

PREVENTATIVE BEHAVIORAL PARENT TRAINING: DEMONSTRATION OF  
THE IMMEDIACY EFFECTS OF AN INNOVATIVE CONDUCT PROBLEM  
PREVENTION PROGRAM IN YOUNG AT-RISK CHILDREN

by

Alexis Bolton

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Approved:

---

Clint E. Field, Ph.D.  
Major Professor

---

Donna Gilbertson, Ph.D.  
Committee Member

---

Dennis O'Dell, M.D.  
Committee Member

---

Mark R. McLellan, Ph.D.  
Vice President for Research and  
Dean of the School of Graduate Studies

UTAH STATE UNIVERSITY  
Logan, Utah

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## ABSTRACT

Preventative Behavioral Parent Training: Demonstration of the Immediacy Effects of an Innovative Conduct Problem Prevention Program in Young At-Risk Children

by

Alexis Bolton, Educational Specialist

Utah State University, 2012

Major Professor: Dr. Clinton E. Field  
Department: Psychology

Among preschool-aged children, conduct problems (CP) are the number one reason for referral to mental health professionals. Research has consistently indicated that behavioral parent training (BPT) is the most effective technique for treating children's disruptive behavior; however, there is a lack of research regarding BPT effects in children below the age of 3. Preventive behavioral parent training (PBPT) can be considered a preventive extension of BPT. The purpose of this study was to determine the degree to which PBPT might yield immediate effects in reducing rates of conduct problems (i.e., noncompliance and tantrums) displayed by typically developing young children. Overall, findings indicated that all four child participants displayed decreased rates of noncompliance and tantrums as predicted.

(107 pages)

## PUBLIC ABSTRACT

Preventative Behavioral Parent Training: Demonstration of the Immediacy Effects of an  
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Researchers propose to administer preventative behavioral parent training (PBPT) to young children who are displaying developmentally typical conduct problems (i.e., noncompliance and tantrums), with the intent of contributing valuable knowledge for preventing the development of chronic conduct problems in children.

Preventative behavioral parent training is an innovative model designed for conduct problems prevention. The scope of this study will be limited to demonstrating the immediate effects of PBPT. Given the nature and origins of PBPT, immediacy effects are expected and should be relevant to the maintenance of effects over time.

It is predicted that participation in PBPT would yield positive outcomes in the form of decreased rates of child noncompliance, tantrums, and scores on standardized measures of conduct problems. Potential advantages of PBPT include a decrease in prevalence rates of disruptive behavior disorders, a decrease in the emotional stress placed on families of children with chronic conduct problems, and a reduction in related familial and societal monetary costs, to name a few.

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## INTRODUCTION

Conduct problems (CP) is a widespread term used to describe a vast range of problematic behaviors displayed by young children, including noncompliance, tantrums, defiance, whining, aggression, and antisocial behaviors (Campbell, Shaw, & Gilliom, 2000; Schroeder & Gordon, 2002). Among preschool-aged children, CP is the number one reason for referral to mental health professionals (Vando, Rhule-Louie, McMahon, & Spieker, 2008; Wakschlag & Keenan, 2001), and approximately half of all child mental health care referrals are associated with CP (Sholevar & Sholevar, 1995). Because parents expect a certain degree of difficult behavior from their young children, they may be hesitant to seek professional help for early manifestations of noncompliance, tantruming, and aggression. These parents often expect their children to outgrow difficult behaviors and do not seek professional services until the troublesome behaviors are entrenched and well-practiced, making effective intervention more difficult (Lee, Huang, Halpern, & Newschaffer, 2007).

Noncompliance has been identified by researchers as a keystone behavior in the development of CP (McMahon & Forehand, 2003), and when left untreated, more serious antisocial behaviors develop, often leading to formal diagnoses of the various disruptive behavior disorders (DBD). Oppositional defiant disorder (ODD) and conduct disorder (CD) are the two most frequently diagnosed DBD assigned to children with CP (American Psychiatric Association, 2000). Oppositional defiant disorder and CD differ to the degree and extent of the severity of antisocial behaviors, whereas the behaviors displayed by children with ODD tend to be more negativistic and defiant, and children with CD display more serious antisocial behaviors. The presence of CP in childhood is a

strong predictor of other psychiatric disorders in adulthood. Antisocial personality disorder, substance abuse and dependence, anxiety disorders, and depression are more commonly found in adults who experienced CP as youth than adults without such problems (Robins & Price, 1991). Additionally, it is estimated that more than half of all children with CP meet diagnostic criteria for major depression (Wolff & Ollendick, 2006).

The most well-established model of CP development is the coercion model, based on social learning theory and proposed by Gerald Patterson. According to this model, coercive parent/child interactions develop unintentionally and maintain childhood CP (Reid & Patterson, 1989). There have been two antisocial pathways proposed for explaining the developmental course and nature of delinquent behavior. The first is referred to as the “early starter” or “life-course-persistent” pathway, and postulates that children begin engaging in antisocial behaviors at a young age. Youth in this group progressively develop more serious CP as they advance in age, and they are likely to continue displaying antisocial behaviors throughout their lives. The second developmental pathway is referred to as the “late starter” or “adolescent-limited” pathway. Within this developmental trajectory, CP is not exhibited until adolescence. Youth in this group tend to engage in less severe antisocial behaviors and discontinue these behaviors as adults (Moffitt, 1993). Research has indicated that the stability rate of CP is higher in early starters compared to late starters (Farrington, Ohlin, & Wilson, 1986). That is, youth in the early starter group tend to engage in antisocial behavior at a

consistent rate across the lifespan, whereas youth in the late starter group tend to engage in antisocial behavior only during a specified period of life (i.e., adolescence).

A number of individual, familial, and environmental risk factors have been identified by researchers as contributing to the development of CP. While any given risk factor may play an important role in the onset and maintenance of CP, it is clear that interactions between many risk factors tend to be present for development of CP (Campbell, 1995). Protective factors that guard against the development of childhood CP have also been identified, but have been studied to a lesser extent than risk factors. Available data has indicated that ineffective parenting practices contribute greatly to the development and maintenance of childhood CP, while positive parenting practices function as protective factors. Some researchers have found that certain parental usage of consequences for their child's behavior including high use of rewards and low use of punishment (both physical and nonphysical), have been associated with an absence of CP in their child (Vostanis, Graves, Meltzer, Goodman, Jenkins, & Brugha, 2006). These findings align with the nature of behavioral parent training (BPT), which emphasizes positive parenting practices such as reward (i.e., praise and attention) and utilizes mild punishment strategies (i.e., time out). Further, these researchers have stressed the positive implications these parental strategies could have for prevention of and intervention with childhood CP.

Research has consistently indicated that BPT is more effective at treating children's disruptive behavior than other psychotherapeutic techniques (Eyberg, Nelson, & Boggs, 2008), and approximately one third of families who receive BPT intervention

report improvements. Generally, the less severe a child's CP and the younger the child, the more effective the treatment outcomes (McMahon & Forehand, 2003). It seems clear that children with CP respond to treatment better at an earlier age compared to a later one (Wakschlag & Keenan, 2001). However, most treatments regarding childhood CP focus on intervening with older children after disruptive behavior has been well-established, while very few treatments have been designed that focus on the prevention of such behavior in younger children. Clearly, more prevention-focused treatments for childhood CP are needed. Using a preventive extension of BPT, this study is designed to target children at risk for developing CP.

Preventive behavioral parent training (PBPT) can be considered a preventive extension of BPT. While PBPT is based on the same underlying principles as BPT, there are a few important distinctions between these two treatments. Traditionally, BPT has targeted children ages 3-8 who have already developed CP, while PBPT is designed for much younger children (i.e., ages 1-3) who are not yet displaying developmental atypical disruptive behavior. Additionally, BPT usually consists of 8-10 therapy sessions, while PBPT is designed to consist of only a single session. Thus, PBPT offers the advantage of brevity; preventing CP development in younger children is much more cost and time effective than treating already established CP in older children. Specific benefits of prevention work involving childhood CP have not yet been empirically established. However, one could imagine the potential advantages of such benefits to individual children, their families, and society. Implied is that a large number of youth could be prevented from living a life replete with psychological and psychosocial problems. Also,

the emotional and financial stress placed on families of antisocial youth may diminish considerably, resulting in stronger familial relationships and more favorable prognoses for youth. Another potential benefit of such prevention work could be the reduction of the antisocial youth population, possibly resulting in safer neighborhoods and communities as well as a reduction in the monetary costs associated with societal attempts to manage and rehabilitate antisocial individuals. To date, very little research involving CP prevention has been conducted; therefore, the exact benefits of such work are unknown. However, PBPT may provide some insight surrounding the specific benefits of preventing CP development in very young children.

## LITERATURE REVIEW

Conduct problems are associated with enormous costs affecting not only the individual child and the people in his or her immediate environment (e.g., family members, peers, teachers, neighbors), but the larger community as well. Among mental health disorders, CP has been proven one of the most costly, given that a large amount of children with CP receive assistance from mental health professionals and are involved with criminal justice systems for the majority of their lives (Webster-Stratton & Reid, 2003). Additionally, Patterson, Baxley, Probst, Hussey, and Moore (2006) found that for children age 13 and older, CP was the most frequent cause of unnecessary medical transport to health care facilities. These findings imply that childhood CP accounts for a significant expenditure of time and money not only for caregivers, but for the larger community as a whole.

In order to minimize the individual and community costs described above, children who are at risk or who have already developed minimal CP must receive intervention before they have had adequate opportunity to develop or progress into unmanageable problems. A few prevention studies have done just this, with promising results. These will be discussed in a later portion of this literature review.

### **Definitions**

Many young children display problematic behaviors that range in severity from mild to extreme. These behaviors can include noncompliance, tantrums, defiance, whining, aggression, and antisocial behaviors. Collectively, these disruptive behaviors

have been referred to as CP (Campbell et al., 2000; Schroeder & Gordon, 2002), and this term will be used throughout this review of the literature. Conduct Problems consists of a variety of behaviors; therefore it is important to define each one. Noncompliance typically resides at one end of the CP continuum and refers to defiance or unwillingness to complete commands or instructions given by a person of authority (Kuczynski & Kochanska, 1990). Noncompliance has also been defined as excessive disobedience to adults (McMahon & Frick, 2005). There are varying levels of noncompliance, ranging in degree of parental acceptability. For example, parents may consider their child's self-autonomy as a more acceptable form of noncompliance than if their child quietly ignores instructions. Further, an even more unacceptable form of noncompliance to parents may be if their child verbally refuses to follow instructions (Crockenberg & Litman, 1990). Tantrums, also on the lower end of the CP scale, refer to outbursts of negative emotion, including exhibitions of various behaviors, such as screaming, stomping, throwing things, crying, and running away (Potegal, Kosorok, & Davidson, 2003). Aggression initially begins at the lower end of the CP scale but can escalate to the middle and even higher end without appropriate intervention. Aggression can be categorized as either physical or verbal; physical aggression includes acts such as kicking, punching, hitting, biting, and fighting, whereas verbal aggression includes teasing, name calling, threats, and tattling (Schroeder & Gordon, 2002).

Any constellation of the behaviors described in the preceding paragraph constitutes the designation of CP; however, when these behaviors increase in intensity and frequency, they may be assigned a clinical diagnosis from a mental health

professional. The two diagnoses most frequently assigned as a result of escalated CP are ODD and CD (also referred to as DBD), and are described in detail in the following section.

### **Diagnoses**

Most children naturally display conduct problem behaviors, therefore it is fallacious to conclude that any child who throws a tantrum or hits a sibling is eligible for a DBD diagnosis. Campbell (1995) has stressed the importance of taking developmental considerations into account, stating that defiance and problems with discipline are normative toddler behaviors. The ubiquity of various conduct problems among young children has necessitated that a child meet specific diagnostic criteria in order to receive a clinical diagnosis. According to the most recent edition of the *Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association* (DSM-IV-TR; APA, 2000), there are two major diagnoses for conduct problems in children: ODD and CD.

Oppositional defiant disorder is characterized by recurrent disobedience, defiance, hostility, and negativistic behavior toward persons of authority, such as parents or guardians, teachers, babysitters, and other adults. In order to receive a diagnosis of ODD, one must exhibit four or more defiant, hostile behaviors in the past 6 months, including: losing temper, arguing with adults, refusing to obey adults' rules, deliberately annoying people, blaming others for his or her misbehavior, being easily annoyed, being angry and resentful, and being spiteful (APA, 2000). Conduct Disorder is characterized by repetitious violations of basic societal rules or norms that are appropriate to one's age,

and these violations comprise four categories: aggression to people and animals, destruction of property, deceitfulness or theft, and serious violations of rules. To meet a DSM-IV-R CD diagnosis, the individual must exhibit three or more behaviors associated with these four categories in the past 12 months, and at least one in the past 6 months (APA, 2000). It is hypothesized that conduct disorder (CD) may lead to adult externalizing disorders (e.g., antisocial personality disorder, substance disorders), which in turn lead to other disorders (e.g., depression, anxiety; Robins & Price, 1991). Given these findings, it seems critical to intervene early with childhood CP to prevent adulthood psychopathology.

As oppositional defiant disorder (ODD) and CD constitute separate disruptive behavior disorders (DBD), it is important to highlight the differences between them. Whereas the behaviors displayed by children with ODD tend to be more negativistic and defiant, children with CD display more serious antisocial behaviors. Oppositional defiant disorder is often considered a developmental precursor to CD, as the majority of children with CD diagnoses have previously been diagnosed with ODD. It is very rare for a child to be diagnosed with CD without also having a prior diagnosis of ODD. That being said, the majority of youth with a childhood diagnosis of ODD do not develop CD (Hinshaw & Lee, 2003). Additionally, ODD tends to be found in younger children while CD is found in older children and adolescents. This finding likely reflects the level of cognitive, emotional, and physical development required to engage in more serious antisocial behaviors.

## Prevalence

Among preschool-aged children, CP is the number one reason for referral to mental health professionals (Vando et al., 2008; Wakschlag & Keenan, 2001). Further, approximately half of all child mental health care referrals are directly linked with CP (Sholevar & Sholevar, 1995). Research data has suggested that if a child is characterized as behaviorally difficult at age 3 or 4, the child has about a 50% probability of exhibiting those behaviors through early adolescence (Campbell, 1995). This finding has indicated a high degree of stability of behavior problems in preschool-aged children. In accordance with this finding, Schroeder and Gordon (2002) found that the most common parental concerns of typically developing children include disruptive behavior. These parental concerns are not surprising, given the high prevalence rates of CP found in both clinical and nonclinical samples of preschool-aged children. Rates of disruptive behavior have been reported as high as 50% among nonclinical samples of children from age 4-7, and as high as 85% among clinical samples in this age range (Costello, 1990). Overall, CP is more commonly exhibited by males than females (Robins & Price, 1991), however, no sex differences have been found among preschool children in terms of rate and type of conduct problems (Campbell, 1995). For example, Jenkins, Owen, Bax, and Hart (1984) found that boys and girls displayed similar rates of temper tantrums across developmental stages. At age 2, 19% of children exhibit daily temper tantrums with this number decreasing to 18% at age 3, and to 11% at age 4. High rates of noncompliance are consistently found among preschool-aged children. For example, Achenbach and Edelbrock (1981) found that 80-90% of parents who were referred to outpatient mental

health clinics for their child's disruptive behavior reported problems with child noncompliance.

Unfortunately, some developmentally appropriate behaviors such as defiance, may be incorrectly construed by clinicians as a conduct disorder, increasing the prevalence rate of CP in preschool-aged children (Campbell, 1995). However, one could certainly argue that an inflated prevalence rate is favorable to underdiagnosis since CP left uninterrupted would undoubtedly develop into greater behavioral problems. Nevertheless, it may be prudent to take Campbell's (1995) findings into consideration when reviewing the extant prevalence data for preschool-aged children with ODD and CD diagnoses.

Angold and Costello (2001) estimated that the prevalence rate for diagnosed DBD among children ages 8-16 is between 5-10%. Rates of ODD in samples of preschool-aged children have been reported at 16% (Egger & Angold, 2006). Expanding further, rates of ODD have reportedly been found in 2-16% of the population, while an estimated 1-10% of the population is diagnosed with CD. Among children, CD is one of the most commonly diagnosed psychological disorders, and male populations have traditionally displayed higher rates than females (APA, 2000). Rates of CD in males have been reported to range from 6-16%, with CD rates ranging from 2-9% in female populations (Hinshaw & Lee, 2003).

### **Age of Onset**

Noncompliance is manifested early in the developmental course of CP and can continue to be displayed without appropriate intervention (Chamberlain & Patterson,

1995). Several researchers have suggested that noncompliance plays a predominant role in the advancement of more severe disruptive behavior, deeming noncompliance as a keystone behavior for further CP development (McMahon & Forehand, 2003; McMahon & Frick, 2005; McMahon, Wells, & Kotler, 2006). Expanding on this notion, some evidence has suggested that children with CP are at increased risk for accumulating other adjustment problems (McMahon & Frick, 2005). Given these findings, it is undoubtedly crucial to intervene at a child's first behavioral displays of noncompliance before more severe CP and other problems are given adequate time to develop. This topic will be explored in further detail in later sections of this review of the literature.

Parents and teachers tend to increasingly report behavior problems in children as they age from 2 to 3 years old (Campbell, 1995). Schroeder and Gordon (2002) suggested that the need for autonomy and control at this age account for increases in noncompliance rates. Similarly, parents report greater concern about temper tantrums during their child's second to third year of life than at any other age period (Jenkins et al., 1984). However, childhood displays of noncompliance are typical and a certain level of noncompliance is even considered a positive indication of assertiveness and autonomy development (Kuczynski & Kochanska, 1990). Researchers have provided support for these notions. For example, Brumfield and Roberts (1998) found that children ages 2 and 3 displayed noncompliance to maternal commands at a rate of 67.8%, with the rate of noncompliance being 22.3% for 4- and 5-year olds. This finding may be a reflection of the improvement in socialization as children progress developmentally. While 2- and 3-year-old children tend to display the highest rates of noncompliance and tantruming of

any other age group, a certain amount of these behaviors is still expected as children age to 4 and 5 years old. For example, children up to age 3 or 4 typically display an average of one tantrum per day, indicating that some level of tantruming is normative in young children (Potegal et al., 2003).

### **Developmental Course**

A number of risk factors have been identified as contributors to the development of childhood CP. One of the most prominent of these risk factors is ineffective parenting practices. There is no formal training provided to new mothers and fathers on how to effectively parent a child, requiring them to rely on common sense and parenting techniques used by their own parents. At least two inherent complications arise from these universal strategies: first, while positive parenting practices are readily apparent to some caregivers, others may have a more difficult time implementing such techniques, and second, one's own parents' parenting techniques may be ineffective or obsolete. Therefore, early intervention designed to modify or improve parenting techniques may represent the most practical solution to preventing the progression of CP. It is important to keep in mind that ineffective parenting practices alone are unlikely to lead to childhood CP; rather, it is more likely that CP develops from exposure to a host of risk factors interacting with one another.

The most popular model of CP development is the coercion model, based on social learning theory and proposed by Gerald Patterson. This model maintains that noncompliance and other disruptive behaviors in preschool-aged children originates with ineffective parenting practices and can continue into adolescence without appropriate

intervention. According to the coercion model, a child's social interactions with his or her caregivers are mediated by contextual factors such as socioeconomic status (SES), divorce, parental psychopathology, and neighborhood characteristics (Patterson, 2002). More specifically, these stressful contextual factors create adverse parent-child interactions early in a child's life, contributing to continuous development of CP (Reid & Patterson, 1989). The coercion process begins early in an infant's life (around 10- to 18-months old), with behavioral displays of a difficult temperament, such as irritability and fussiness. In reaction to their child's aversive behavior, caregivers respond likewise in an aversive manner, which leads to an escalation of aversive child behavior. The caregiver then gives in to the child's wishes and the child's aversive behavior stops (Patterson, 2002). The principle of negative reinforcement is responsible for the continuation of the coercion process. For example, the child learns that his or her aggressive behavior results in the removal of an aversive stimulus (e.g., parental commands) and thus continues to behave in antisocial ways. Additionally, the parent learns that appeasement of the child's demands results in the removal of an aversive stimulus (e.g., the child's disruptive behavior), creating a higher rate of parental appeasement. Patterson's coercion model was initially tested exclusively with older boys, leading some to speculate about the applicability of these findings to girls and younger children. Eddy, Leve, and Fagot (2001) conducted a replication study testing Patterson's coercion model with 201 5-year-old boys and 206 5-year-old girls. Their findings indicated that the coercion model applies to girls as equally as to boys, providing evidence for the validity of Patterson's model across genders and at a younger age.

A child's age at the onset of his or her behavioral displays of CP and the impact this has on one's future behavior is well known to researchers. There are two possible antisocial pathways explaining the developmental course and nature of delinquent behavior. The first is referred to as the "early starter" or "life-course-persistent" pathway, and postulates that children begin engaging in antisocial behaviors at a young age. Youth in this group progressively develop more serious CP as they advance in age, and they are likely to continue displaying antisocial behaviors throughout their lives. The second developmental pathway is referred to as the "late starter" or "adolescent-limited" pathway. According to this developmental trajectory, CP is not exhibited until adolescence. Youth in this group tend to engage in less severe antisocial behaviors and discontinue these behaviors as adults (Moffitt, 1993).

Patterson's coercion model aligns with our understanding of the early starter pathway, both postulating that CP develops and manifests early in a child's life. Given these research findings, it is imperative that prevention of CP begins as early as possible for children either identified as at-risk for development of CP, or who begin showing signs of CP at an early age. As the research has suggested, if CP is not handled appropriately at its onset, young children have a high probability of engaging in increasingly more antisocial forms of CP throughout their lives.

While there is abundant empirical support from over 30 years of research for Patterson's coercion model, other factors unmistakably contribute to the developmental course of CP in young children. It is clear that biological and genetic factors interact with the environment to produce CP in children. Campbell and colleagues (2000)

suggested that biologically focused research concerning CP is beneficial for contributing to a better understanding of individual child risk factors in the formation of CP. A biopsychosocial model offered by Dodge and Pettit (2003), places a multifactor interactional emphasis on the development of CP in youth. More specifically, the authors suggested that biological predispositions interact with sociocultural factors to create high risk CP “breeding grounds.” Early life events involving parents, peers, and social institutions are proposed to mediate these high-risk situations. A longitudinal study, examining the development of CP in 585 children from preschool age through early adulthood, provided support for Dodge and Pettit’s (2003) biopsychosocial model. The Child Development Project (CDP) demonstrated that difficult temperament and early externalizing behavior problems were associated with higher rates of peer rejection and harsh parenting practices. Additionally, a strong link was found between poor parenting strategies and sociocultural contexts, such as poverty.

Another biological theory for the development of CP implicates infant temperament. Deficits in emotional regulation, such as inability to respond in a socially appropriate way to stress and emotional experiences have been linked to CP in young children (Frick & Morris, 2004). Frick and Jackson (1993) have proposed that there is a genetic predisposition passed from parent to child that is responsible for dysfunctional family environments and development of childhood CP. Taylor, Iacono, and McGue (2000) have suggested that there are underlying genetic components responsible for the onset of CP in early starters. In a study comparing early starters to late starters and a control group of children with no history of CP, the early starters exhibited significantly

more behavioral, psychological, and emotional problems related to inhibition than the other two groups. Additionally, the early starters displayed lower levels of verbal and spatial memory capabilities, higher negative emotionality, more involvement with antisocial peers, and a greater history of familial antisocial behavior.

### **Risk Factors**

There is consensus among researchers that early difficult behavior in children may play a role in further development of conduct problems, however, disadvantageous environmental factors must be present (Campbell, 1995). Thus, a child's biological factors interact with his or her familial and environmental characteristics to contribute to the development and maintenance of CP (Stormont, 2002). In support of this notion, Nelson, Stage, Duppong-Hurley, Synhorst, and Epstein (2007) identified difficult temperament, maternal depression, and aggression (i.e., destroying own toys) as the three risk factors most predictive of CP in young children. This finding implies that one of these risk factors alone is not sufficient for CP development; rather, it is the interaction between personal and environmental characteristics that is essential.

#### **Individual Risk Factors**

Sex appears to be a risk factor for CP development. For example, throughout childhood and preadolescence, boys are four times more likely than girls to be diagnosed with CD, with the gap narrowing during adolescence (Hinshaw & Lee, 2003). Additionally, impulsive and hyperactive behaviors consistent with attention-deficit/hyperactivity disorder (ADHD) also appear to be risk factors, especially for young

boys (McMahon et al., 2006). CP is associated with other psychological disorders. For example, comorbid depression and CP in youth has been found at higher rates than would be expected in the average population. This finding indicates that a child with either depression or CP is at increased risk for developing the other disorder (Wolff & Ollendick, 2006). More specifically, it has been widely shown that CP precedes the onset of depression, suggesting that children with CP have a greater likelihood of developing depression than children with depression have of developing CP.

Children may have certain biological tendencies that contribute to the formation of CP (Dodge & Pettit, 2003). For example, researchers have suggested that a child's difficult temperament during his or her first year of life may lead to behavior problems later on (Campbell, 1995). Correlations between disruptive behavior and certain temperamental characteristics in infancy have been identified by multiple studies (Stormont, 2002). Common characteristics displayed by children with difficult temperaments include impulsivity, irritability, and hyperactivity (Campbell et al., 2000; Frick & Morris, 2004). In a longitudinal study conducted by Guerin, Gottfried, and Thomas (1997), these researchers followed 104 children from ages 1½-12. Children whose parents rated them as having a difficult temperament during infancy were 3-11 times more likely to display CP in the clinical range during childhood than children with average or below average difficult temperament parental ratings.

Frick, Cornell, Barry, Bodin, and Dane (2003) have suggested that young children with CP are more likely than children without CP to possess callous-unemotional (CU) personality traits. Characteristics of these traits include lack of guilt, lack of

understanding of empathy, and indifference toward using others for one's own gain. Generally, children with CU traits exhibit CP very early on and continue to develop more severe CP with age; this is consistent with the early starter pathway of CP development described earlier. In addition, children with CU traits tend to be unconcerned with emotionally distressing and threatening stimuli, seek thrill and adventure, and lack responsiveness to cues of punishment (Frick et al., 2003). An alarming finding in the research literature emphasizes the similar behavioral characteristics between children with CU traits and adults with antisocial personality disorder. Specifically, both groups display many of the same personality qualities associated with CU traits (e.g., lack of guilt, lack of empathy, callous use of others, etc.), as well as emotional deficits (e.g., lack of response to emotionally distressing stimuli; [Frick et al., 2003]).

Researchers have found evidence to suggest that an underactive behavioral inhibition system and/or an overactive behavioral activation system are associated with emotion regulation, impulsivity, and other externalizing behaviors that may contribute to the development of CP (Gray, 1987). For example, children with CP have been found to display more anger, impulsivity, and lower levels of emotion regulation (Wolff & Ollendick, 2006). Other researchers have indicated that children with CP have social and cognitive skills deficits. For example, these children have been found to misinterpret social cues, evaluate aggressive situations positively, participate in aggressive behaviors, have hostile attributional biases, and fail to produce solutions to social problems more often than children without CP (Crick & Dodge, 1994).

## **Familial Risk Factors**

Children with more severe CP tend to have more familial stressors (Stormont, 2002), such as family disorganization, lack of parental monitoring, and an absence of well-defined behavioral rules (Kandel, 1990). Parenting interactions have been heavily investigated and posited by researchers as the most important risk factor in the early development of CP (Webster-Stratton, Reid, & Hammond, 2004). Researchers have suggested that parenting style contributes significantly to the outset and tenacity of child externalizing behaviors (Campbell, 1995). Dysfunctional parenting practices have been shown to contribute significantly to the development of CP in young children (Kendziora & O'Leary, 1993; Patterson, 2002; Stormont, 2002). Chamberlain and Patterson (1995) suggested that child noncompliance and other conduct problems result from parental discipline errors, including inconsistency, irritable explosive discipline, low supervision and involvement, and inflexible rigid discipline. In addition, harsh parenting and lack of parental involvement and supervision have also been identified as risk factors (Frick & Jackson, 1993).

Maternal inconsistency in the disciplining of a child's noncompliant behavior has also been identified as a risk factor for childhood development of CP, as illustrated in the following study. Gardner (1989) found that mothers of children with CP managed conflict situations more inconsistently than mothers of children without such problems. The inconsistent mothers were found to engage in conflict with their child more frequently and to manage conflict inconsistently by not following through on their own commands given to their child (67% of the time), rather than giving in to their child's

demands. This finding suggests that the coercion model described earlier (Reid & Patterson, 1989) was in effect. For example, children in this study were negatively reinforced by engaging in conflicts with their mothers; by mothers failing to follow through on commands, their children were not required to comply and thus escaped carrying out an unpleasant task, such as a household chore. Other ineffective parenting practices, such as use of punishment as a behavioral consequence, have been identified by researchers as a risk factor for childhood CP (Kandel, 1990). Vostanis and colleagues (2006) found that parental use of nonphysical forms of punishment (e.g., grounding, sending to room, shouting) was significantly associated with CP in their children. This finding indicates that while parents in today's society may opt to practice nonphysical forms of punishment instead of previously favored physical forms, these practices still have a significant undesirable impact on their children's behavior.

Quality of the parent/child relationship appears to be an imperative risk factor for the development of CP. In a descriptive study concerning disruptive behavior in young children, Thomas and Guskin (2001) found that 41.2% of children in their sample with disruptive behavior reported disordered parental relationships. When compared to children without disruptive behavior, of whom 21.1% reported a disordered parental relationship, it is clear that the quality of the parent/child relationship is associated with CP in young children. In a related area, infant/parent attachment style has been identified as a potential risk factor for CP. Specifically, insecure attachments appear to be highly predictive of later CP. For example, Vando and colleagues (2008) found that an insecure infant/parent attachment at one year of age was highly associated with conduct problems

during first grade. Lyons-Ruth, Alpern, and Repacholi (1993) found that 71% of a sample of 62 5-year-old children displaying CP in preschool had a disorganized infant/parent attachment at 1½ years of age; however, these children also had mothers with an extensive history of psychosocial problems. Additionally, Green, Stanley, and Peters (2007) found that in a sample of 61 children from the ages of 4-9 with a formal diagnosis of either ODD or CD, 58% had a disorganized attachment with caregivers. These children also experienced high levels of atypical parental behaviors, such as criticism, hostility, and emotional over involvement, however, attachment style was independent of this variable. These findings indicate that a disorganized infant/parent attachment style in conjunction with familial stressors is a risk factor for childhood CP.

It is hypothesized that marital distress and conflict impedes positive parenting practices, thus leading to CP in youth (McMahon et al., 2006). This is consistent with the finding that marital discord is more likely to be reported among parents of children with CP, and these parents also report higher rates of physical aggression toward each other (Kendziora & O'Leary, 1993) than parents of children without CP. Parental psychopathology has been repeatedly identified as a major risk factor for childhood CP. For example, Frick and colleagues (1992) found that parents of children with CP had high rates of antisocial personality disorder, depression, and substance abuse. In addition, maternal depression has been shown repeatedly by researchers to be linked to CP (Kendziora & O'Leary, 1993). Consistent with this, Kuczynski and Kochanska (1990) found that 5-year-old girls of depressed mothers displayed more noncompliance to maternal commands than did 5-year-old girls of nondepressed mothers. This finding

implies that maternal depression may negatively impact positive parenting practices. Additionally, infants of depressed mothers have been observed to have more difficult temperaments, be fussier, react more negatively to maternal interactions, and display more behavior problems than infants of nondepressed mothers (Lee et al., 2007). Lee and colleagues (2007) asserted that maternal depression can bring about childhood CP in both direct (i.e., genetic contributions) and indirect (i.e., parent/child interactions, attachment quality) ways.

Parental drug use has also been identified as a risk factor for the development of CP. Kandel (1990) found that for parents of children aged 6 and under, increased drug use led to increased ineffective parenting practices and higher rates of CP in their children. This finding was especially indicative of maternal drug use. Further, the author stated that children of parents who engage in illicit drug use are not only at increased risk for CP development, but for adolescent drug involvement as well. Families of parental substance abusers tend to be characterized by poor parenting practices, unreasonable child expectations, extreme disciplinary techniques, lack of supervision, lack of cohesion, social isolation, family stress, psychological problems, antisocial behavior, and family stress (Kandel, 1990). Another risk factor regarding familial influences is parental maladaptive social cognitions, which refer to parental tendencies to attribute their children's disruptive behaviors to global and stable factors, to interpret them as intentional, and to incorrectly perceive these behaviors (McMahon & Frick, 2005).

### **Environmental Risk Factors**

Researchers have identified low SES as a risk factor for CP in children. Further, there appears to be an inverse relation between these two factors; as SES rises, levels of CP diminish. However, the effects of low SES may not have a direct influence on the development of CP; rather, these effects may be mediated by socializing experiences related to low SES. For example, harsh discipline, lack of maternal warmth, family stressors, mother's lack of social support, exposure to aggressive adults, peer group instability, and lack of cognitive stimulation have been reported to result from low SES, which in turn contribute to development and maintenance of CP in young children (Dodge, Pettit, & Bates, 1994).

The amount and quality of maternal social interactions have been found to influence the interactional pattern between a mother and her child (Wahler, 1980). That is, a mother's social interactions that are fewer and less positive results in an alienated interactional style between her and her child. This defective mode of communication then results in oppositional and other troublesome child behaviors, creating a vicious cycle of unpleasant mother-child interactions and the development of childhood CP.

Additionally, Buchanan and Flouri (2001) identified adverse environmental factors such as involvement with social services and the police, and family mobility as risk factors in the maintenance of externalizing behavior problems.

### **Protective Factors**

Less research attention has been given to protective factors of childhood CP. Given the scarcity of research in this area, it seems necessary that protective factors of CP

be more fully investigated. By pinpointing specific protective factors, it may be possible to prevent development of CP in a large amount of at-risk children. Thus, more knowledge in this area could contribute to a decline in rates of childhood disruptive behavior. Nevertheless, three areas of protective factors have been identified by researchers. The first area pertains to individual characteristics, which includes social skills, temperamental disposition, and cognitive skills. The second area of protective factors concerns the quality of one's central environmental interactions, such as secure child-parent attachments and positive connections with peers and other adults. The third and final area focuses on the greater external environment, such as the quality of school one attends and the community activities one engages in (Greenberg, Domitrovich, & Bumbarger, 2001).

### **Individual Protective Factors**

Low infant negative emotionality has been identified by several researchers as an individual protective factor against childhood development of CP. For instance, low infant negative emotionality in children whose mothers display high levels of depressive symptoms has been shown by Owens and Shaw (2003) to have a protective effect; externalizing behavior in these infants appeared to improve more over time compared to infants with high negative emotionality. Other individual characteristics have been identified as protective factors. For example, high levels of social competence and emotional self-regulation have been found to decrease the likelihood of childhood development of CP (Webster-Stratton, Reid, & Stoolmiller, 2008).

Some researchers have found that a child's behavior during parent/child interactions in response to parental demands may serve as an individual protective factor against development of CP in young children. Specifically there is evidence that children who employ negotiation strategies in response to parental commands, as opposed to more obtrusive strategies such as direct refusal, are less likely to develop CP (Kuczynski & Kochanska, 1990). This finding coincides with the coercion model of childhood development of CP; by using cooperative negotiation skills in response to parental commands, the coercive cycle is less likely to develop. There is also evidence to suggest that strong coping and problem solving skills act as important protective factors against adolescent violent behaviors (Franke, 2000).

### **Familial Protective Factors**

Parental responsiveness and attentiveness have been identified as familial protective factors against childhood development of CP in young children. The nurturance hypothesis maintains that pervasive attention, emotional investment, and behavior management given by parents plays a significant role in the emotional and social development of their children (Dishion & Bullock, 2002). Additionally, maternal responsiveness has been indicated by researchers to be a protective factor against the development of child noncompliance. Parpal and Maccoby (1985) found that children aged 3-4½ years old complied with parental demands at a higher rate when parents were involved with and responsive to their child's play. The authors suggested that responsive parent training may decrease noncompliance in preschool-aged children.

Family structure has been identified by researchers as a protective factor against youth violent behavior. Specifically, two parent households have been associated with less youth violence compared to one parent households (Franke, 2000). Certain parenting practices have also been identified by researchers as protective factors. For example, parental use of high rewards and low physical and nonphysical forms of punishment has been linked to an absence of CP in young children (Vostanis et al., 2006). Researchers have found that high levels of maternal acceptance are associated with low levels of CP in young children (Owens & Shaw, 2003). Another parenting practice associated with low levels of CP is maternal monitoring; there is evidence to suggest that parents have a great deal of influence on the kind of peer associations their child is exposed to and the amount of familial conflict present in the home. Dishion and Bullock (2002) state that parents can control these factors via indirect effects, or by careful management of the sibling and peer environment. For example, Supplee, Unikel, and Shaw (2007) found that maternal monitoring prevented their child's association with delinquent peers, therefore indirectly preventing development of CP. The implication here is that rates of CP will decrease or at least maintain at a steady rate with close parental monitoring, which suggests that a high level of parental involvement in their child's life is a protective factor against the development of CP.

Attachment style has also been identified by researchers as a protective factor, specifically secure attachment style. According to attachment theorists, a secure infant/parent attachment is dependent on parental availability, as well as the amount and quality of comfort and reassurance a parent provides to their child (Ainsworth & Bowlby,

1991). Research has indicated that children with secure attachment styles demonstrate lower levels of noncompliance, more sociability, and better emotion regulation than children with insecure attachment styles. Moreover, children with secure attachment styles exhibit less CP overall (Guttman-Steinmetz & Crowell, 2006).

### **Environmental Protective Factors**

Very little research regarding environmental protective factors against the development of childhood CP has been conducted. Nevertheless, a few protective factors have been identified by researchers. One such factor appears to be maternal satisfaction with the quality of her social network, regardless of the nature of that network. For instance, low-income, single mothers who report high rates of satisfaction with the quality of their social contacts also report low levels of CP in their children (Olson, Ceballo, & Park, 2002).

Another protective factor regarding a child's broader environmental context involves school settings and teaching strategies. Secure attachment to school has been consistently associated with low levels of violence in adolescents (Franke, 2000). Certain behavior management techniques have been shown by researchers to contribute to the prevention of CP. For example, teacher use of positive classroom management strategies in combination with social and emotional skills training has been found to prevent at-risk children from developing CP (Webster-Stratton et al., 2008).

## **Behavioral Parent Training**

Behavioral parent training (BPT) is a family-based intervention for treating conduct problems in young children and is based on social-learning principles (McMahon et al., 2006). Additionally, BPT utilizes operant principles in behavior modification processes (e.g., reinforcement, punishment, laws of contingency; O'Dell, 1974). The aim of BPT is to teach parents how to effectively manage their child's behavior in order to eliminate and prevent future conduct problems, which is accomplished by improving parents' behavior management skills (Hartman, Stage, & Webster-Stratton, 2003). Parent training models operate with the underlying assumption that ineffective parenting practices contribute to the development and maintenance of disruptive behavior problems (McMahon & Wells, 1998).

A number of BPT programs have been developed, all with slight procedural differences; however, nearly all employ behavioral principles as their theoretical foundation. Additionally, there are a number of commonalities shared by these interventions, including: primary intervention with the parent rather than the child, refocusing parental attention to prosocial goals rather than CP, instruction on positive parenting practices, and activities such as role playing, modeling, and homework assignments (McMahon & Forehand, 2003).

Constance Hanf has been credited with formulating the first BPT program, which still serves as the foundation for many of the BPT programs currently used today. Specifically, these programs consist of two phases. Phase one is focused on improving parent/child interactions via emphasizing the importance of differential attention and

proper attending skills, while phase two is concerned with decreasing inappropriate child behavior via mild punishment (i.e., time out) and differential reinforcement procedures (McMahon & Forehand, 2003).

Helping the Noncompliant Child (HNC) and Parent-Child Interaction Therapy (PCIT) are the two BPT programs that most closely resemble Dr. Hanf's original model. HNC differs from the original model by allowing the child to be present during all treatment sessions, and by using modeling, role playing, and didactic instruction to teach the desired skills (McMahon & Forehand, 2003). PCIT differs from Hanf's model in that PCIT places more emphasis on traditional play therapy techniques and problem solving skills (Rayfield, Monaco, & Eyberg, 1999). In addition, children receiving PCIT attend some, but not all, treatment sessions, and it is the only program based on Hanf's original model to continue incorporating spanking as an alternative punishment approach for a child's time out refusal (McMahon & Forehand, 2003).

Research has consistently indicated that BPT is more effective at treating children's disruptive behavior than other psychotherapeutic techniques, and Eyberg and colleagues (2008) recommend that clinicians use BPT as their initial intervention when treating children with CP. Numerous studies have demonstrated the efficacy of BPT (Bor, Sanders, & Markie-Dadds, 2002; Hartman et al., 2003; Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998). In an early study using BPT, Patterson (1974) found that the majority (78%) of young boys with CP treated in the study improved their behavior and maintained these effects at a one year follow-up. Webster-Stratton, Hollinsworth, and Kolpacoff (1989) found that parent training was effective in reducing conduct problems

for about two thirds of children, with the remaining one third continuing to exhibit disruptive behaviors one year following treatment. Peed, Roberts, and Forehand (1977) found similar conclusions from their parent training program study with six mother/child pairs. In another parent training study conducted by Patterson, Chamberlain, and Reid (1982), 19 youth between the ages of 3 and 12 were randomly assigned to a control or a treatment group. The treatment group received an average of 17 hours of therapy, with the control group receiving no therapy. Results at follow-up indicated that compared to the control group, the treatment group showed significant improvement in disruptive behavior. Bernal, Kilinnert, and Schultz (1980) found that compared to client-centered and wait-list control groups, BPT resulted in fewer CP in children aged 5-12; however, these effects were not maintained at follow-up. Serketich and Dumas (1996) conducted a meta-analysis of BPT and found BPT to be more effective with elementary school-aged children than with preschool-aged children. However, much more research has indicated that BPT is most effective with younger children (Hilarski, 2007).

### **Limitations of BPT**

It has been repeatedly demonstrated that BPT is effective with only about one third of participants (Beauchaine, Webster-Stratton, and Reid, 2005). In corroboration with these findings, McMahon and Forehand (2003) reported that approximately one third of families who receive BPT intervention fail to report improvements (about one third drop out of treatment and the remaining one third report improvements). Generally, the more severe a child's CP, the less effective the treatment outcomes (McMahon & Forehand, 2003). Additionally, BPT has proved to be efficacious for short-term

improvements of disruptive behavior in children ages 3-12 (Bernal et al., 1980; Patterson et al., 1982; Serketich & Dumas, 1996), however, a large proportion of these studies have been conducted with children ages 5-12. The limited research regarding BPT effects in children under the age of five and the lack of research regarding BPT effects in children below the age of three indicate a major limitation of BPT. There are likely many possible benefits to be discovered from research regarding BPT effects in children aged three and below; however, these benefits are unknown due to the lack of research with this younger age group.

### **Prevention Studies**

In 1994, the Institute of Medicine issued a report to clarify the arrangement of the mental health intervention structure. Three levels of prevention were identified: universal, selective, and indicated (these levels had previously been referred to as primary, secondary, and tertiary, respectively). Universal interventions are positive and proactive in nature and target the entire population or general public, with the goal of preventing the onset of a mental health disorder. Selective interventions target individuals who are above average or at-risk for developing a disorder, and who may even display a small degree of symptoms. The focus of this level of prevention is to impede further development of a disorder. Indicated interventions target individuals on the brink of formal diagnosis of a mental health disorder, but who do not quite meet diagnostic criteria. The goal at this level is to alleviate distressing symptoms as much as possible, so as to provide the highest level of comfort available to the individual.

Few studies investigating the long-term prevention of conduct disorder have been documented (LeMarquand, Tremblay, & Vitaro, 2001). Some evidence has indicated that parenting programs aid in the short-term improvement of children with emotional and behavioral disorders (Barlow, Parsons, & Stewart-Brown, 2005), which suggests that these programs have the potential for primary prevention of disruptive behavior. However, investigators have emphasized the need for longitudinal research on parenting programs before this conclusion can be made.

According to Webster-Stratton and Taylor (2001), interventions that focus on preventing disruptive behavior in children must include parents and/or teachers in order to produce successful generalization of treatment effects to various settings. This is one of the primary principles of the Incredible Years preventative parent training program. The Incredible Years program is designed to be comprehensive and interactive; teaching parents a broad array of parenting skills via videotape modeling and group discussions (McMahon & Forehand, 2003). The program targets children ages 3-8 years old, who are already exhibiting CP. The BASIC parent training program consists of 13 weekly 2-hour sessions. During sessions, parents are shown 1-2 minute vignettes (250 total vignettes) of modeled parenting skills, illustrating child development and social learning principles. The BASIC program follows the Hanf parent training model, with a focus on teaching ways of improving positive parent/child relationships and improving child behavior management skills via mild punishment procedures (i.e., time out). After completing the BASIC program, parents have the option of receiving the ADVANCE parent training program, which targets personal self-control, communication and problem-solving skills,

and improving social support and self-care. The ADVANCE program consists of an extra 14 sessions and 60 videotape vignettes. The SCHOOL parent training program was developed to assist parents in managing their child's academic behavior, and monitor teacher and peer relationships. This program is offered to parents after completion of the BASIC program, and consists of 4-6 additional sessions (Webster-Stratton & Reid, 2003).

Hartman and colleagues (2003) conducted a parent training research study using the Incredible Years parenting program with 81 Caucasian boys aged 4-7 years, who all met the DSM-III-R criteria for ODD and/or CD, and whose parents reported attentional problems. Their findings indicated decreases in CP in the boys and in negative parenting behaviors in their mothers following treatment, and contradict previous research findings that show children with comorbid conduct problems and attentional problems to be more resistant to parent training. These results document the efficacy of parent training with young children and suggest that prevention of further development of conduct problems is possible when identified and treated early in young children exhibiting both conduct and attentional problems. Overall, studies utilizing the BASIC component of the Incredible Years parent training program have consistently shown improvements in child antisocial behavior in two thirds of samples (Webster-Stratton & Reid, 2003).

The Fast Track Project was designed to prevent long-term antisocial behavior in young children identified as high risk from doing so (Conduct Problems Prevention Research Group, CPPRG, 1999). This project operated via a developmental theoretical model, assuming that effects such as poor parenting practices and environmental stressors

(e.g., poverty, crime) interact with individual child factors (e.g., irritability, impulsivity) to produce preschool-age children who are unprepared for school behaviorally, emotionally, and cognitively, and who are deemed as high risk for development of long-term antisocial behavior (Conduct Problems Prevention Research Group, 2000). Because of these underlying theoretical assumptions, the project aimed to improve children's and parents' social cognitive skills and children's academic skills, which have been identified as protective factors against the development of antisocial behavior. The underlying assumptions held that changes in the aforementioned processes would lead to increases in socially appropriate behaviors and decreases in problematic behaviors. The project aimed to be longitudinal and expansive, involving the target children's family, peers, teachers, and community members during the treatment.

The project consisted of two phases. Phase one concerned the elementary school. Multistage screening that included parent and teacher reports of the child's disruptive behavior identified 891 kindergarteners (mean of 6.5 years old) at high risk for development of long-term antisocial behavior. At the school level, universal intervention was employed. This included the Promoting Alternative THinking Strategies (PATHS) curriculum, which was implemented by classroom teachers 2-3 times weekly, and designed to teach students in grades 1 through 5 a variety of skills, including cooperation, self-control, problem solving, and emotional understanding skills. Selective interventions were offered to the children and their families in the high-risk group. This consisted of 22 weekly two hour enrichment sessions, which included academic tutoring and social skills training groups for the children and parenting skills groups for the parents. In their

respective groups, the children were given lessons on communication and problem solving skills, while their parents were taught how to effectively communicate and discipline their children. At the end of each enrichment session, the children and their parents practiced their newly learned skills for 30 minutes with support from the staff. Additional support in the form of individualized services were provided to the children and their parents in the forms of biweekly home visits, academic tutoring thrice weekly, and weekly peer pairing.

Results at the end of the initial year of the Fast Track Project indicated marked improvements in children's attainment of critical factors protecting against the development of long-term antisocial behavior. The acquired improvements included academic enhancement, positive peer interactions, and social and emotional management skills. Similarly, parents involved in the project significantly improved in general parenting behavior, including more discipline consistency and more positive involvement with their children and the school. The second phase of this project involved the adolescent period, and included grades 5 through 10. Grades 5 through 7 received intensive preventive support, while grades 8 through 10 continued with more individualized preventive support. Students in grades 5 and 6, and their parents, continued participating in monthly 2-hour enrichment sessions, which emphasized the importance of parent/child communication and parental supervision. Grades 7 and 8 received individualized youth forums focusing on identity development, academic achievement, vocational decision making, and connections with positive peer groups. Overall, early results of the Fast Track Project indicated moderate positive effects for

children at high risk for development of long-term antisocial behavior (CPPRG, 1999). However, the first group of participants has yet to complete the project, consequently inhibiting longitudinal results regarding the effectiveness of the project. Additionally, this study posits that efforts to prevent disruptive behavior should not end when grade school does (CPPRG, 2000), because risk factors for developing disruptive behavior continue on, and new risk factors surface during adolescence.

The Triple P-Positive Parenting Program is another parent training program with components aimed at preventing development of CP in youth (Sanders, 1999; Sanders, Markie-Dadds, Tully, & Bor, 2000). This program strives to determine the minimal amount of intervention a child and his or her parents require for adequate reduction of youth CP, and includes children up to age 16. Triple P contains five varying levels of treatment, which will be described briefly. Universal Triple P is the first level of this program, and is a universal prevention effort based on widespread media campaigns. Selected Triple P is the second level, and targets parents with specific concerns regarding their child's behavior. During this level, general practitioners give advice to parents about minor child behavior problems. The third level is Primary Care Triple P and targets parents with children displaying mild to moderate behavior problems. General practitioners provide four parent training sessions designed to improve positive parenting skills. Level 4 is Standard Triple P, and targets parents whose children display severe CP. Intensive parent training is provided by a mental health professional at this level in a variety of forms, including individual, group, and self-directed, and usually consist of 8-10 one-hour sessions. Level 5 is Enhanced Triple P, and targets families of children with

severe CP and other family dysfunctions. At this level, mental health professionals provide up to 11 one-hour sessions involving the entire family.

The Universal and Selected levels of treatment are more prevention focused than the other levels, although most studies regarding the Triple P-Positive Parenting Program have focused on the Standard and Enhanced levels of treatment, meaning that most children are targeted after the onset of CP. Given the nature of this focus, limited work regarding the prevention of CP in very young children has been conducted. Nonetheless, many studies have provided evidence of the effectiveness of the Standard and Enhanced levels of treatment. A study conducted by Sanders et al. (2000) investigated the efficacy of the Triple P-Positive Parenting Program. Participants included 305 three-year-old children at high risk for CP development and their parents, and were randomly assigned to one of four groups: Enhanced Triple P, Standard Triple P, self-directed Standard Triple P, and a wait-list control group. Results indicated that children in the Enhanced and Standard Triple P groups attained higher levels of improvement in CP than the other two groups. Specifically, the Enhanced group produced short-term effects in children's CP behavior, but not in long-term effects. Bor and colleagues (2002) conducted a similar study using Triple P. Their sample included 87 three-year-old children at high risk for CP development and their parents. Like the previous study, participants were randomly assigned to one of three groups: Enhanced Triple P, Standard Triple P, and a wait-list control group. Results of the study concluded that the two treatment groups were more effective than the wait-list control group in reducing CP behavior, with the Enhanced Triple P group showing marked improvements. Additionally, treatment effects were

maintained at a 1-year follow-up session. A meta analysis conducted by Thomas and Zimmer-Gembeck (2007) provides support for the effectiveness of the Triple P-Positive Parenting Program. Specifically, their study indicated moderate to large effect sizes for all five levels of the program on parental reports of child and parent behaviors.

Generally, there have been positive results regarding the efficacy of the prevention studies highlighted in this review. However, these studies tend to have common characteristics, such as targeting disruptive behavior after it has developed, targeting older children, and typically requiring many weeks to implement. Prevention approaches could be improved by intervening before CP have developed, targeting much younger children, and substantially reducing the treatment implementation time.

## PROBLEM STATEMENT

Behavioral parent training has traditionally targeted older children who are already displaying high rates of CP. While research has consistently demonstrated the effectiveness of BPT in reducing rates of disruptive behavior (Eyberg et al., 2008), this model of treatment can be modified to target much younger children who are at risk but have not yet developed a disruptive behavior disorder. Preventive behavioral parent training (PBPT) can be considered a preventive extension of BPT. While PBPT operates by the same underlying principles as BPT, there are significant distinctions between these models of intervention. First, BPT focuses on treatment of clinical levels of disruptive behaviors after they have already been established, whereas PBPT focuses solely on preventing clinically disruptive levels of behavior from developing. Second, BPT targets children ages 3-8 and is most commonly employed with school-age children, while PBPT targets a much younger group of children, specifically, children between 1-3 years of age. PBPT is designed to target the age range wherein CP occurrence is developmentally typical and expected, and rarely a clinical concern. Third, BPT treatments usually require participation in 8-10 or more, therapy sessions. This is also true of other proposed prevention models (CPPRG, 2000; Sanders, 1999; Sanders et al., 2000; Webster-Stratton & Reid, 2003). PBPT draws a sharp contrast to these models as preventative content is delivered in a single training session that contains similar content as BPT sessions, simplified and delivered in a developmentally sensitive manner. Thus, PBPT also offers the advantage of significant brevity. Because there is limited research in the area of childhood CP prevention, the specific benefits of such strategies are unknown while the

potential benefits are immense. Potential advantages of PBPT include a decrease in prevalence rates of DBD, a decrease in the emotional stress placed on families of children with chronic CP, and a reduction in related familial and societal monetary costs, to name a few. Given the timing, brevity, and ease with which such prevention strategies could be employed, few disadvantages are apparent.

## PURPOSE AND OBJECTIVES

The purpose of this study was to administer PBPT to young children who were displaying developmentally typical CP, with the intent of contributing valuable knowledge for preventing the development of chronic CP in children. More specifically, this study was proposed to evaluate the immediate benefits of PBPT in altering rates of conduct problems currently displayed by typically developing young children, as these would function as precursors of subsequent, more extensive conduct problems.

PBPT is an innovative model designed for CP prevention. Immediacy effects constitute only one outcome of interest; however, the scope of this study was limited to demonstrating the immediate effects of PBPT. Demonstrating the immediate impact of PBPT on current behavior could contribute greatly to the scarce research literature in the area of CP prevention as well as provide support for the notion of addressing CP before clinical concerns emerge. Given the nature and origins of PBPT, immediacy effects would be expected and should be relevant to the maintenance of effects over time. This study examined the following specific empirical questions:

1. Does PBPT produce immediate decreases in noncompliance among children ages 1½-3-years-old?
2. Does PBPT produce immediate decreases in tantrums among children ages 1½-3-years-old?
3. Does PBPT produce immediate decreases in scores on standardized measures of CP?

It was predicted that participation in a brief prevention protocol would yield positive outcomes in the form of decreased rates of child noncompliance, tantrums, and scores on standardized measures of CP.

## METHODS

### **Participants**

Four children and their mothers were recruited to participate in the study. Recruiting methods included placing fliers (Appendix A) in local public locations such as grocery stores, libraries, and physician's offices, and advertising on the online Utah State University Events Calendar. During the initial telephone contact, all parents were asked if their child was exhibiting daily rates of noncompliance or tantrums and if so, how effective they felt they were in responding to these behaviors. Parents who indicated that their child was exhibiting problematic behaviors and who expressed the desire for assistance in dealing with these problems, were provided further information regarding the study.

Participants had to meet a number of requirements in order to participate in the study. First, the child had to be typically developing, as evidenced by the accomplishment of age appropriate cognitive and communication abilities. Second, the problematic behaviors exhibited by the child could not qualify the child for a clinical diagnosis. Third, participating parents were limited to those that expressed concern regarding their ability or effectiveness in managing their child's problematic behaviors. Fourth, the child could not be a previous recipient of psychological services in relation to the disruptive behavior disorders. Fifth, at least two risk factors associated with the development of DBD had to be present.

The cognitive and communication domains of the Battelle Developmental Inventory, Second Edition (BDI-II; Newborg, 2005) were administered to prospective

child participants to determine developmental level. Children who were at or beyond expected developmental norms were approved to participate in the study. The Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000) was administered to families to determine the child's level of problematic behavior. Children who achieved a clinical score ( $T$ -score  $\geq 71$ ) on the Oppositional Defiant Problems DSM-oriented scale were excluded from participation in the study due to the presence of clinical concerns. A telephone interview was conducted with parents to confirm the presence of misbehaviors, determine if parents were concerned with their abilities to manage their child's problematic behavior, and to confirm that the child had not previously received psychological services in relation to the disruptive behavior disorders (Appendix B). Additionally, parents had to report the presence of at least two risk factors, including: low SES, single-parent household, maternal depression, marital conflict, lack of social support, negative life stressors, and child psychopathology (not including DBD, ODD, or CD). In order to determine low SES, the family's reported annual income and size of the family was considered. If the reported income fell below the poverty threshold for any given family size, the family was characterized as having a low SES (United States Census Bureau, 2000). Presence of a single parent household was assessed via a demographics questionnaire (Appendix C) administered to parents. The Brief Symptom Inventory (BSI; Derogatis, 1993) was administered to parents to determine presence of parental psychopathology. Scores within the clinically significant range ( $T$ -score  $\geq 63$ ) on the Global Severity Index, Positive Symptom Distress Index, or the Positive Symptom Total indicated the presence of parental psychopathology. Parents were also

administered the Parenting Stress Index (PSI; Abidin, 1995) in order to assess levels of maternal depression, marital conflict, degree of social support, and presence of negative life stressors. Scores exceeding clinically significant cut-offs ( $T$ -score  $\geq 60$ ) on the Total Stress score, Life Stress score, or the Isolation and Spouse Parent Domain scale scores, indicated the presence of parental stress. Finally, child psychopathology was assessed via the CBCL and considered present when scores exceeded clinically significant cut-offs ( $T$ -score  $\geq 71$ ) on the Emotionally Reactive, Anxious/Depressed, Somatic Complaints, Withdrawn, Sleep Problems, Attention Problems, and Aggressive Behavior syndrome scales, and the Affective Problems, Anxiety Problems, Pervasive Developmental Problems, and Attention Deficit/Hyperactivity Problems DSM-oriented scales.

### **Design**

This study adopted a multiple-baseline, small  $n$  experimental design, with two experimental groups (G1 and G2) that differed only in length of baseline exposure. Two families were randomly assigned to each group, ( $N = 4$ ). Each group was exposed to the same treatment; however, compared to G1, G2 had an extended baseline to account for time-based confounding factors. Although there was not a control group included in this study to account for possible confounding factors (e.g., placebo effects, self-monitoring effects), experimental control over such factors was achieved via use of the multiple-baseline design which speaks to the experimental strength of this design. This design controls for threats to internal validity by varying the length of the baseline. Thus if a third or other variable possessed functional relations with dependent variables, these would be observed in the data across participants thereby allowing the opportunity to

detect and account for the confounding factor. In contrast, the measures used in this study and described below involved subjective ratings obtained from parents and therefore were susceptible to parent bias.

### **Setting**

A single room in a research laboratory in the Psychology Department at Utah State University comprised the setting for the entire study. An adult-sized table with four chairs and a child-sized table with two small chairs were placed in the room. The room consisted of shelves containing toys (i.e., toy cars, play food toys) within the child's reach. Children were allowed to play with toys while their parents participated in PBPT training.

### **Measures**

Four measures were utilized throughout this study. These were administered to families during their initial visit and re-administered during the final visit to the lab.

#### **Parent Screening Measures**

The Brief Symptom Inventory (BSI) is a self-report measure completed by the parents that was used to assess parental psychological functioning (Derogatis, 1993). The BSI was used in this study to assess for potential risk factors in the form of parental psychopathology, specifically maternal depression. On the BSI, parents are asked to rate 53 items on a 5-point scale, regarding how well each item describes their level of distress over the past week. The BSI consists of three global index scores (Global Severity Index,

Positive Symptom Total, and Positive Symptom Distress Index), and nine primary symptom scales (depression, anxiety, somatization, obsessive-compulsive, interpersonal sensitivity, hostility, phobic anxiety, paranoid ideation, and psychoticism). Research has indicated high reliability for the BSI, particularly for the Global Severity Index ( $r = .96$ ; (Shahar, Soffer, & Gilboa-Shechtman, 2008). For the global index scores (Global Severity Index, Positive Symptom Total, and Positive Symptom Distress Index) a  $T$ -score  $\geq 63$  is within the clinically significant range.

The Parenting Stress Index (PSI) is a self-report measure completed by the parents and is designed to assess parental levels of stress related to specific parent and child characteristics and responsibilities of parenting (Abidin, 1995). The PSI was used in this study to assess for potential risk factors in the form of parental psychopathology, specifically isolation, and life stress. Parents are asked to indicate how well they agree with each of the 120 items. The PSI provides a Total Stress score, which consists of a child domain scale score, a parent domain scale score, and a life stress scale score. The child domain contains six subscale scores (distractibility/hyperactivity, adaptability, reinforces parent, demandingness, mood, acceptability) and the parent domain consists of seven subscale scores (competence, isolation, attachment, health, role restriction, depression, and spouse). Reports of high levels of internal consistency have been indicated in research using the PSI. On the PSI,  $T$ -scores  $\geq 85^{\text{th}}$  percentile indicate clinical levels.

### **Child Screening Measures**

The Child Behavior Checklist (CBCL) is a parent-reported measure consisting of 99 items, and reports of reliability have been high (Achenbach & Rescorla, 2000). The CBCL was used in this study to assess for potential risk factors in the form of child psychopathology, specifically any elevated area excluding the oppositional defiant problems subscale. For each item, parents must indicate the frequency of various problematic behaviors displayed by their child during the past two months. The CBCL provides an overall score for symptomatic behavior and two broadband scales: internalizing and externalizing. The CBCL also consists of seven syndrome scales: emotionally reactive, anxious/depressed, somatic complaints, withdrawn, sleep problems, attention problems, and aggressive behavior. Additionally, five DSM oriented scales are also given: affective problems, anxiety problems, pervasive developmental problems, attention deficit/hyperactivity problems, and oppositional defiant problems. For the DSM-oriented scales, a  $T$ -score  $\leq 66$  is within the normal range, a  $T$ -score ranging from 67-70 is within the borderline clinically significant range, and a  $T$ -score  $\geq 71$  is within the clinically significant range.

The Eyberg Child Behavior Inventory (ECBI) is a parent-reported measure consisting of 36 items, and research has indicated high levels of reliability (Eyberg & Pincus, 1999). The ECBI was used in this study to assess for the presence of child problematic behavior, specifically regarding the severity of behavior. For each item, parents must rate the frequency and intensity of various problematic behaviors displayed by their child. The ECBI provides a Total Intensity score and a Total Problems score.

The ECBI's intensity scale provides indicators of severity of a child's problem behaviors; the problem scale of the ECBI indicates to what extent the problem behaviors are a concern for the parent. Standard ECBI cutoff scores are 132 for the intensity scale and 15 for the problem scale.

### **Procedure**

Participants that satisfied initial inclusionary and exclusionary criteria were invited to participate in additional screening assessments at the research lab. The initial visit was approximately one hour in length. During this visit, informed consent was obtained and children participated in a developmental screening (BDI-II) while their parents completed additional clinical measures. Families who met all study requirements and who agreed to participate in the study during their initial visit to the lab were instructed in collecting Home Record Card (HRC) (Appendix D) baseline data for one week (G1) or two week (G2) baseline periods.

During their second visit to the lab, each family participated in a one-hour PBPT training. PBPT draws on the strengths of BPT and encourages parents to employ modified and abbreviated behavior management strategies with children aged 1½-3 years. Specific skills taught included: effective use of strategic attention, using effective commands, and appropriate use of time out in relation to display of conduct problems. These skills were discussed and modeled for the parents, and a handout was provided for parents to take home as a reference (Appendix E).

During their third visit to the lab, additional clarification regarding the PBPT training was provided to participants who requested further explanation. This session

was approximately 15 minutes in length and consisted of discussion only. Three of the four participants requested clarification regarding the time-out procedures, and the remaining participant did not express need for additional clarification regarding any of the PBPT procedures. For the participants that requested additional clarification, the material provided during their second visit, or training session, was reviewed with them. Thus, no new content was provided to participants during their third visit to the lab. Throughout the study, parents collected HRC data. At three weeks following the training session, G1 families were asked to return to the lab to be assessed using the same measures administered during their initial visit. The final visit for each family lasted approximately 30-45 minutes. The course of the study for G2 families was identical to G1 families with the exception of experiencing an extended baseline period of observation.

Families participating in this study received a number of benefits including: free access to prevention materials and professional assistance in managing typical child CP, and access to a free developmental screening indicating the status of the child's cognitive and communicative development. Such an assessment would otherwise be costly to obtain.

### **Dependent Variables**

The primary dependent variables of this study were rates of noncompliance and tantrums. These variables were measured in a number of ways. First, as participant observers, parents kept records of the frequency of noncompliance and tantrums present in the home environment using the HRC. Second, the CBCL (the Oppositional Defiant

Problems DSM-oriented scale) and ECBI (the Total Problems score and Total Intensity score) served as standardized, objective measures of rates of conduct problems.

### **Data Analysis**

Collected HRC data was visually analyzed according to specific data characteristics, such as trend, variability, level, and course (Hayes, Barlow, & Nelson-Gray, 1999) and displayed graphically. Observational data may be graphically analyzed in a variety of ways. Four characteristics of the data that are typically considered include the trend, variability, level, and course of the data (Hayes et al., 1999). Trend refers to the pattern of the data points. For instance, patterns of data can be increasing, decreasing, cyclical, or curvilinear. For the purposes of this study, a clear downward trend across conditions was considered a meaningful change. Variability refers to how different or divergent the scores are within a condition. For this study, any decrease from pre- to post-prevention was considered meaningful. Any decrease in the number of zero occurrence days pre- to post-prevention was also considered significant. Level refers to the amount or magnitude of the target variable. An average decrease of one or more occurrences (i.e., noncompliance, tantrums) per day from pre- to post-prevention was considered meaningful in this study. Finally, course refers to the overall nature of the data and also includes any unusual characteristics. Outcome data related to each of the empirical questions of the study were grouped and have been presented subsequently. Descriptive statistics were also calculated to accompany the graphed data and assist in data presentation. Pre-post scores on standardized measures were compared to determine

the extent of change in scores observed following participation in the prevention program.

## RESULTS

### **Sample Description and Inclusion Criteria**

Four dyads consisting of a mother and child participated in the study. The four dyads that participated were the first four to contact the investigators regarding the study, thus there were no participants that failed to qualify for participation. Demographic information for each participant is displayed in Table 1. Child mean age for all groups was 27 months old. Two of the children were male, two were female, and all participants were Caucasian. All families met eligibility criteria in order to participate in the study. First, each child participant met and/or exceeded the cutoff scores for both the cognitive and communication domains of the BDI-II, indicating that all child participants were typically developing in these domains. Second, none of the participants indicated that their child was exhibiting clinical levels of conduct problems, as measured by the CBCL. Third, each family expressed concern regarding their effectiveness in managing their child's problematic behaviors. Finally, none of the children had previously received psychological services for conduct problems.

Each family also reported the presence of at least two risk factors for CP. Risk factors identified for each participant are listed in Table 2.

Table 1

*Demographic Information for Each Participant*

Category	1 (G1)	2 (G1)	3(G2)	4 (G2)
Age (in months)	22	26	28	32
Gender	Female	Male	Female	Male
Ethnicity	Caucasian	Caucasian	Caucasian	Caucasian
BDI-II cognitive domain (cut-off)	17(14)	20(17)	18(17)	18(17)
BDI-II communication domain (cut-off)	16(13)	20(18)	18(18)	20(18)
CBCL pre <sup>a</sup>	67 (Borderline)	67 (Borderline)	64 (Normal)	59 (Normal)
Family income	High	Low	Low	High
Single parent household	No	No	No	No

<sup>a</sup>CBCL Oppositional Defiant Problems DSM-oriented scale score (clinical cut-off >70).

### Empirical Questions

#### **PBPT Does Produce Immediate Decreases in Noncompliance Among Children Ages 1½-3 Years Old**

Figure 1 displays data for baseline and post-participation reports of daily frequency counts of noncompliance. Mean rates of noncompliance are also depicted for each condition and participant.

Overall, there was a clear downward trend representing decreasing rates of noncompliance from baseline to post-prevention, with the exception of participant 1, who remained relatively stable across conditions. Taken together, three of the four

Table 2

*Risk Factors Identified for Each Participant*

Risk Factor	1 (G1)	2 (G1)	3(G2)	4 (G2)
Poverty	--	X	X	--
Single-parent household	--	--	--	--
Maternal depression	--	--	--	--
Isolation	X	X	X	X
Life stress	--	X	--	--
Attention Problems <sup>a</sup>	X			
Attention Deficit/Hyperactivity <sup>a</sup> Problems	X			
Aggressive Behavior <sup>a</sup>		X	X	
Affective Problems <sup>a</sup>		X		
Pervasive Developmental Problems <sup>a</sup>		X		
Somatic Complaints <sup>a</sup>				X

<sup>a</sup>Child psychopathology risk factors (not including the CBCL oppositional defiant problems subscale).

participants exhibited a clear downward trend over the course of the study.

Two of the four participants displayed a decrease in variability from baseline to post-prevention, while the remaining two participants exhibited a slight increase. Of interest is participant 4, who exhibited higher variability from baseline to immediately following the prevention, and then a significant drop in daily rates of noncompliance for the remainder of the study. Overall, two of the four participants exhibited decreased variability over the course of the study.

A clear decrease in the daily average rate of noncompliance from baseline to post-prevention was seen for all participants; however, only three of the four had an average decrease of one occurrence of noncompliance and were considered meaningful changes.

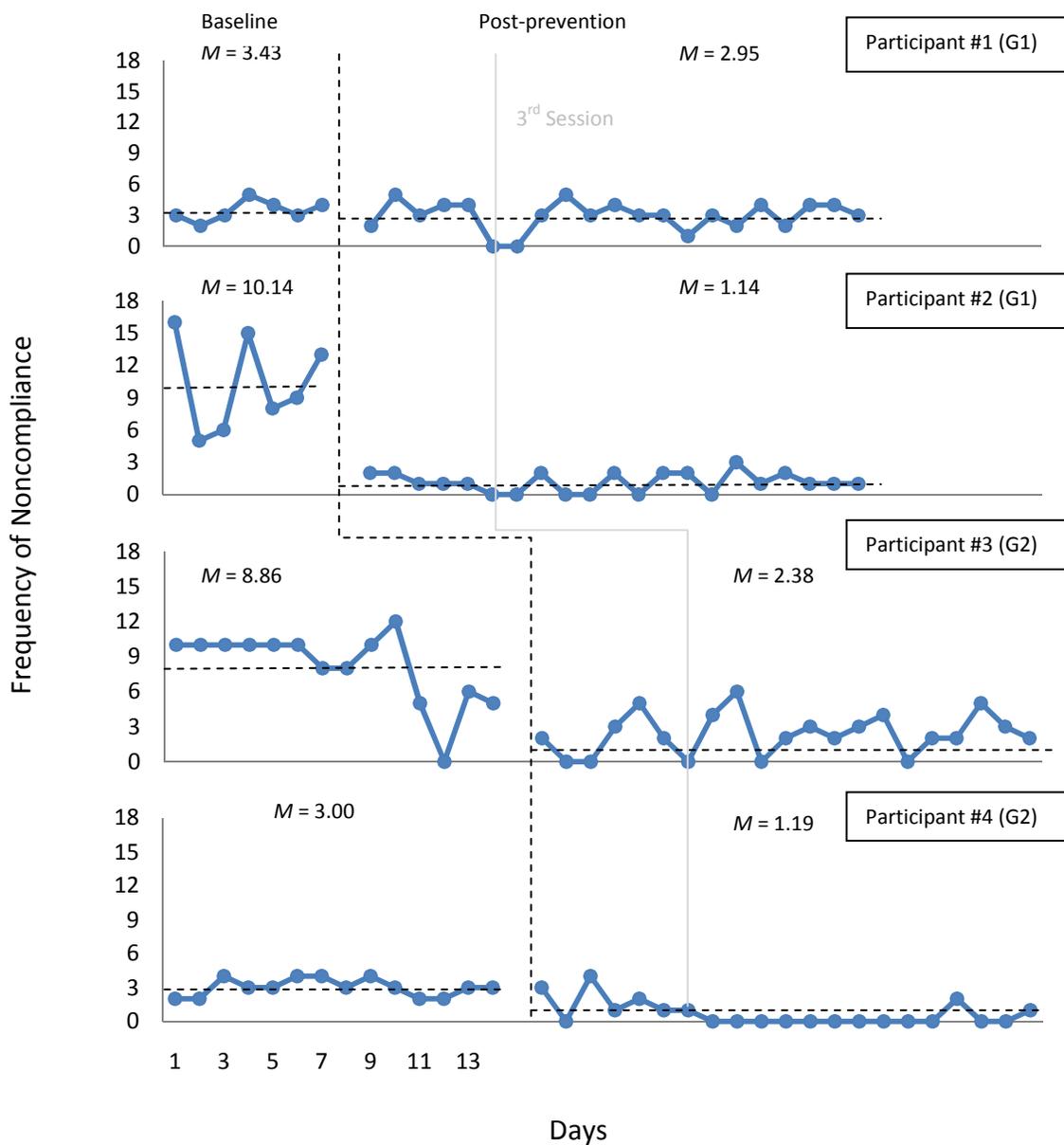


Figure 1. Home Record Card: Frequency of noncompliance during the course of the study for all participants.

As displayed in Figure 1, all participants reported a decrease in noncompliance level over the course of the study and in a manner consistent with expected outcomes. Plotted condition averages readily reflect these decreases that range from 0.48 to 9.00. Three of the four participants displayed substantial decreases in level of noncompliance from baseline to post-prevention, while the other participant exhibited a mild decrease in level.

With regard to the course of the data, 3 of the 4 participants exhibited a decrease of noncompliance from baseline to post-prevention. The remaining participant exhibited very minor decreases of noncompliance. However, all participants exhibited a greater number of zero occurrence days during post-prevention than during baseline. Of interest is participant 3, who exhibited a significant drop in noncompliance during baseline prior to receiving the prevention.

### **PBPT Does Produce Immediate Decreases in Tantrums Among Children Ages 1½-3 Years Old**

Figure 2 displays data for baseline and post-participation reports of daily frequency counts of tantrums. Mean rates of tantrums are also depicted for each condition and participant.

Overall, there was a clear downward trend from baseline to post-prevention for all participants. Three of the four participants displayed a relatively stable rate of variability from baseline to post-prevention, with the exception of participant 2, who exhibited no variability post-prevention.

Overall, one of the four participants exhibited decreased variability over the course of the study, which was considered meaningful. However, these shifts in trend are

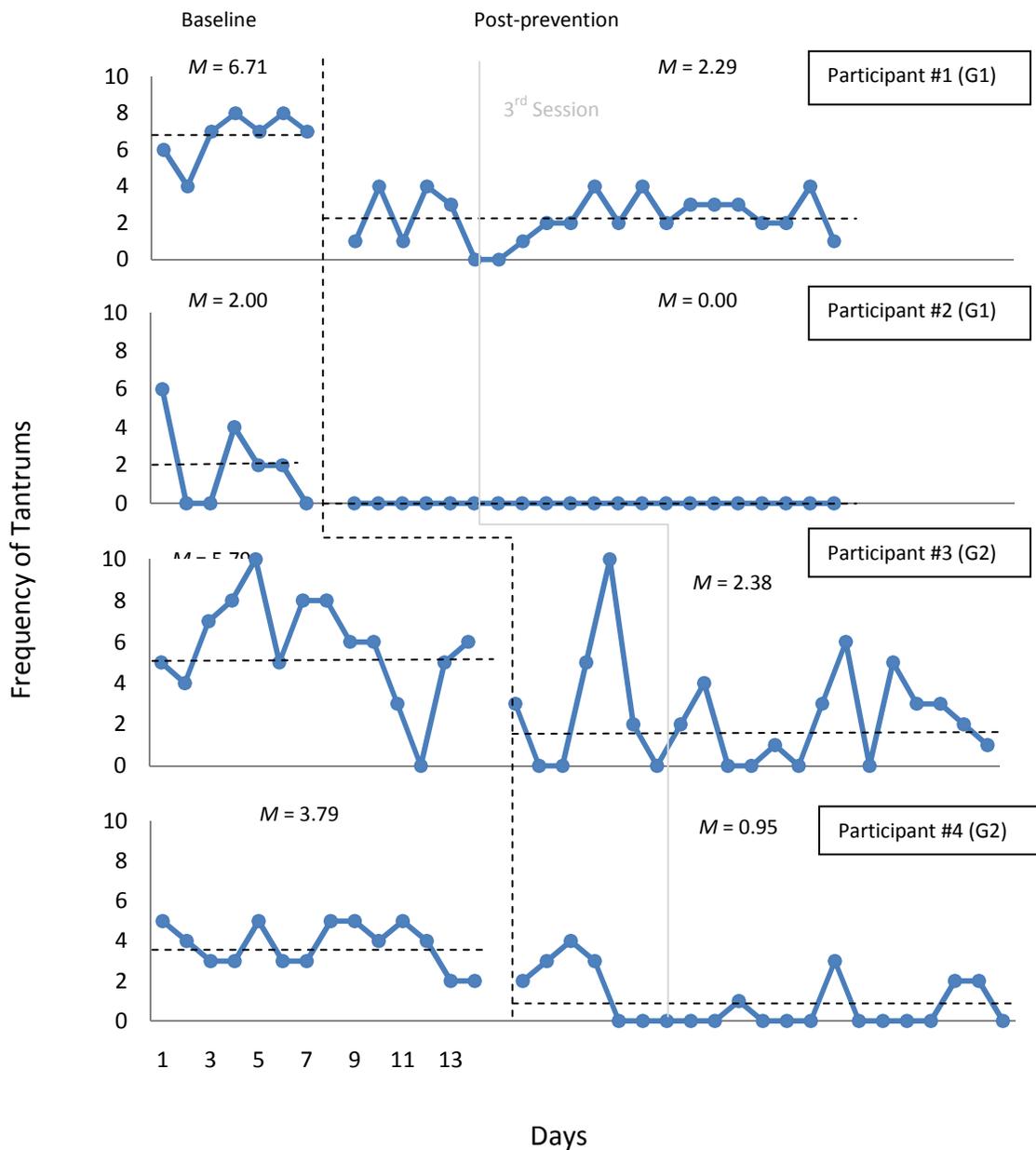


Figure 2. Home Record Card: Frequency of tantrums during the course of the study for all participants.

punctuated by several days of no tantrums during post-prevention, which was not observed during baseline for the majority of participants.

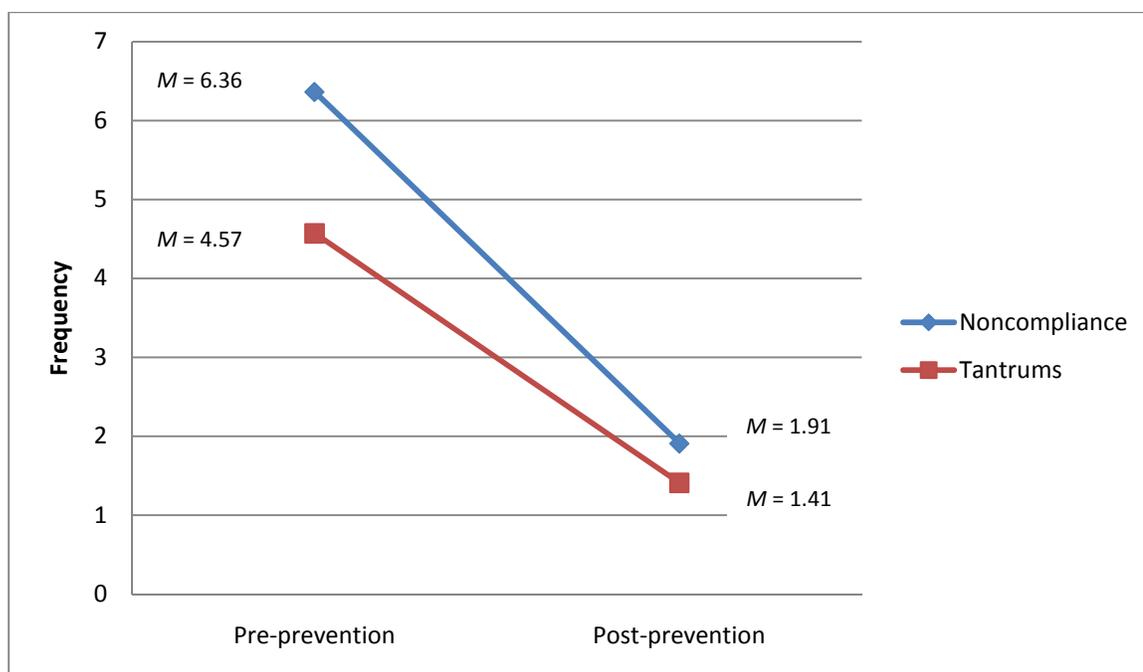
A clear decrease in the daily average rate of tantrums from baseline to post-prevention was seen for all participants. As depicted by horizontal condition average lines within Figure 2, all participants experienced a decrease in rate of tantrums over the course of the study that was consistent with expected outcomes. Observed shifts in condition averages range from 2.00-4.42. All observed changes were greater than an average rate of one occurrence per day and were therefore considered meaningful.

With regard to observed trends within the data, all participants exhibited a decrease in rates of tantrums from baseline to post-prevention. All participants also exhibited a higher amount of zero occurrence days during post-prevention relative to baseline. Of interest is participant 2, who exhibited a particularly unstable baseline trend with the most apparent treatment effects observed during baseline prior to receiving the prevention.

An alternative method for considering observational data is to derive condition averages that reflect the combination of the average rates of target behavior across all participants. Figure 3 depicts the average rates of noncompliance and tantrums observed across all participants. As can be seen, averaged rates of noncompliance and tantrums exhibit a decrease in rates of noncompliance and tantrums observed during post-prevention relative to baseline. Noncompliance rates decreased from 6.36-1.91 over the course of data collection while tantrum rates decreased from 4.57-1.41.

### **PBPT Does Produce Immediate Decreases in Scores on Standardized Measures of CP**

The Oppositional Defiant Problems DSM-oriented scale on the CBCL served as a standardized, objective measure of CP. Pre- to post-prevention CBCL data for all participants on this domain are displayed in Table 3. None of the participants reported clinical levels of problematic behavior at either pre- or post-prevention; however, 2 of the 4 participants reported borderline clinically significant symptoms pre-prevention. All participants reported a decrease in problematic behavior as reflected in standardized scores from pre- to post-prevention, including decreases from borderline clinically significant to typical rates of behavior for participants 1 and 2. All participants exhibited a decrease in points from pre- to post-prevention, with an average decrease of 7.5 points.



*Figure 3.* Average daily rates of noncompliance and tantrums during pre- and post-prevention for all participants.

Table 3

*CBCL Oppositional Defiant Problems Scale T-scores Pre- to Post-prevention for Each Participant*

Participant	Oppositional defiant problems: Pre-prevention	Oppositional defiant problems: Post-prevention
1 (G1)	67 (Borderline)	64 (Normal)
2 (G1)	67 (Borderline)	52 (Normal)
3 (G2)	64 (Normal)	55 (Normal)
4( G2)	59 (Normal)	56 (Normal)

Participants 1 and 4 exhibited decreases of three points each, while participants 2 and 3 displayed larger decreases (i.e., 15 and 9 point decreases, respectively). In terms of standard deviation (for *T*-scores,  $m = 50$ ,  $sd = 10$ ), participant 2 exhibited a decrease of 1.5 standard deviations while participant 3 exhibited a decrease of nearly one standard deviation.

The Total Intensity and Total Problems scores on the ECBI also served as standardized, objective measures of CP. ECBI data from pre- to post-intervention for all participants are displayed in Table 4. On the Total Intensity scale, 3 of the 4 participants exhibited scores that fell within the clinical range at pre-prevention. In contrast, the remaining participant exhibited a normal Total Intensity score. Following prevention, only one participant (participant 3) continued to report clinically significant problematic behavior. All participants reported a decrease in problematic behavior from pre- to post-

Table 4

*ECBI Total Intensity and Total Problems Scores Pre- to Post-prevention for Each**Participant*

Participant	Total intensity: Pre-prevention	Total intensity: Post-prevention	Total problems: Pre-prevention	Total problems: Post-prevention
1 (G1)	139 (Clinical)	101 (Normal)	20 (Clinical)	12 (Normal)
2 (G1)	139 (Clinical)	112 (Normal)	14 (Normal)	15 (Clinical)
3 (G2)	166 (Clinical)	136 (Clinical)	20 (Clinical)	12 (Normal)
4 (G2)	105 (Normal)	65 (Normal)	20 (Clinical)	8 (Normal)

prevention including decreases from clinically significant behavior to typical behavior for participants 1 and 2. It should be noted that while participant 3 continued to report clinical levels of problematic behavior from pre- to post-prevention, she still reported a 30 point decrease, indicating a significant decrease in problematic behavior over the course of the study. On the Total Intensity scale all participants exhibited a decrease in points from pre- to post-prevention, with an average decrease of 33.75 points.

On the Total Problems scale, 3 of the 4 participants exhibited scores that fell within the clinical range at pre-prevention. In contrast, participant 2 exhibited a normal Total Problems score. Following prevention, participant 2 was the only participant that reported a level of problems present that remained in the clinical range. Three of the four participants reported a decrease in their level of concern regarding their child's problematic behavior from pre- to post-prevention, including decreases from concerns on a clinically significant level to a typical level of concern for participants 1, 3, and 4. On

the Total Problems scale 3 of the 4 participants exhibited a decrease in points from pre- to post-prevention, with an average decrease of 6.75 points. Participant 2 exhibited an increase of just one point on the Total Problems scale from pre- to post-prevention, however, a one point difference qualified this score as clinical.

## DISCUSSION

The purpose of this study was to determine the degree to which a universal prevention program, already shown to yield long-term positive benefits, might also yield immediate effects in reducing rates of conduct problems (i.e., noncompliance and tantrums) displayed by typically developing young children. It was anticipated that PBPT would produce immediate decreases in noncompliance and tantrums, as well as in scores on standardized measures of CP among younger children. Overall, findings indicated that all four child participants displayed decreased rates of noncompliance and tantrums as predicted. Further, scores on standardized measures of CP yielded consistent decreases, suggesting the diminished presence of conduct problems. These results provided evidence that PBPT is effective for producing immediate decreases in the rates of noncompliance and tantrums, and in scores on standardized measures of CP among children ages 1½ to 3 years old. Thus, a major implication of this study is that PBPT, which has been shown to be effective in the prevention of childhood CP, also appears to provide parents immediate benefits in managing their children's CP.

### **Empirical Questions**

As predicted, each child participant exhibited diminished presence of conduct problems over the course of the study. This was demonstrated by decreased rates of noncompliance and tantrums as well as decreased scores on standardized measures of CP. The first two empirical questions, regarding observed rates of noncompliance and

tantrums, will be discussed together. The third and final empirical question, related to changes in standardized measures of CP, will be discussed subsequently.

### **Noncompliance and Tantrums**

All participants exhibited decreased rates of noncompliance and tantrums over the course of the study. Variability was observed with regard to the magnitude of changes observed, however, and was present across participants and characteristics of the data (e.g., course of the data, trends in the data, average rates observed across conditions). For example, as pointed out previously, participant 1 exhibited a very minor decrease in average noncompliance rates, across conditions, when compared to the other participants. Graphical analysis of the data indicated that all participants exhibited: (a) a greater number of zero occurrence days post-prevention than during baseline, (b) decreased average rates of behavior when baseline was compared to post-prevention (analysis of the level of the data), and (c) a downward trajectory in rates of noncompliance and tantrums across time (analysis of data trend). Additionally, decreased rates of variability and expected and timely changes (analysis of course) in the data were observed across conditions for most participants.

While these findings are positive, overall, and generally supportive of the short-term efficacy of PBPT, a few characteristics of the data warrant further attention. Specifically, it was noted that on three occasions, participants exhibited a clear decrease in rates of negative behavior, which failed to rebound to average condition rates, prior to condition shifts. This was problematic and suggested the presence of an unidentified confounding variable that influenced rates of target behaviors for three of eight cases.

More specifically, participant 3 exhibited a significant drop in noncompliance during baseline prior to receiving the prevention program. Similarly, participants 2 and 4 exhibited a decrease in rates of tantrums during the baseline phase that also failed to rebound prior to the condition shift. That behavior rates failed to return to baseline levels prior to the condition shift suggested that this change in the data may not have simply reflected data variability although it is unknown if such a rebound in the data would have been observed had the baseline condition been extended in these cases.

The reasons for these anomalies are unknown as factors that would be expected to cause this change could not be identified and such effects were not observed in over half of the cases. One possible explanation is that these participants displayed unanticipated treatment effects as a result of the self-monitoring that occurred in relation to baseline data collection. When collecting data via participant-observer method, a risk of participant reactivity is nearly always present. However, the other participants failed to exhibit such an effect despite the fact that self-monitoring was required of and would have been consistent across all participants. Mixed results such as these suggest that the presence of a confounding variable failed to consistently influence participants and that some unique participant characteristics caused participants to react differently to factors such as self-monitoring.

Such unique characteristics of participants could not be fully controlled or accounted for. However, this study did attempt to account for the presence of specific child psychopathology risk factors which were unique for each child participant. It is possible that the presence of such risk factors contributed to the differences observed

across cases in the data. As indicated previously, Table 2 provided a list of the identified risk factors present for each participant. As can be seen, participant 1 was the only participant that displayed attention problems as an identified risk factor. Participants 2 and 3 exhibited the greatest number of child psychopathology risk factors and participant 4 had the fewest risk factors, overall. It is possible that these risk factors affected the course of treatment for each participant and this may account for aspects of the data that are not readily explained.

In the event that this was the case, aggressive behavior was identified as a risk factor for only participants 2 and 3, and these participants also exhibited the greatest number of risk factors. Such factors may have contributed to the unstable baselines observed for these participants as behavior rates appeared more volatile for these children, overall.

Overall, it appears that attention problems may have contributed to one participant's struggles with noncompliance, while aggressive behavior may have contributed to two participants' unstable baselines. It also appears the more child psychopathology risk factors identified in a participant, the more unstable the baseline data.

An additional aspect of the data that was not consistently observed across participants was the very mild treatment effects that participant 1 exhibited in relation to noncompliance rates. While participant 1 exhibited a decrease in noncompliance rates that was anticipated, this change was the most minimal of all changes observed across participants and failed to suggest the magnitude of effect that would be meaningful

within a prevention context. In this case, it appeared that the intensity of the intervention was inadequate to yield significant change. However, participant 1 did exhibit a significant decrease in rates of tantrums which were addressed more directly by parents (parental commands were not utilized with tantrums as they were in compliance situations). As mentioned previously, it is possible that unique characteristics possessed by participant 1 yielded a lesser response to the standardized intervention. Participant 1 was the only participant that exhibited attention problems as a risk factor and it may be that this contributed to noncompliance rates. Said differently, for this participant, it may have been the case that noncompliance reflected inattentiveness to parent commands more so than explicit defiance to parental authority. A child that has difficulty attending to a command given by his or her parent is less likely to comply than a child without such attention deficits. Further, because these behaviors were addressed differently by parents, a child with attention difficulties may be more likely to struggle with compliance than with tantrums.

To summarize, observational data outcomes generally supported study hypotheses which suggested that prevention efforts would yield immediate changes in behavior. These findings align with previously observed longitudinal changes in child behavior. However, in a minority of cases, child responses were observed that could not be readily explained via the methods that were employed and the role of confounding variables in these cases could not be accounted for.

### **Standardized Measures of CP**

On the Oppositional Defiant Problems DSM-oriented scale of the CBCL, all participants reported a decrease in problematic behavior as reflected in standardized scores from pre- to post-prevention. This included a decrease from borderline clinically significant rates to normal behavior rates for participants 1 and 2, which was noteworthy.

On the Total Intensity scale of the ECBI, all participants exhibited a decrease in points from pre- to post-prevention, and on the Total Problems scale 3 of the 4 participants exhibited a decrease in points from pre- to post-prevention. Participant 2 exhibited an increase of a single point on the Total Problems scale from pre- to post-prevention; however, this minor shift qualified this score as clinically significant.

Standardized measures of CP were paper and pencil measures completed by parents and therefore reflect their opinions or perceptions of their child's behavior. While such measures may not convey actual shifts in child behavior, they are used as a typical aspect of clinical practice and represent the clinical norm in evaluating treatment progress. Twelve score changes were observed and all but one suggested that prevention efforts yielded positive immediate benefits. Thus, this data aligned well with shifts in actual behavior rates and suggested that parent perception was sensitive to actual changes that occurred among children's behavior.

### **Limitations**

One limitation of the current study was the limited generalizability of the research results. To the degree that the sample employed in this study represented the variability present in the overall population, results may be considered more or less generalizable.

However, no effort was made to assess the degree to which this sample could be considered a representative sample. Additionally, this study was intended to measure immediacy effects only; therefore, this study does not contribute to the growing body of evidence supporting PBPT as an empirically supported approach to universal prevention over time.

A second limitation of the current study was that the parents of the participants represented the only source of data collection. It is possible that parent responses and data collection efforts reflected biases, perceptions, or attempts to present their child in a certain manner. For example, parents may have rated checklists more conservatively or omitted HRC data in order to present their child in a socially desirable manner. It is possible that data would have appeared different if more objective sources of data were included during data collection.

Another limitation of the current study was the decision to conduct condition shifts following an a priori established timeline rather than making such shifts in relation to characteristics of the data. Six of the eight baselines were relatively stable, with increasing or maintaining rates of CP prior to prevention; however, 2 of the 8 baselines were unstable, rendering it more difficult to interpret the effects of prevention programming. A consequence of conducting calendar-based condition shifts was that unstable baseline performances were neglected experimentally. Thus, decreasing rates of target behaviors during baseline conditions could not be explained as a result of treatment effects. For example, as mentioned previously, self-monitoring during baseline data collection may have resulted in treatment effects occurring prior to condition shifts for

certain participants. It is possible that treatment effects would have been observed post-prevention had these participants experienced extended baseline conditions until data trends were stable. Relatedly, for some participants, stable baseline trends did not appear to be established at times. In such instances, it was more difficult to discern clear trends in the data due to the variability that was present. Possible treatment effects would have been more apparent had participants been exposed to the intervention following baseline stabilization (i.e., formation of a clear trend and lowered variability). As a result of these data characteristics, data interpretation was rendered ambiguous in a limited number of instances.

Finally, it is possible that the intensity of treatment was inadequate for certain participants. In the current study, treatment was offered at one level of intensity and was quite brief. This was justified because the study was designed to evaluate the merits of a specific prevention program (PBPT). However, one participant exhibited a limited response and this suggested that a more intense version of the program might have yielded improved effects for that child. However, varied levels of intervention intensity was not empirically evaluated in the study.

### **Implications and Future Directions**

This study provided an initial indicator of the effectiveness of PBPT in altering problematic behavior among young typically developing children. While this is not the intended purpose of PBPT, demonstration of immediacy effects would seem critical in the maintenance of long-term prevention; however, more research in this area needs to be conducted in order to verify the current results.

This study yielded a number of implications for future studies related to PBPT. Future researchers should focus on establishing the generalizability of findings. This could be accomplished by increasing the sample size. Employment of a larger sample and utilization of group methodologies would likely yield more generalizable outcomes. Alternately, researchers could also engage in strategic sampling of varied population characteristics to ensure a more representative sample. Strategies such as these would aid in data interpretation and more fully convey the immediate effects of universal prevention efforts.

Future studies could also utilize multiple sources or more objective sources of data collection in order to prevent parental bias or perceptions from altering the data. To accomplish this, researchers could assess children's behavior across multiple contexts or utilize multiple informants and incorporate methods to establish the reliability of study findings.

Additionally, future studies employing small sample methods should better control for the presence of confounding variables by conducting condition shifts in a manner that is contingent on the characteristics of the data and by emphasizing the importance of stable baseline trends. This would aid in revealing unanticipated treatment effects and allow for more accurate interpretation of results.

Finally, it is possible that child psychopathology risk factors uniquely affected the course of treatment for each participant. Future research should continue to carefully assess unique childhood factors such as the presence of risk factors and incorporate study methods that more fully account for their impact on intervention effects.

## **Conclusion**

Four dyads consisting of a mother and child participated in the study regarding immediacy effects of PBPT on altering the conduct problems (i.e., noncompliance and tantrums) displayed by typically developing young children. Overall findings indicated that all four participants displayed decreased rates of noncompliance and tantrums, as well as improved scores on standardized measures of CP, following a brief PBPT prevention session. This study provided pilot data that was supportive of the effectiveness of PBPT in immediately altering behavior among young typically developing children. However, as noted, weaknesses were present in the methodology of the study and additional research in this area needs to be conducted in order to replicate these findings.

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APPENDICES

Appendix A:

Flyer



Appendix B:  
Phone Script

## Phone Script

**Instructions:** 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 3 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

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:  
Home Record Card

Start date: \_\_\_\_\_

Day	Target Behaviors						
	Noncompliance (after given two chances to comply)	Tantrums (scream, cry, yell, flopping, excessive emotional upset)	Verbal Aggression (rude talk, names, threats, cursing, insults)	Physical Aggression (hit, kick, bite, pinch, spit, throw, push, etc.)			
1							
2							
3							
4							
5							
6							
7							
Total							

Appendix E:  
Intervention Handout

## Three Simple Steps to Success

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

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

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

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

**Step 3: Use timeout as an effective consequence to help your child follow 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. If your child begins to obey, give praise and encouragement! If your child isn't obeying, repeat the command.
  - Wait 5 seconds after the second command. If your child obeys, provide praise. If your child does not obey, place them in timeout and say, "Because you didn't (desired behavior), you have to go to timeout. Sit on this chair and be quiet."
  - Remember to:
    - \* Use an adult-sized chair in a corner.
    - \* Have your child stay in timeout for 2 minutes.
    - \* Don't allow your child to get out of timeout until they have been quiet for 30 seconds.
  - Make sure your child finishes the original task immediately after timeout!
  - Timeout is time away from everything: no talking, playing, watching TV, eating, 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.