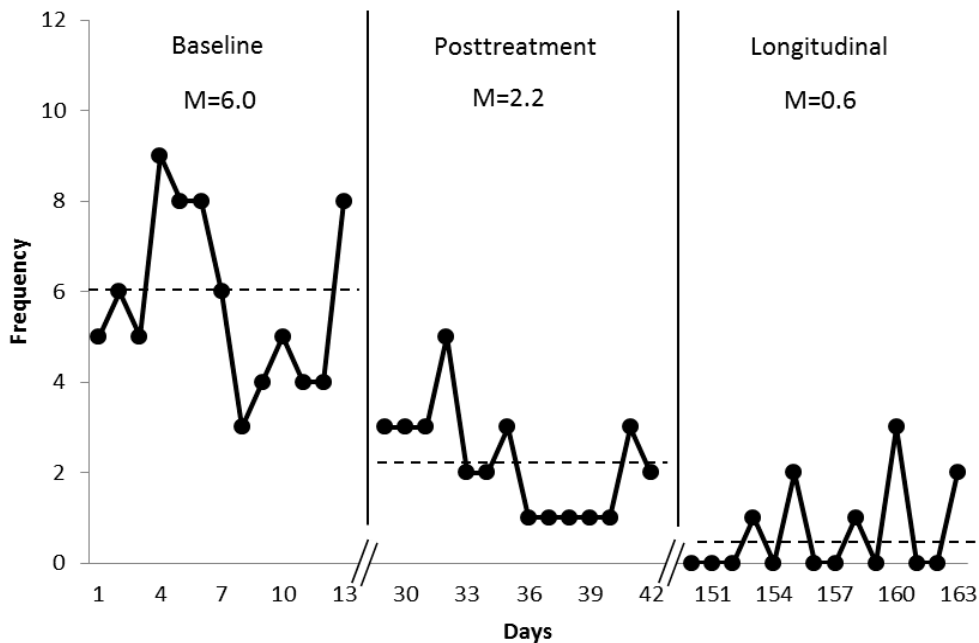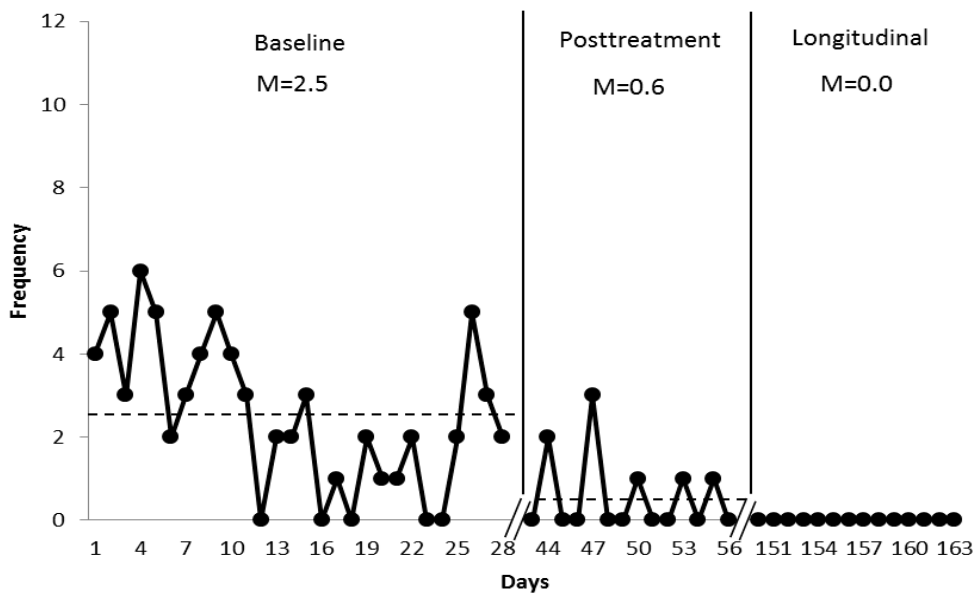

Figure 6. Daily frequency count of noncompliance, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 6.
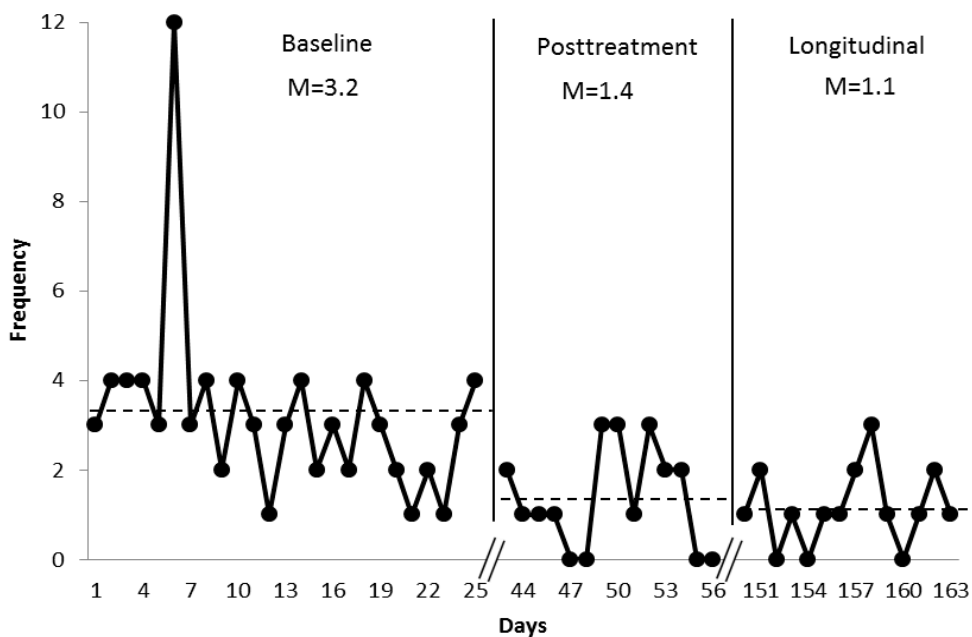
Figure 7. Daily frequency count of noncompliance, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 7.
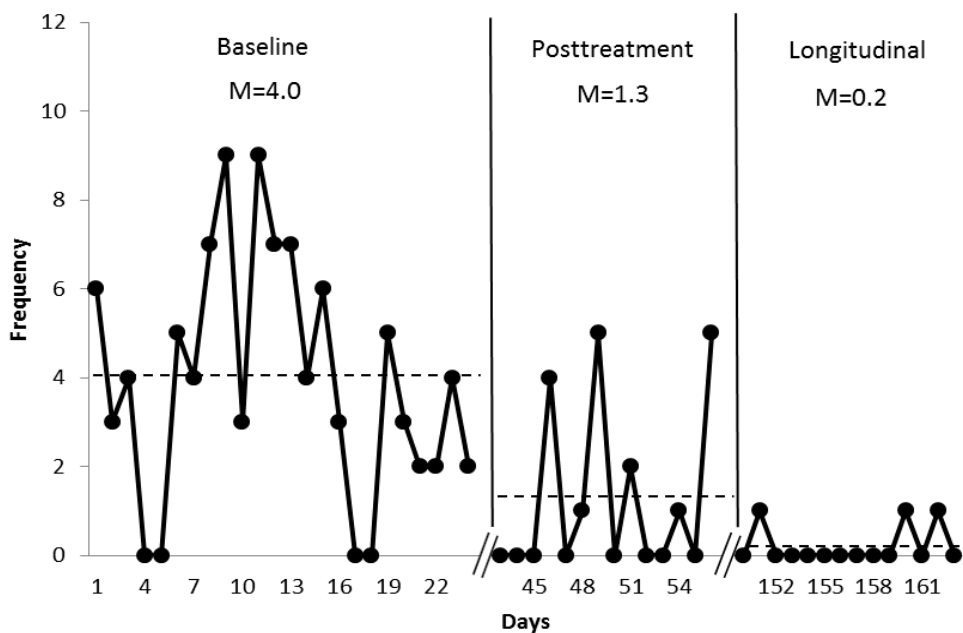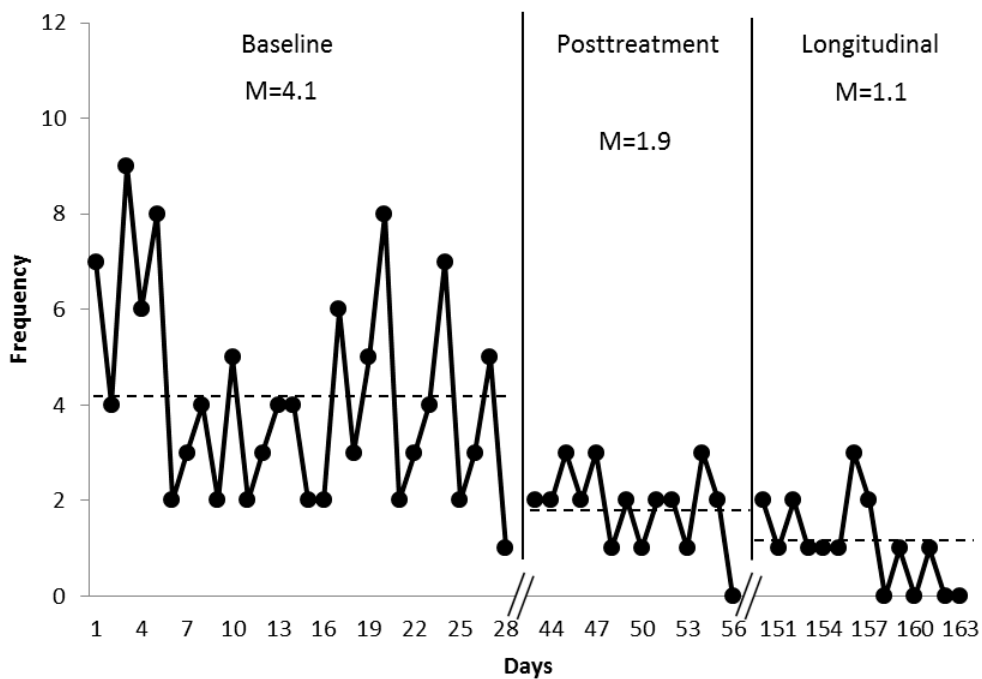

Figure 8. Daily frequency count of noncompliance, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 8.

A substantial decrease in level from baseline to posttreatment was seen for all participants. A moderate effect was shown for two participants (P7 and P8), with a 56% and 54% decrease in level from baseline to posttreatment, respectively. A significant effect was shown for two participants (P5 and P6), with a 68% and 76% decrease in level from baseline to posttreatment, respectively.

Table 5 describes the proportion of noncompliance relative to the number of alpha commands given, collected during observational sessions conducted at baseline, posttreatment, and 6-months posttreatment for Time 2 prevention participants (P5-P8). Description of the following table is consistent with the description previously provided for Table 4.

A decrease in the proportion of noncompliance relative to the number of alpha commands given was observed for three out of four participants from baseline to posttreatment. One participant (P5) demonstrated a mild decrease, one participant (P7) demonstrated a moderate decrease, and one participant (P8) demonstrated a significant decrease. A mild increase in noncompliance was observed for one participant (P6) from baseline to posttreatment.

Longitudinal Maintenance of Rate of Noncompliance

To what extent will PBPT effects be maintained across a 6-month period among 1½- to 3-year-old children at-risk of developing CPs in regards to noncompliance?

As can be seen in Figures 1 through 4, a clear downward trend in HRC data was seen for three out of four Time 1 prevention participants (P1, P2, and P4) following the implementation of treatment, with one participant (P3) demonstrating a mild upward

Table 5

Observed Noncompliance for Prevention Participants 5-8 Across Baseline,

Posttreatment, and 6-Month Follow-Up

Participant	Total proportion (%)		
	Baseline	Posttreatment	Longitudinal
P5	27	22	20
P6	39	41	46
P7	62	41	23
P8	58	12	20

trend. A continual decrease in variability was seen for two out of four participants (P2

and P4) at posttreatment, and again at 6-months follow-up. One prevention participant

(P1) had previously demonstrated an increase in variability at posttreatment, with a

decrease in variability consistent with that observed at baseline. One prevention

participant (P3) had previously demonstrated a decrease in variability at posttreatment,

with a slight increase in variability being noted at 6-months follow-up. All participants

had previously shown a decrease in level from baseline to posttreatment. A continual

decrease in level was seen for three out of four participants (P1, P2, and P4) from

posttreatment to 6-months follow-up, with one participant (P3) maintaining the level

previously observed at posttreatment.

Based upon information presented in Table 4, a decrease in the proportion of

noncompliance relative to the number of alpha commands given was noted in

observational sessions for all four time one prevention participants at posttreatment, with

a continued decrease in noncompliance observed at 6-months follow-up for three out of

four participants (P1, P3, and P4). One prevention participant (P2) maintained the rate of noncompliance observed at posttreatment.

Figures 5 through 8 demonstrate that a clear downward trend in HRC data for noncompliance was seen for all four Time 2 prevention participants following the implementation of treatment. A continual decrease in variability was seen for two out of four participants (P5 and P6) at posttreatment, and again at 6-months follow-up. Two prevention participants (P7 and P8) had previously demonstrated a decrease in variability at posttreatment and maintained this level of variability at 6-months follow-up. All participants had previously shown a decrease in level from baseline to posttreatment. A continual decrease in level was seen for all four participants at 6-months follow-up.

As outlined in Table 5, a decrease in the proportion of noncompliance relative to the number of alpha commands given was noted in observational sessions for three out of four Time 2 prevention participants (P5, P7, and P8), with a continued decrease in noncomplianced observed at 6-months follow-up for Prevention Participants 5 and 7. Prevention Participant 8 had originally shown a significant decrease in noncompliance at posttreatment, with a slight increase noted at 6-months follow-up but which continued to fall significantly below the level measured at baseline. A mild increase in noncompliance was observed for one participant (P6) at posttreatment and again at 6-months follow-up.

Immediate Decreases in Tantrum

To what extent will PBPT produce immediate decreases in tantrums among 1½- to 3-year-old children at-risk of developing CPs?

Figures 9 through 12 graphically display HRC data for baseline, posttreatment, and longitudinal reports of daily frequency counts, as well as weekly mean rates, of tantrums for Time 1 prevention participants (P1-P4). Formatting for the following graphs is consistent with the description previously provided.

A clear upward trend prior to treatment was seen for three out of four participants (P1, P2, and P3), with one participant (P4) demonstrating a mild downward trend. Once treatment was implemented, a clear shift to a downward trend was seen for three out of four participants (P1, P2, and P3), with one participant (P4) demonstrating a mild upward trend. A clear decrease in variability from baseline to posttreatment was seen for all four participants (P1-P4).

A clear decrease in level from baseline to posttreatment was seen for all participants. One participant (P1) showed a 3% decrease in level from baseline to posttreatment, which is considered a mild effect. A moderate effect was shown for participant (P2), with a 67% decrease in level from baseline to posttreatment. Two participants (P3 and P4) showed an 86% and 73% decrease in level from baseline to posttreatment respectively, which is a significant effect.

Table 6 describes the proportion of intervals in which a tantrum occurred relative to the total number of intervals, collected during observational sessions at baseline, posttreatment, and 6-months posttreatment for Time 1 prevention participants (P1-P4). Proportional data, rather than frequency data, is presented due to the slight variations in the length of conditions and total observation times between participants.

Figure 9. Daily frequency count of tantruming, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 1.
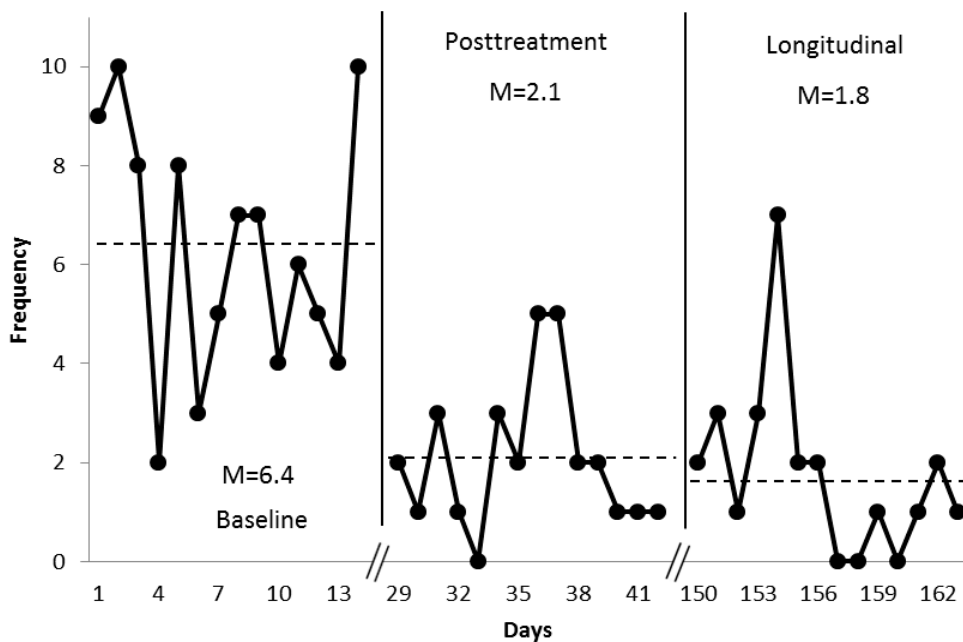
Figure 10. Daily frequency count of tantruming, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 2.
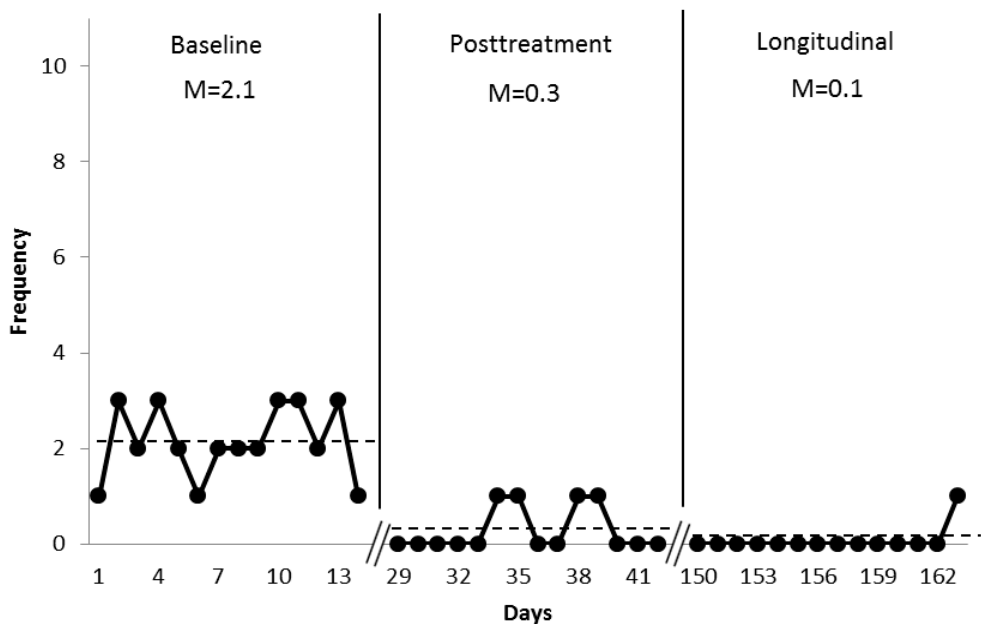
Figure 11. Daily frequency count of tantruming, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 3.
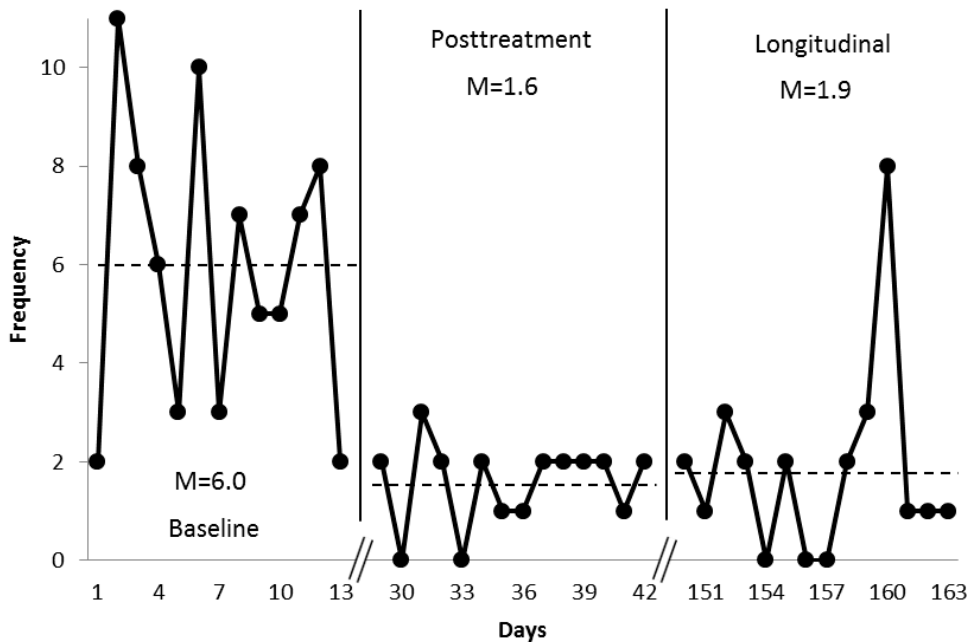
Figure 12. Daily frequency count of tantruming, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 4.

Table 6

Observed Tantruming for Prevention Participants 1-4 Across Baseline, Posttreatment, and 6-Month Follow-Up

Participant	Total proportion (%)		
	Baseline	Posttreatment	Longitudinal
P1	30	0	0
P2	30	0.7	9
P3	64	8	5
P4	33	5	2

A significant decrease in tantruming was observed for all four participants from baseline to posttreatment.

Figures 13 through 16 graphically display HRC data for baseline, posttreatment, and longitudinal reports of daily frequency counts, as well as weekly mean rates, of tantrums for Time 2 prevention participants (P5-P8). Formatting is consistent with the description previously provided.

A downward trend was observed prior to treatment for all participants, with three participants showing a mild downward trend (P6, P7, and P8) and one participant showing a moderate downward trend (P5). Once treatment was implemented, one participant (P7) showed a mild upward trend, while three participants (P5, P6 and P8) showed an accelerated continual downward trend in comparison to trends observed at baseline.

A clear decrease in variability from baseline to posttreatment was seen for all four participants (P5-P8). One participant (P8) demonstrated a mild decrease in variability,
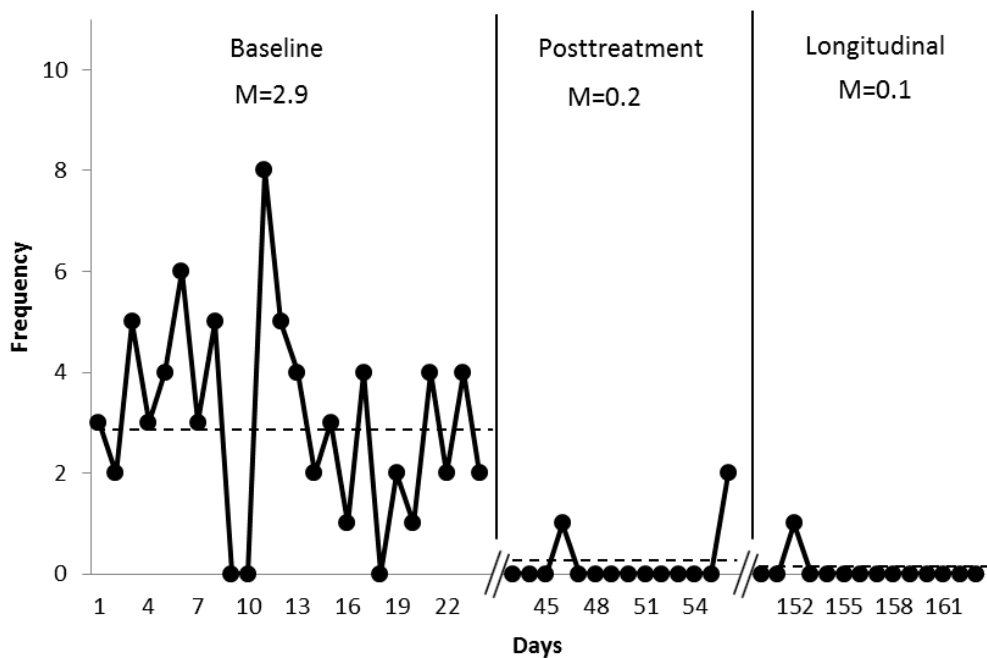
Figure 13. Daily frequency count of tantruming, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 5.
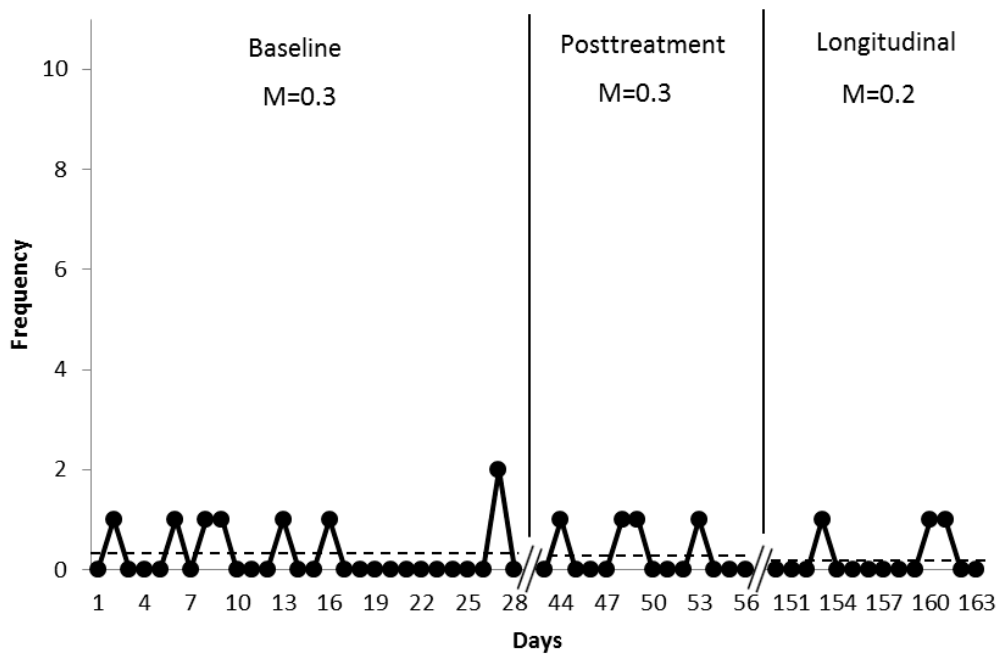
Figure 14. Daily frequency count of tantruming, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 6.
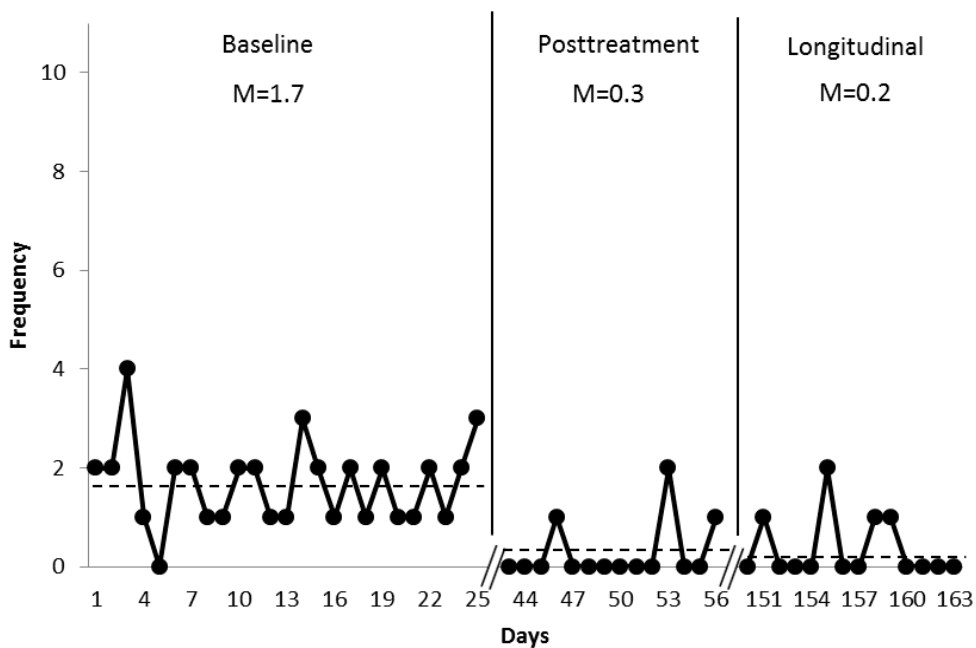
Figure 15. Daily frequency count of tantruming, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 7.
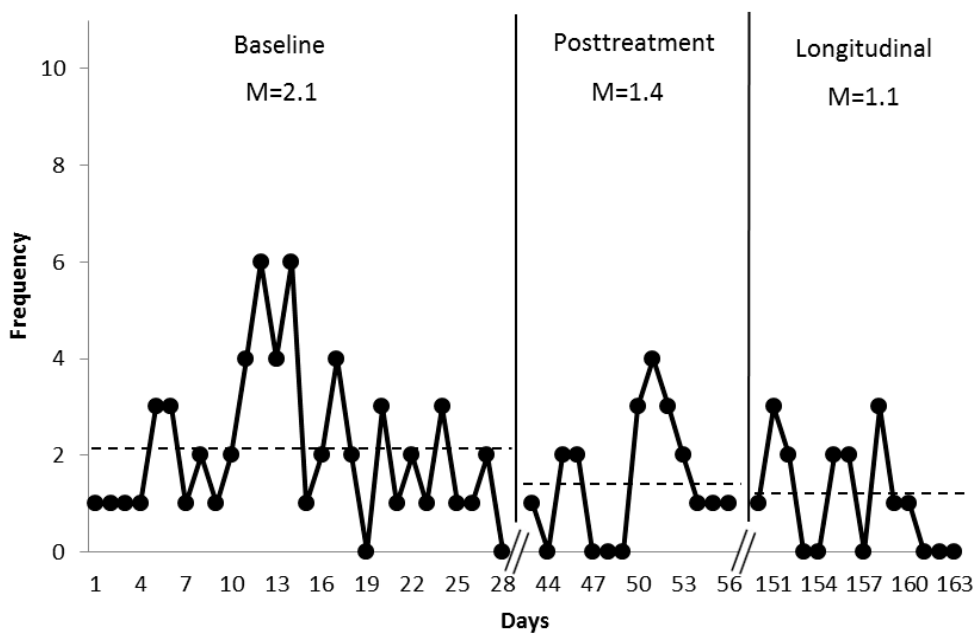
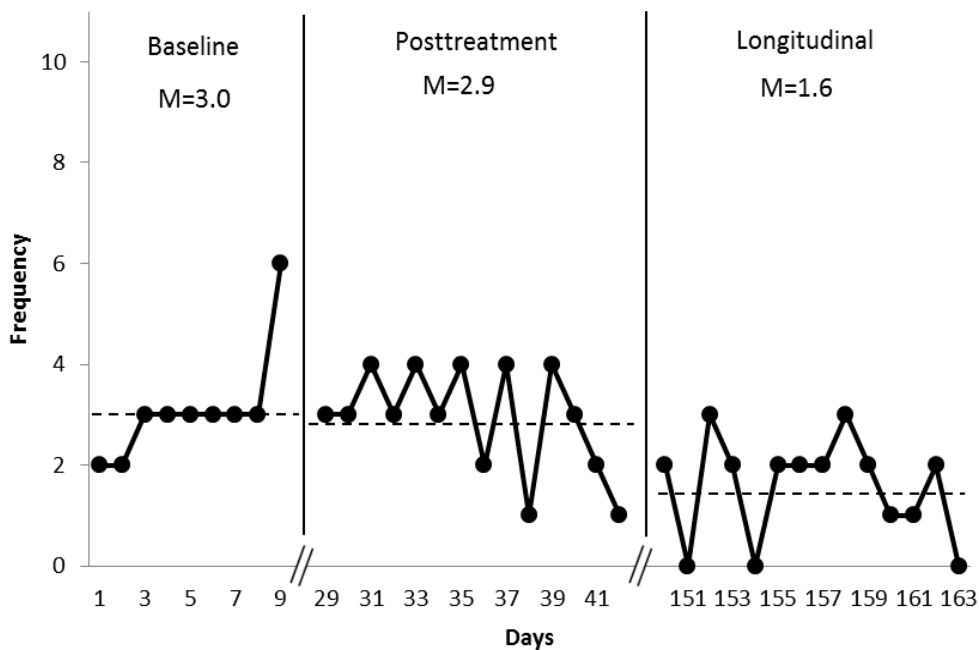*Figure 16*. Daily frequency count of tantruming, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Prevention Participant 8.

two participants (P6 and P7) demonstrated a moderate decrease in variability, and one participant (P5) demonstrated a significant decrease in variability.

A noticeable decrease in level from baseline to posttreatment was seen for three out of four participants (P5, P7, and P8). One participant (P8) showed a 33% decrease in level from baseline to posttreatment, which is considered a mild effect. A significant effect was shown for two participants (P5 and P7), with a 93% and 82% decrease in level from basleine to posttreatment, respectively. One participant (P6) showed no change in level from baseline to posttreatment.

Table 7 describes the proportion of intervals in which a tantrum occurred relative to the total number of intervals, collected during observational sessions at baseline, posttreatment, and 6-months posttreatment for Time 2 prevention participants (P5-P8). As mentioned previously, proportional data, rather than frequency data, is presented due to the slight variations in the length of conditions and total observation times between participants.

A minimal amount of tantruming was observed for three out of four participants (P5, P6, and P7) at both baseline and posttreatment observational sessions. One participant (P8) demonstrated a marked decrease in tantruming from baseline to posttreatment.

Longitudinal Maintenance of Rate of Tantrums

To what extent will PBPT effects be maintained across a 6-month period among 1½- to 3-year-old children at-risk of developing CPs in regards to tantrums?

Table 7

Observed Tantruming for Prevention Participants 5-8 Across Baseline, Posttreatment,

and 6-Month Follow-Up

Participant	Total proportion (%)		
	Baseline	Posttreatment	Longitudinal
P5	3.00	1.00	0.00
P6	1.00	0.05	1.00
P7	5.00	3.00	5.00
P8	21.00	0.05	0.06

As shown in Figures 9 through 12, a clear downward trend in HRC data for

tantrums was seen for three out of four Time 1 prevention participants (P1, P2, P3)

following the implementation of treatment, with one participant (P4) demonstrating a

mild upward trend. Two prevention participants (P1 and P3) had previously demonstrated

a decrease in variability at posttreatment and maintained this level of variability at 6-

months follow-up. Two prevention participants (P2 and P4) had previously demonstrated

a decrease in variability at posttreatment and demonstrated an increase in variability at 6-

months follow-up, but which continued to fall below the level measured at baseline. All

participants had previously shown a decrease in level from baseline to posttreatment. A

continual decrease in level was seen for three out of four participants (P1, P2, and P3) at

6-months follow-up, with one participant (P4) maintaining this level of tantruming at 6-

months follow-up.

Table 6 indicates that a significant decrease in tantruming was observed in

observational sessions for all four Time 1 participant's from baseline to posttreatment,

with a continued decrease in tantrums observed at 6-months follow-up for two prevention

participants (P3 and P4). Prevention Participant 1 engaged in zero tantrums at posttreatment and this level was maintained at 6-months follow-up. Prevention Participant 2 had originally shown a significant decrease in tantrums at posttreatment, with a slight increase noted at 6-months follow-up, but which continued to fall significantly below the level measured at baseline.

As outlined in Figures 13 through 16, a clear downward trend in HRC data for tantrums was seen for three out of four Time 2 prevention participants (P6, P7, and P8) following the implementation of treatment, with one participant (P5) demonstrating a mild upward trend. All prevention participants (P5-P8) had previously demonstrated a decrease in variability at posttreatment, with two participants (P5 and P8) showing a continual decrease in variability at 6-months follow-up and two participants (P6 and P7) maintaining this level of variability at 6-months follow-up. A decrease in level from baseline to posttreatment was seen for three out of four participants (P5, P7, and P8), while one participant (P6) showed no change in level. A continual decrease in level was seen for two out of four participants (P5 and P8) at 6-months follow-up, while two participants (P6 and P7) maintained their posttreatment level of tantruming at 6-months follow-up.

Table 7 shows that a minimal amount of tantruming was observed for three out of four Time 2 prevention participants at both baseline and posttreatment observational sessions, while one participant (P8) had demonstrated a significant decrease in tantruming from baseline to posttreatment. A minimal amount of tantruming was observed for all four participants at 6-months follow-up.

Developmental Trajectory of Comparison Children

To what extent do children exposed to PBPT differ regarding their disruptive

behaviors developmental trajectory relative to comparison children?

Figures 17 through 20 graphically display HRC data for baseline, posttreatment,

and longitudinal reports of daily frequency counts, as well as weekly mean rates, of

noncompliance for comparison participants (C1-C4). Formatting for the following graphs

is consistent with the description previously provided for prevention participant HRC

data.

An upward trend was seen for three out of four comparison participants (C1, C2,

and C3) across the course of the study from baseline to 6-months follow-up. One

comparison participant (C4) demonstrated a slight decrease in trend across the course of

the study. A small increase in level was seen for two comparison participants (C1 and

C3), one comparison participant (C2) demonstrated a stable level across time, and one

comparison participant (C4) showed a mild decrease in level from baseline to 6-months

follow-up. A clear increase in variability from baseline to 6-months follow-up was seen

for two comparison participants (C2 and C3), while variability remained constant across

time for two comparison participants (C1 and C4). All comparison participants exhibited

substantial variability in the frequency of noncompliance at 6-months follow-up. All four

comparison participants were reported to be engaging in high levels of noncompliance at

6-months follow-up.

Table 8 describes the proportion of noncompliance relative to the number of alpha

commands given, collected during observational sessions conducted at Time 1, Time 2,

Figure 17. Daily frequency count of noncompliance, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Comparison Participant 1.
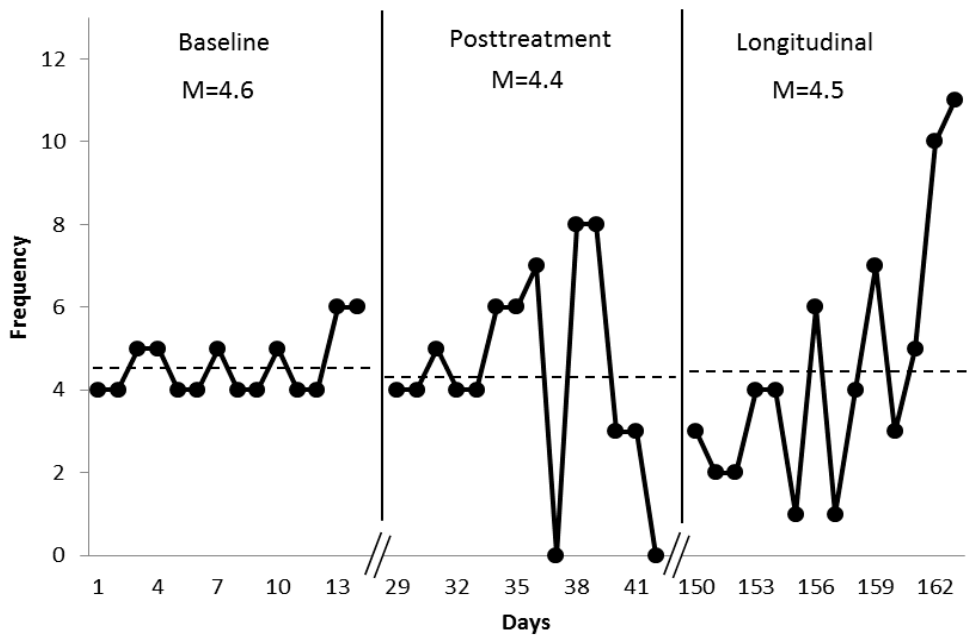
Figure 18. Daily frequency count of noncompliance, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Comparison Participant 2.
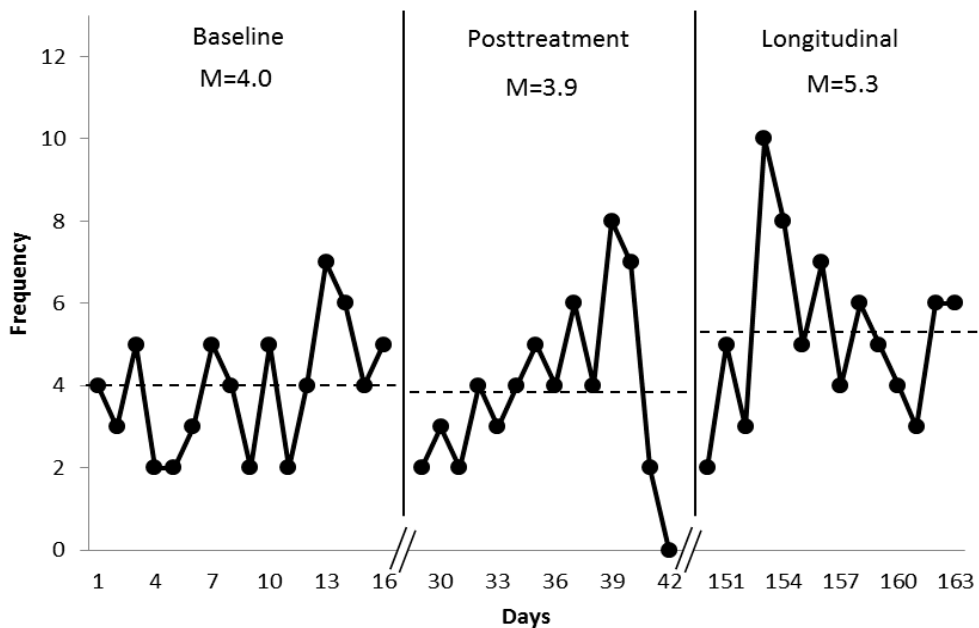
Figure 19. Daily frequency count of noncompliance, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Comparison Participant 3.
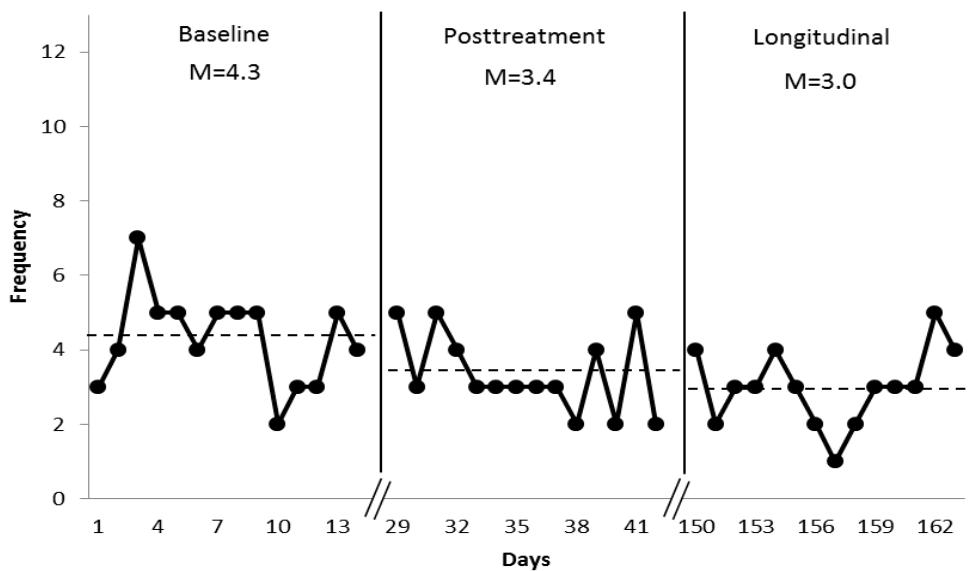
Figure 20. Daily frequency count of noncompliance, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Comparison Participant 4.

Table 8

Observed Noncompliance for Comparison Participants 1-4 Across Baseline,

Posttreatment, and 6-Month Follow-Up

Participant	Total proportion (%)		
	Baseline	Posttreatment	Longitudinal
C1	43	33	21
C2	47	53	78
C3	71	76	68
C4	58	31	46

and Time 3 for all comparison participants (C1-C4). Description of the following table is

consistent with the description previously provided for noncompliance observational

data.

A large increase in the proportion of noncompliance relative to the number of

alpha commands given was observed for one comparison participant (C2) from baseline

to 6-months follow-up. One participant (C1) demonstrated a moderate decrease, while

one participant (C4) exhibited a mild decrease. One participant (C3) demonstrated a

relatively consistent proportion of noncompliance across the course of the study. Three

out of four comparison participants (C2, C3, and C4) exhibited elevated levels of

observed noncompliance at 6-months follow-up.

Figures 21 through 24 graphically display HRC data for baseline, posttreatment,

and longitudinal reports of daily frequency counts, as well as weekly mean rates, of

tantrums for comparison participants (C1-C4). Formatting for the following graphs is

consistent with the description previously provided for prevention participant HRC data.

A clear upward trend was seen for two out of four comparison participants (C2
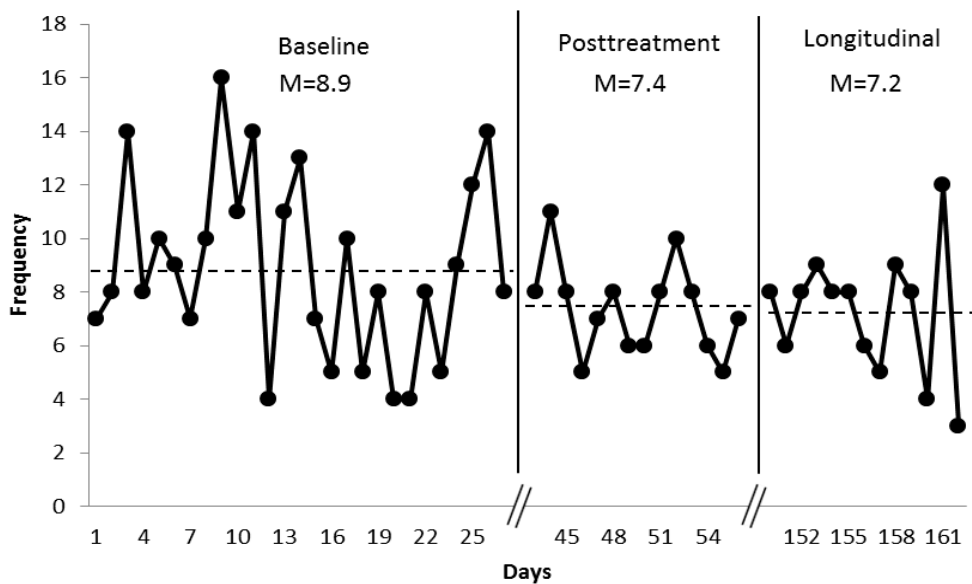
Figure 21. Daily frequency count of tantruming, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Comparison Participant 1.
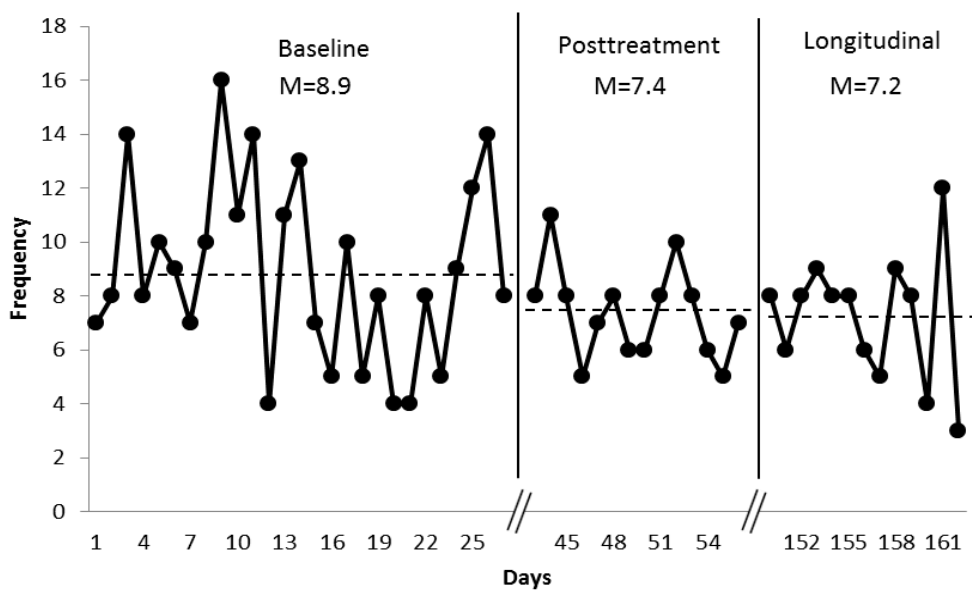
Figure 22. Daily frequency count of tantruming, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Comparison Participant 2.
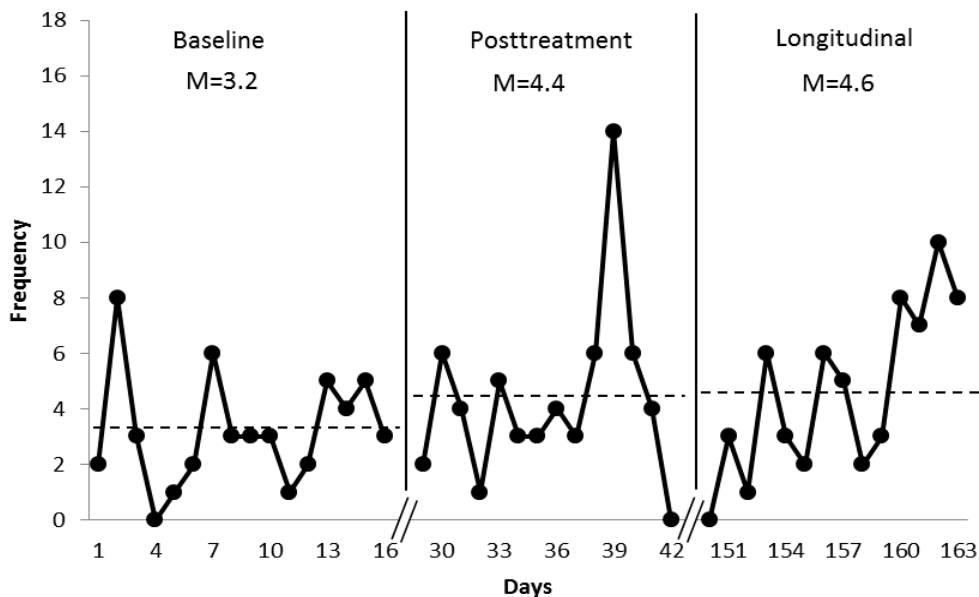
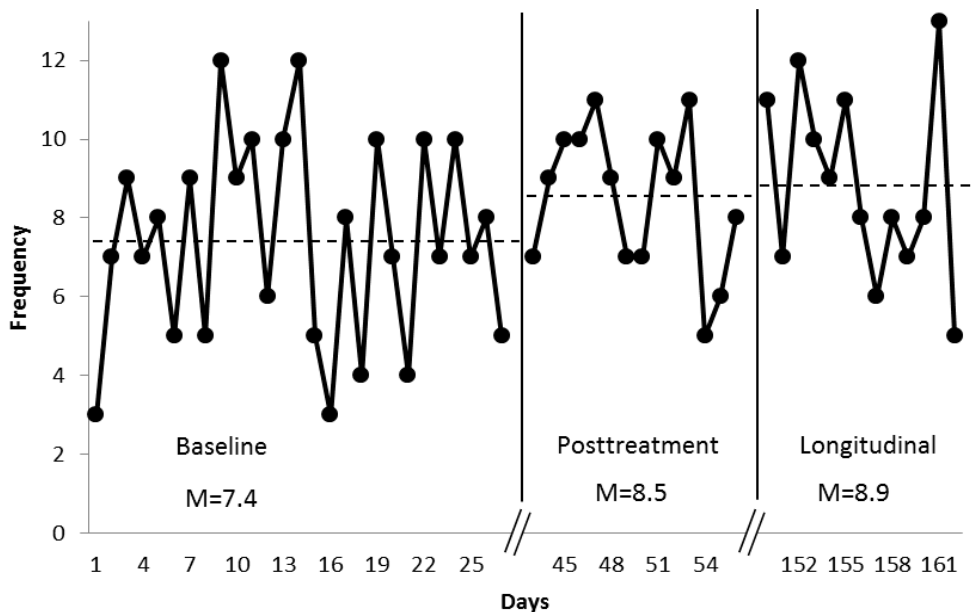*Figure 23*. Daily frequency count of tantruming, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Comparison Participant 3.
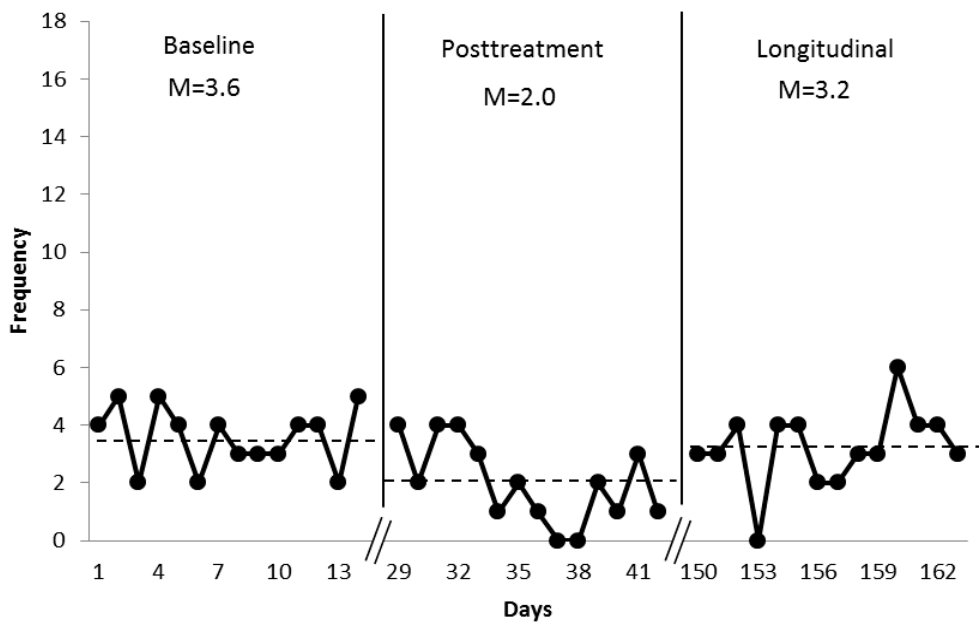
Figure 24. Daily frequency count of tantruming, as well as condition mean rates, across baseline, posttreatment, and 6-month follow-up for Comparison Participant 4.

and C3) across the course of the study from baseline to 6-months follow-up. A slight

decrease in trend was seen for two out of four comparison participants (C1 and C4). An

increase in level was seen for two comparison participants (C2 and C3), while two

comparison participants (C1 and C4) demonstrated a slight decrease in level from

baseline to 6-months follow-up. An increase in variability from baseline to 6-months

follow-up was seen for two comparison participants (C2 and C3), while variability

remained relatively constant across time for two comparison participants (C1 and C4).

Three out of four comparison participants (C1, C2, and C3) exhibited significant

variability at 6-months follow-up. All four comparison participants exhibited elevated

levels of tantruming at 6-months follow-up.

Table 9 describes the proportion of intervals in which a tantrum occurred relative

to the total number of intervals, collected during observational sessions at baseline,

posttreatment, and 6-months posttreatment for comparison participants (C1-C4).

Description of Table 9 is consistent with the description previously provided for

prevention participant's noncompliance observational data.

Table 9

Observed Tantruming for Comparison Participants 1-4 Across Baseline, Posttreatment,

and 6-Month Follow-Up

Participant	Total proportion (%)		
	Baseline	Posttreatment	Longitudinal
C1	1	3	.05
C2	5	2	34
C3	30	9	0
C4	0	0	.06

A minimal amount of tantruming was observed for two out of four (C1 and C4) participants during all observation sessions. Comparison Participant 2 demonstrated a significant increase in tantruming frequency from baseline to 6-months follow-up. Comparison Participant 3 demonstrated a marked decrease in tantruming frequency from baseline to 6-months follow-up.

CHAPTER VI

DISCUSSION

BPT has a longstanding history of being the most efficacious intervention available for treating children and adolescents with CPs. Unfortunately, a consistent finding regarding treatment outcomes for BPT is that only approximately one third of children exhibit clinically significant improvements in their disruptive behaviors following treatment, whereas one third of children continue to exhibit clinically significant CPs, and the remaining one third of families fail to complete treatment. Recent research has focused on establishing developmental pathways that are reliably linked with chronic display of CPs. Through this work, behavioral precursors of clinical conduct concerns have been identified and strong temporal contiguity in the progression of CPs has been established. In addition, recent research has been conducted delineating specific risk factors that increase the likelihood of chronic CPs display. This emergent information facilitates the implementation of primary prevention programs with young children who may be displaying high risk behaviors or that have been exposed to known risk factors. While initial evaluation of prevention programs has been promising, most are classified as secondary or tertiary prevention and are overly cumbersome for dissemination at a population level. Primary 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. The current study was designed to address these gaps by effectively identifying young children at-risk for developing CPs and targeting critical behavioral

precursors (e.g., noncompliance and tantrums) during an early developmental period via a brief BPT primary prevention program.

Empirical Questions

Immediate Decreases in Noncompliance

To what extent will PBPT produce immediate decreases in noncompliance among 1½- to 3-year-old children at-risk of developing CPs?

The data collected showed that PBPT produced immediate decreases in noncompliance among 1½- to 3-year-old children who were at-risk for developing CPs. A review of HRC data showed that all prevention participants exhibited a decrease in their daily rate of noncompliance. Average rates of daily acts of noncompliance decreased from 4.2 to 1.9 within two weeks of being trained in primary prevention parenting skills. This reflects an average 57% decrease in daily noncompliance from baseline to posttreatment, with a range of 30-76%.

Treatment effects can be attributed to involvement in PBPT as a similar pattern of behavior was observed across both treatment groups, despite receiving the intervention at two different points in time, in order to control for the effects of potential confounding variables. However, the greatest support for the utility of this primary prevention program is derived from comparison with participants that were not exposed to PBPT. Among these, three out of four comparison participants showed upward trends of noncompliance across the course of the study. Further, comparison participants exhibited an average of 5.1 daily acts of noncompliance at baseline and an average of 5.1 daily acts of noncompliance approximately two weeks later. Taken together, HRC data indicated that

PBPT had a substantial effect on decreases in noncompliance among at-risk children based upon parent report.

Standardized observation sessions within a controlled research environment provided further support as to the efficacy of PBPT as a primary prevention program. Observational data showed that seven out of eight prevention participants showed a decrease in noncompliance from baseline to posttreatment, with one participant showing a mild increase in noncompliance. The average decrease in noncompliance from baseline to posttreatment for prevention participants was 19%, ranging from 4-46%. In contrast, observational data indicated that two out of four comparison participants showed a slight increase in noncompliance, while the remaining two participants showed a minor decrease in noncompliance. Overall, the reduction in observed noncompliance indicates that PBPT had a mild effect on decreases in noncompliance among at-risk children based upon objective observational data.

Longitudinal Maintenance of Rate of Noncompliance

To what extent will PBPT effects be maintained across a 6-month period among 1½- to 3-year-old children at-risk of developing CPs in regards to noncompliance?

Given that PBPT has been designed as a primary prevention program for childhood CPs, it is important to determine if immediate intervention effects are maintained across time, as this would support temporal stability of modified parent and child behaviors. Results of the current study demonstrated that all participants who participated in PBPT showed treatment gains immediately following treatment and that these improvements were maintained across a 6-month period. HRC data indicated that

seven out of eight participants continued to show decreases in their average daily rate of noncompliance at 6-month follow-up, with the remaining participant maintaining the rate of noncompliance seen immediately following posttreatment. Average rates of daily acts of noncompliance decreased from 4.2 at baseline to 0.3 at 6-month posttreatment. This reflects an average 78% decrease in daily noncompliance from baseline to 6-month posttreatment, with a range of 50-100%.

Overall, decreases in noncompliance for prevention participants across the course of a 6-month period can be attributed to involvement in PBPT. Similar patterns of behavior were observed across both Time 1 and Time 2 prevention participants, despite receiving the intervention at two different points in time. Again, the most noteworthy evidence of the utility of PBPT as a primary prevention program is found in examining developmental trends of comparison participants not exposed to PBPT across the course of the study. Results demonstrated that three out of four comparison participants showed an upward trend across the course of the study, with one participant showing a minor downward trend. Additionally, comparison participants exhibited an average of 5.1 daily acts of noncompliance at baseline and an average of 5.0 daily acts of noncompliance at 6-month follow-up. This reflects no change in the average rage of daily noncompliance across the course of treatment. In sum, this indicates that PBPT had a substantial effect on decreases in noncompliance among at-risk children across the course of a 6-month period based upon parent report.

Standardized observations sessions with a controlled research environment provided further support as to the efficacy of PBPT as a primary prevention program. As

mentioned previously, standardized observational data demonstrated that seven out of

eight prevention participants showed immediate decrease in noncompliance following

treatment. At 6-month posttreatment, observational data showed that five out of eight

prevention participants showed continual decreases in noncompliance, while three

participants showed a minor increase in level relative to that observed at posttreatment.

Overall, seven out of eight prevention participants showed an average 31% decrease in

noncompliance from baseline to 6-month posttreatment, with one participant showing a

mild increase in noncompliance. In contrast, observational data indicated that one

comparison participant showed a marked increase in noncompliance, while three

participants showed a minor decrease in noncompliance across the course of the study. At

the conclusion of this study, prevention participants were observed engaging in an

average of 28% noncompliance, while comparison participants were observed engaging

in an average of 53% noncompliance. Overall, the consistent decrease in noncompliance

among at-risk children observed across two sources of data is suggestive of the efficacy

of PBPT as a primary prevention program.

Immediate Decreases in Tantrum

To what extent will PBPT produce immediate decreases in tantrums among 1½-to 3-year-old children at-risk of developing CPs?

According to data collected throughout the course of the study, PBPT appears to

be an effective primary prevention program in producing decreases in tantruming among

at-risk children. HRC data indicated seven out of eight prevention participants exhibited a

decrease in their tantruming rates from baseline to posttreatment. The prevention

participant that showed no drop in tantruming rates from baseline to posttreatment was shown to be engaging in near zero levels of tantruming at baseline. Average daily tantrums decreased from 3.1 at baseline to 1.1 two weeks following treatment. This reflects an average 62% decrease in daily tantruming from baseline to posttreatment, with a range of 33-93%.

Decreases in tantruming are suggestive of the efficacy of PBPT as a primary prevention program as a similar pattern of behavior was observed across both treatment groups, despite receiving the intervention at two different points in time. However, greatest support for the utility of PBPT is found when examining the differential trajectories of comparison children not exposed to PBPT. Comparison participants exhibited an average of 4.8 daily tantrums at baseline and an average of 4.2 daily tantrums approximately two weeks later. This reflects little change in the average rate of daily tantrums across a time period similar to that of prevention participants. Taken together, this suggests that PBPT had a noteworthy immediate effect on decreases in tantruming among at-risk children based upon parent report.

Standardized observation sessions within a controlled research environment provided additional support regarding the efficacy of PBPT in producing decreases in tantruming. Observational data concluded that all prevention participants showed an immediate decrease in tantruming behaviors following treatment, although three participants engaged in minimal amounts of tantruming at baseline. The five prevention participants that were engaging in elevated rates of tantruming at baseline showed an average 33% decrease in tantruming from baseline to posttreatment, with a range of 20-

56%. Overall, prevention participants were observed engaging in tantruming for 23% of the total proportion of observation sessions at baseline, on average. At posttreatment, these participants were observed engaging in tantruming for 2% of the total proportion of observation sessions. Three comparison children were observed engaging in relatively low levels of tantruming behaviors at baseline, while one comparison child engaged in tantruming for 30% of the total proportion of the observation session. At posttreatment, all comparison children were observed engaging in low levels of tantruming throughout the session. Given the low levels of tantruming behaviors observed in comparison children, further support as to the utility of PBPT could not be obtained by comparing prevention participants to children not exposed to PBPT; however, the reduction in observed tantruming for treatment children indicates that PBPT has a mild effect on decreases in tantruming among at-risk children based upon objective observational data.

Longitudinal Maintenance of Rate of Tantrums

To what extent will PBPT effects be maintained across a 6-month period among 1½- to 3-year-old children at-risk of developing CPs in regards to tantrums?

As mentioned previously, crucial to the support of PBPT as a primary prevention program is the ability to demonstrate that immediate intervention effects are maintained across time, as this would support the contention that treatment changed the developmental trajectory of these at-risk children. According to results collected throughout the course of the study, all prevention participants demonstrated substantial decreases in rates of tantruming immediately following treatment, or maintained near zero levels of tantruming observed at baseline, and that these gains were maintained

across a 6-month period. HRC data showed that seven out of eight prevention participants exhibited marked decreases in tantruming rates, with one prevention participant maintaining low levels of tantruming observed at baseline. Average daily tantrums decreased from 3.1 at baseline to 0.9 at 6-month posttreatment. This reflects an average 67% decrease in daily tantrums from baseline to 6-month posttreatment, with a range of 33-97%.

Given the consistent pattern of behaviors observed in both Time 1 and Time 2 prevention participants, decreases in tantruming across the course of the study can be attributed to exposure to PBPT. Examining the developmental trends of comparison children to those of prevention participants provides key evidence in demonstrating the utility of PBPT as a primary prevention program. Results demonstrated that two out of four comparison participants showed an upward trend across the course of the study, while two participants maintained stable trends. Further, comparison participants engaged in an average of 4.8 daily tantrums at baseline and an average of 4.8 daily tantrums at 6-month posttreatment. Overall, this data indicates that PBPT had a noteworthy effect on decreases in tantruming among at-risk children across the course of a 6-month period based upon parent report.

Standardized observation sessions within a controlled research environment provided further evidence as to the positive impact of PBPT on child CPs. As mentioned previously, all prevention participants showed an immediate decrease in tantruming behaviors following treatment, although three participants engaged in minimal amounts of tantruming at baseline. At 6-month posttreatment, observational data showed that three

prevention participants showed continual decreases in their tantruming rates, four

participants maintained low levels of tantruming, and one participant exhibited a slight

increase which was not remarkable. Overall, five out of eight prevention participants

showed a 33% decrease in tantruming from baseline to 6-month posttreatment, with three

participants showing very low levels of tantruming throughout the course of the study. In

contrast, observational data indicated that two comparison participants showed very low

levels of tantruming across the course of the study, one participant showed a marked

decrease in tantruming over time, and one participant demonstrated a substantial increase

in tantruming over time. Given this data, further support as to the efficacy of PBPT

cannot be obtained through comparison to children who did not receive PBPT; however,

as mentioned previously, the reduction in observed tantruming for prevention participants

indicates that PBPT has a mild effect on decreases in tantruming among at-risk children

based upon objective observational data. Overall, the consistent decrease in tantruming

among at-risk children observed across two sources of data is suggestive of the utility of

PBPT as a primary prevention program.

Developmental Trajectory of Comparison Children

To what extent do children exposed to PBPT differ regarding their disruptive

behaviors developmental trajectory relative to comparison children?

The developmental trajectory observed for comparison children in relation to that

seen for PBPT participants is noteworthy. Based upon parent report, all eight prevention

participants showed a decrease in their rate of noncompliance immediately following

exposure to PBPT and again at 6-month follow-up, with seven out of eight participants

exhibiting a change of significant magnitude. In contrast, three out of four comparison children showed steady increases in noncompliance throughout the course of the study, while one comparison child showed a very mild decrease in noncompliance. Standardized observational data demonstrated that children who participated in PBPT engaged in reduced rates of noncompliance across the course of the study, with seven out of eight prevention participants showing a marked decrease. Conversely, standardized observational data for comparison children demonstrated a worsening in rates of noncompliance across time, with three comparison children engaging in clinically significant levels of noncompliance and one comparison child engaging in a developmentally appropriate rate of noncompliance at the conclusion of the study.

Standardized observation data collected provides inconclusive data regarding the differential developmental trajectories of children exposed to PBPT relative to those who do not receive treatment due to the relatively low levels of tantruming behaviors observed in comparison children throughout the course of the study. Observational data indicated that five out of eight prevention participants showed a marked decrease in tantruming across time and three prevention participants showed very low levels of tantruming throughout the course of the study. In contrast, two comparison children engaged in tantruming during less than 3% of all observation sessions. One comparison child showed a mild decrease in tantruming behaviors across the course of the study, while one comparison participant showed a mild increase in tantruming behaviors. While this data does not support the likelihood that comparison children will show escalations in disruptive behaviors over time, data obtained by parent report regarding their child's

behavior outside of the clinic indicated a general worsening or maintaining in tantruming behaviors over time. In comparison, seven out of eight prevention participants exhibited marked decreases in tantruming behaviors following their involvement in PBPT.

The rates of noncompliance and tantruming observed across the course of this study for comparison children in relation to prevention participants depicts a stark contrast in the developmental trajectory of those involved in a primary prevention program relative to those who receive no treatment. This provides preliminary evidence of the utility of a primary prevention program targeting very young at-risk children. Overall, prevention participanats were engaging in normative rates of noncompliance and tantruming at 6-month follow-up, whereas comparison children showed a general worsening in their disruptive behaviors over time.

Additional Findings

As important as changes in the frequency of target behaviors under standardized conditions (e.g., lab setting) and unstandardized conditions (e.g., HRC), are the observed changes in maternal perception of frequency of problem behaviors as measured by the CBCL. At baseline, five treatment condition mothers indicated that their child was engaging in borderline clinically significant oppositional defiant behaviors, while three treatment condition mothers indicate that their child fell within the normal range. Following exposure to PBPT, treatment condition mothers consistently rated their children as becoming increasingly "nonclinical," with all but one prevention participant falling into the normal range at posttreatment and all prevention participants falling into the normal range at 6-months follow-up. In contrast, perceptions of their comparison

group counterparts worsened over time. Namely, all four comparison participants fell within the borderline clinically significant range at baseline. These children were reported as engaging in clinically significant oppositional defiant behaviors at posttreatment, with three out of four comparison participants remaining in the clinical range at 6-month follow-up, with the remaining comparison participant falling within the normal range.

One of the most salient findings in the literature regarding factors that contributes to treatment failure when working with children with CPs is the significant dropout rate. Namely, one third of all families that present to treatment drop out prematurely. As a result, these children likely fail to improve due to the inadequate treatment provided. One of the primary reasons for the high rate of attrition is the extensive length of treatment, ranging as high as 13 to 27 sessions. Given this fact, action must be taken to reduce the length of therapy in order to facilitate the continuing treatment of these children. One of the most significant advantages cited for use of a primary 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 specific BPT treatment components are consistently associated with greater improvements in disruptive behaviors, these program characteristics ought to be emphasized in primary 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). In the current study, all prevention participants attended all PBPT

sessions, demonstrating a 0% attrition rate. This is a promising finding as it suggests that

parents were able to devote the time needed to complete a primary prevention program

that is short in duration (e.g., two sessions) and still experience the positive benefits

associated with BPT.

Limitations

One clear limitation to the current research is the limited generalizability of the

results. While participants were randomly assigned to the treatment or comparison

conditions, a random sampling of the community was not utilized. As a result, this

sample likely has an overrepresentation of certain individuals (e.g., Caucasian, higher

income). It is appropriate to generalize the conclusions of the current research to children

ages 18 to 36 months, with similar demographic information (e.g., gender, income,

ethnicity) and reported risk factors. In retrospect, utilizing random sampling from the

community would have allowed for better generalizability of the results. It is not assumed

that all at-risk children would respond to PBPT in the same manner (e.g., single parent

father led households, severe parent pathology). Thus, the conclusions of the current

research must be generalized appropriately, and with caution.

Another limitation to the current research pertains to the assessment measures

used to evaluate current levels of disruptive behaviors. The ability to accurately capture

levels of tantruming behavior in a standardized observation setting was limited due to the

apparent decrease in the degree of reactivity to a community setting over time. Also, the

current research project failed to incorporate a larger battery of rating scale assessments.

Additionally, due to the very young age of the children in this study, the researcher was

unable to utilize a variety of behavior rating scales due to the absence of normative data for very young children (e.g., Eyberg Child Behavior Inventory). The inclusion of additional behavior rating scales appropriate for this age group would provide further support as to the efficacy of PBPT as a primary prevention program.

A final limitation to the current research is the methodologically imposed condition shifts seen from baseline to Phase I of treatment. Following each participant's initial visit to the clinic, they were given HRCs and asked to complete them for a predetermined set amount of time (e.g., 14 or 28 days) in order to obtain baseline data. While most participants did demonstrate an upward or stable trend prior to the implementation of treatment, some participants showed a downward trend, making interpretation of treatment effects more difficult. Although the inclusion of a comparison group provides support as to the continuing developmental trajectory of children not exposed to PBPT, a more rigorous methodology would track HRC data daily until an upward or stable trend was established prior to imposing a condition shift.

Implications and Future Research

Given that this was a pilot study, a small sample size was appropriate; however, additional research will be necessary to replicate this study and determine the efficacy of PBPT using a variety of other methodologies, including traditional multiple baseline design, within subject analysis, and large N group design. This will provide a more in-depth look at potential moderating variables, determine the relative efficacy of PBPT with a diverse range of individuals, and lend support to the generalizability of PBPT with a broader population.

If PBPT is demonstrated to be efficacious with a broad range of children, research should be conducted regarding the possible utility of disseminating PBPT in a primary care setting. Research has demonstrated that parents of a child with disruptive behavior problems typically consult their primary care provider first, who then refer them to a child psychologist for treatment. Unfortunately, significant treatment barriers to these referrals exist, including access to services and treatment acceptability (Axelrad, Pendley, Miller, & Tynan, 2008). Access to services is limited due to lack of treatment specialists with appropriate training, insurance restrictions, and subsequent appointment delays. Providing parents with the opportunity to engage in a brief primary prevention program in a primary care setting may address accessibility difficulties and increase treatment acceptability.

Future research should also seek to determine if supplementary sessions would prove to be worthwhile for a subset of participants who suffer from severe psychological distress and significant hardship. Factors such as these may hinder treatment effects, given that parents' willingness and ability to learn and apply management strategies is crucial to success. Although identifying younger children with less severe CPs may offset the lack of resources necessary for success in treatment, there is a possibility that treatment packages should be tailored to the individual needs of the family, with families who have a higher number of risk-factors and hardships needing additional sessions and support. In order to determine the individual needs of the family, research should also seek to determine what screening measures will most efficiently and accurately identify children in need of these primary prevention services.

Conclusions

In conclusion, at-risk children exposed to PBPT demonstrated consistent positive effects, while comparison participants' disruptive behaviors generally were maintained or worsened over time. These findings are especially notable given that the nature of the change strategy was only two sessions in duration. Additional unique aspects of this study include (a) the application of a modified and very brief version of BPT as a primary prevention strategy, (b) the strategic targeting of very young children who are at risk for developing CPs, and (c) assessment of shifts in maternal perception as a result of exposure to PBPT. Data yielded through this study suggests that PBPT has promise as a brief, primary prevention and population friendly approach in preventing the development of clinical levels of CPs among at-risk children. Further study of PBPT is warranted given these initial promising findings.

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APPENDICES

Appendix A. Flyer

Do you have a hard to manage 1½ - 3 year old child?

We are interested in studying strategies that parents can use to keep behaviors such as tantrums and defiance from getting worse as your child grows. Participants will receive FREE study-related materials and services.
Call for more details!

For more information call Jessica Malmberg at (435) 512-1114 or email her at j.malmberg@aggiemail.usu.edu.
Psychology Department • Utah State University

Appendix B. Phone Script

<u>Instructions</u>: Script to be read over phone to all potential participants responding to recruitment efforts.

Ask to speak to the individual who has indicated an interest and say:

"Hi, (their name)   , my name is (your name)   and I am a psychology graduate student at Utah State University. I received the message that you are interested in learning more about a research project we are currently conducting?"

If interest is indicated, proceed with the script below. If disinterest is indicated, thank them for their time and terminate the call.

"Great, what I would like to do is tell you just a bit more about the project, ask you a few questions, and then schedule a time that we can meet with you."

"Let me tell you a bit more about the project, first. We are looking for parents that have a child between 1.5 and 2.5 years of age. Do you have a child in that age range? (If the answer is no, politely terminate the call) *Great, the purpose of this project is to help us develop a broader understanding of what parents can do to effectively curb their child's tendency to engage in misbehaviors such as not following your instructions and having tantrums when things don't go their way. It is our hope to identify ways that parents can prevent problems like these from worsening as their children get older. There are a couple of critical requirements for participation.*

1. What is your child's name? Has your child ever received psychological services?

2. Do you feel that you could benefit from additional parenting strategies aimed to help you manage your child's misbehavior?

If a "no" answer is indicated for question one and a "yes" answer is indicated for question two, proceed with the script below. Otherwise, politely explain the requirements of the current study, thank them for their time, and terminate the call.

"It sounds as if you are likely to qualify for our study. As a result of your participation, you will receive study related parenting and conduct problem prevention services at no charge. In addition, we will complete a developmental screening test and a behavioral assessment for your child and provide you with the results at no charge. Finally, you may be able to receive research credit for your participation if you are a student in a class at USU that requires participation in a research project. The next step is to schedule an initial visit to our research lab where we will complete (child's name) developmental screen, his/her behavioral assessment and, review the project consent forms with you. Can we schedule a time for you to attend an initial research session at the Psychology Department on (day)? Which of the following times will be best for you?

Provide open time slots and schedule participants as best fits their schedule.

Appendix C. Demographics Questionnaire

Subject #_____

Parents Name:_____

       Phone Number: (_____) _____ (home)
                     (_____) _____ (cell)

       Address:_____
_____

Child's Name:_____

       Childs Age:_____

       Child's Sex:_____

       Child's Ethnicity:_____

# of Parents in Household:_____

Family Income:_____

Approved for Initial Screening?   Yes_____ No_____

Next Appointment:_____

Notes:

Appendix D. Standardized Observation Script

Initial Instruction with Parent(s):

Nice to meet you (parents name). Let me show you around the playroom. Here is a desk where we will be asking you to fill out paper work. Here are the toys your child is allowed to play with at any time. Here are the forbidden toys that your child will not be allowed to play with. As you can see, we have cameras mounted on the wall. The cameras feed into a television in the next room, which allow us to watch you as you interact with your child. This window here is a two-way window that allows us to see you interact as well.

We will be asking you to do a number of things today, like playing with your child, asking your child to play alone, asking your child to clean up toys, and asking your child not to play with certain toys. To do this naturally, we will have you wear this earpiece; we call it "a bug in the ear." We will be giving you multiple instructions through the earpiece, please follow the instructions to the best of your abilities. If you have questions about any of the instructions or need clarification at any time, please feel free to ask. Being that you will be recorded for the duration of the session, the therapists will be able to hear you at anytime so you need simply to ask your questions out loud.

Your child isn't supposed to act perfectly during the session. We want you both to feel comfortable and act as naturally as possible. This will help us to help you with your child's behavior later on. If your child tantrums, please react to the tantrum as you would at home, using procedures that you might use at home (e.g., timeout, scolding, etc.). We aren't here to critique your parenting, we are here to build upon your parenting knowledge and help you modify your child's behavior.

First, we will have you and your child enter the room together. You will proceed to the desk where we have some paperwork for you to fill out. You are to instruct your child that he or she is to play with any of the toys, except for the forbidden toys. If your child complains or demands an explanation, you may give he or she an explanation but do not use us as explanations. For example, don't tell your child that, "the teacher said you couldn't play with the toys." You may say that, "the toys don't belong to you," or any other explanations that DON'T use us as the authority figures.

Now, go ahead and enter the room with your child, and begin filling out the paperwork. Do your best to ignore your child completely while you are filling out the paperwork. If you need to respond to your child, please keep your response at a minimum. If your child is in danger, please immediately attend to the dangerous behavior by redirecting your child to another activity. If this should happen, the therapist will help you do this by giving you instructions through the earpiece.

Any questions?

Good.

The Session

<u>Minutes 1-7</u>:

<Mom enters the room>

Okay, <u>mom</u> can you hear me?

<Wait for an affirmative response, and proceed with instruction.>

Please tell your child that he or she is allowed to play with any of the toys, except the forbidden toys. Then, proceed to the desk and begin to fill out paperwork, remember to ignore your child as much as possible. We will give you further instruction in approximately 5 minutes. Does that sound okay?

<u>Minutes 8-15</u>:

>   Now, go ahead and play with your child<u>.</u> Act naturally; play with your
>   child as you normally would at home. You may let him or her play with
>   any of the toys, except the forbidden toys.

<u>Minutes 16-23</u>:

>   Now, go back to the table and pretend that you have a cell phone call, tell
>   your child that he or she is allowed to continue playing with any of the
>   toys, except the forbidden toys.

<u>Minutes 24-30</u>:

>   Now, you may help and encourage your child to clean up the toys.

Appendix E. Intervention Handout

UtahState
UNIVERSITY

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 3 minutes.
    * Don't allow your child to get out of timeout until they have been quiet for 45 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. Standardized Observation Code

INSTRUCTIONS

- On the coding sheet, a "P" next to the name of the code indicates *partial interval recording*: a single mark is made if the behavior occurs at any time during the interval, even if it occurs repeatedly. An "E" next to the code indicates *event recording*: each occurrence of the behavior during the interval receives a tally. If an event code behavior occurs over multiple intervals, it should be coded in the interval in which **ends**.
- If a command is given toward the end of an interval, COMPLIANCE or NONCOMPLIANCE should be retro-coded in the same interval in which the command was given.
- Coding will follow the intervals on the DVD in *real time*, meaning the time on the screen exactly matches the time on the coding sheet.
- Record the beginning and end of each of the four experimental conditions at the top of the coding sheet. Write "begin # __" and "end # __" above the corresponding intervals. When the mother nods or says "yes" to the camera, this indicates that Jessica is talking to her—this is where the condition ends. The mothers and child's behavior and verbalizations are ignored during these times. The new condition begins when the mother moves to a new location in the room and/or gives a new instruction to the child. If you are performing the reliability coding, refer to previous code sheet and block out same intervals.
- If a time out occurs, write "begin time out" and "end time out" at the top of the coding sheet above the corresponding intervals. Time out begins when the child sits in time-out: the indication is coded. Nothing is coded during time out. If the child gets out of time-out for more than 5 seconds, resume coding. Time-out ends when the mom has indicated the time-out is over (verbally or behaviorally).
- Any statement which includes Look, Listen, See, Hear, etc. will be completely ignored and not coded.

CODE DEFINTIONS

MOTHER CODES

1. PARENT NEUTRAL VERBAL (V)
    a. Definition: Mother's verbalizations which stand alone and do not fit the definition of any other verbal code. Code NEUTRAL VERBAL only if mom's verbalization is separated from other codeable verbalizations by **2 seconds (on both sides)** or if separated by the child talking. Questions can be coded as NEUTRAL VERBAL. Positive statements from the mother which are **not evaluative** of the child's behavior are also coded NEUTRAL VERBAL.

    b. Examples:

"Yes"	"Yeah"	"This is fun"
"No"	"I'm busy"	"This is my favorite game"
"Really?"	"Momma's working"	"You can do it"
Child's name	"Um-hmm"	"You're almost done"
"You're welcome	"Oh"	Laughing
"Okay	"Because I said so"	Rule giving

2.   PARENT PLAY (PP)
    a.   Definition: Interactive activity with the child associated with games or toys, must see the parent touch the toys in order to code as PP. Code only in the context of parent-child play (not clean-up conditions). **A command given in the context of play is coded as NEUTRAL VERBAL.** Commands not related to play are coded as commands. REPRIMANDS are not coded as PARENT PLAY. PARENT PLAY can be double-coded with IMITATE and/or DESCRIBE.
    b.   Examples:
        Reading a book together
        Parent helps put together the puzzle
        Parent and child link monkey toys

3.   NEGATIVE PHYSICAL (NP)
    a.   Definition: Any forceful or unpleasant physical attention given to the child. Gentle physical guidance is also coded here. <u>Obviously negative</u> gestures and facial expressions are also coded as NEGATIVE PHYSICAL. Physical interactions in the context of a game (e.g. bashing toy cars into each other) are not coded as NEGATIVE PHYSICAL. Only code if you can see the behavior.
    b.   Examples:
        Grabbing the child's arm   Blocking the door/toy
        Dragging the child
        Gently redirecting the child away from the grown-up table
        Forcibly taking an object from the child
        Scowling
        Physically moving the child (or child's hand) away from a forbidden toy

4.   DESCRIBE (D)
    a.   Definition: Verbal descriptions of the child's behavior <u>in the context of play</u> within 5 seconds.
    b.   Examples:
        "You're sticking the red blocks together"
        "I see you putting the puzzle pieces in place"
        "You have a green car"
        "You're reading the book"

5.   IMITATE (IM)
    a.   Definition: Within the context of play, the parent verbally or motorically copies the child's speech or behavior within 5 seconds. Imitations during "clean-up" and "ignore" conditions are **not** coded IMITATE. If statement sounds like a question because of tone but has at least 2 of the same words, code as imitate. If parent makes it an actual question, regardless of whether it has at least 2 words, code as Neutral Verbal (unless it is an exact replication of the kids verbalization).
        <u>Verbal imitations</u>: the mother's verbalizations must be an exact copy or contain at least 2 of the same words as the child's verbalization. A verbal imitation can be simultaneous, such as in the case of counting out loud together.
        <u>Motoric imitations</u>: the mother must be playing with the same set of toys as the child.
    b.   Examples:

Child: "This is my neat fort" – Parent: "It is neat"
Parent plays with the same toy in the same way as the child
Child: "Cool!" – Parent: "Cool!"
Child: "I like Legos" – Parent: "I like Legos"

6. PRAISE (P)
   a. Definition: Any statement referring to the child's prior, ongoing, or future behavior that is positive in evaluation or shows approval. Praise statements strung together with little or no pause (fewer than 2 seconds) are coded as a single statement unless it is separated by a child neutral verbal. Also, positive physical affection (whether or not it's accompanied by verbal attention) is coded as PRAISE. Do not code as praise simply because of tone, must also include content. Exclude evaluative statements in response to child verbalizations.
   b. Examples:

"Good job"	"Thank you"
"I like the way you're cleaning up"	Hugging/Kissing child
"Wow!"	"Very nice"
High five	Ruffling child's hair
"I love you"	

7. ALPHA COMMAND (AC)
   a. Definition: A direct command that is immediately executable. Questions are **not** ALPHA COMMANDs. Commands given "following" the behavior are not ALPHA COMMANDs. ALPHA COMMANDs can be "stop" **or** "go" commands. Any statement which includes Look, Listen, See, Hear, etc. will be completely ignored. If the parent is simply reiterating a rule, code as PARENT NEUTRAL VERBAL (e.g. "Don't touch the toys" before the child has touched the toys). If a threat is included with a command, ignore the threat and code the command (e.g. "We'll be here all day if you don't put the toys away"). Parent NV does not spoil an alpha command. If mom sings the "Clean-Up Song," code as a PARENT NEUTRAL VERBAL.
   b. Examples:
      "Keep picking up" *(if the child was picking up then stopped)*
      "Let's pick up the toys" *(as long as the mother does not pre-empt compliance by performing the action herself)*
      "Don't _____" (*Must be said <u>during</u> misbehavior*)

"Come here"	"Put the blocks in the box"
"Draw a picture"	"Read the book"
"You need to _____"	"Be quiet"
"We need to _____"	"Finish cleaning up"
"Its time to _____"	"Stop _____"
	"I see _____"

8. BETA COMMAND (BC)
   a. Definition: Vague commands that do not specify a behavior, commands that are not immediately executable, and/or commands that are complied with by the parent. Commands which are given, then interrupted by another command

before the child can comply (within 5 seconds), are BETA COMMANDs. Commands following or occurring simultaneously with the behavior are coded as a BETA COMMAND. Commands phrased as questions are coded as BETA COMMANDs. BETA COMMANDs can be "stop" or "go" commands. If command is ended with an "ok?", code as a BETA COMMAND.

    b.   Examples:

"Be nice"	"Do it right"	"Just be good for awhile"
"Time's up"	"Your turn"	"Can you pick up the toys?"
"Could you go play?"	"Can you get off the table please?"	"Will you quiet down?"
"It's important that you"	"Faster"	"Where's/There's some more?"
"Come on"	"Keep going"	"Close the door" (*parent closes*
"Hurry"		*door before child is able*

***Note: A string of commands connected by conjunctions (e.g. so, and, but) are recorded as 1 command. Code the **BEST PART** of the command. So, if there is a string of commands which contain both Beta's and Alpha's, you would code the Alpha. A string of commands will be a Beta when all commands are vague, it is stated as a question, or the child is already engaging in the behavior. Counting 5 seconds for compliance begins at the end of the last command in the string. Compliance is defined as any behavior that complies with **ANY** part of the command. ***

    "Pick up the toys and put them in the box." – Alpha Command
    "Can you pick up the toys and put them in the box." – Beta Command

CHILD CODES

9.   COMPLY (C)
          Definition: When a parent instruction is given, the child begins following the instruction within 5 seconds. COMPLY is only coded following an ALPHA COMMAND. Must be <u>new</u> behavior in the direction of compliance.

10.   NONCOMPLY (NC)
          Definition: Failure to begin obeying parent instructions within 5 seconds. Must have <u>clear</u> evidence that they are moving to comply. Do not code NONCOMPLY if the child starts to comply, but then stalls or gets distracted. NONCOMPLY is only coded following an ALPHA COMMAND.

11.   AGGRESSION (A)
    a.   Definition: Physical or verbal harm, threat of harm, or hostility to people or objects. Hostility is a blatant display of inappropriate behavior directed at the mother. Multiple acts of aggression must be separated by at least 5 seconds to be coded separately.
    b.   Examples:

Hitting	Grabbing
Kicking	Scowling
Slapping	Throwing an object at a person
Biting	Breaking an object
Spitting	Verbal threat to do any of the above
Pushing	Insults
"I don't like you"	

12. **CHILD NEUTRAL VERBAL (CNV)**
   a.   Definition: Child talk directed to the mother. Talking to self is not coded in any category. Only verbalizations which are <u>clearly</u> words should be coded, even if the coder cannot understand what is being said. Code CHILD NEUTRAL VERBAL only if the child's verbalization is separated from other codeable verbalizations by **2 seconds (on both sides)** or if separated by the mom talking. Questions can be coded as CHILD NEUTRAL VERBAL.
   b.   Examples:
   > Answering parent question
   > "Why?"
   > "Will you help me?"
   > Talk about play (as long as the above conditions are met)

13. **TANTRUM (T)**
   a.   Definition: Any yelling, crying, stomping, or flopping on the floor that is inappropriate given the situation (crying after getting hurt would not be coded TANTRUM).
   b.   Examples:

Yelling	Flopping on the floor
Crying	Dropping down on knees
Stomping	Laying on the floor while crying

14. **WHINING (W)**
   a.   Definition: Child verbalization accompanied by atypical tone or pitch interpreted as obviously negative. If there is a whiny tone *and* any increased volume, the behavior is considered yelling (TANTRUM). If WHINING becomes a TANTRUM in the same verbalization (as indicated by occurring within **2 seconds** of each other), code TANTRUM only. Sassy-talk (verbalization with a clearly sassy tone) is also coded WHINING. WHINING can be coded even if the child is not using decipherable words.
   b.   Examples:

"I don't want to" (in whiny or sassy voice)	Whiny noise
"Please" (in whiny or sassy voice)	
"I want to go home" (in whiny or sassy voice)	
"That's not fair" (in whiny or sassy voice)	

15. **TOUCH FORBIDDEN (TF)**
   a.   Definition: The child touches a forbidden toy after being given instructions that the item is off-limits. TOUCH FORBIDDEN is coded for every interval in which the child touches the item. If the child again touches a forbidden item

after a break of at least 5 seconds, a new instance of TOUCH FORBIDDEN is coded.

b.   Examples:

         Child touches play-doh
         Child touches windsock
         Child touches office supplies

*Need to see them touch it OR hear it.