IMPROVING THE PARENT-CHILD RELATIONSHIP IN ADHD:

A PRETEND PLAY INTERVENTION

by

CLAIRE E. WALLACE, M.A.

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Department of Psychological Sciences

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We hereby approve the thesis/dissertation of

Claire E. Wallace, M.A.

candidate for the degree of Doctor of Philosophy.

Committee Chair

Sandra Russ, Ph.D.

Committee Member

Norah Feeny, Ph.D.

Committee Member

Elizabeth Short, Ph.D.

Committee Member

Jill Korbin, Ph.D.

Date of Defense

27 March 2017

We also certify that written approval has been obtained

for any proprietary material contained therein.

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Abstract

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CLAIRE E. WALLACE, M.A.

The parent-child relationship is often strained within the Attention-Deficit/Hyperactivity Disorder (ADHD) population. Many parents struggle to find a balance between managing challenging behavior and fostering positive relationships with their children. The present study was designed as a parent-child relationship intervention. Twenty mothers and their sons with ADHD, ages 6-9, participated in a structured, play-based intervention. Facilitators coached mothers over three sessions to use pretend play interactions with their sons as a relationship-building tool. They were also asked to participate in home play sessions between study visits. Ten families were initially assigned to the wait list control condition and later completed the intervention.

The study's primary aim was to establish feasibility of the intervention. Feasibility was assessed via families' attendance and completion of weekly home play sessions as well as a parent acceptability survey and the Client Satisfaction Questionnaire (CSQ). A secondary aim was to investigate preliminary efficacy of the intervention. Multi-method assessment was used to evaluate improvements in the parent-child relationship and included parent self-report (Parent-Child Relationship Inventory, Parent Report of Parental Behavior Inventory, parent-child relationship rating, daily conversation rating, Activities with My Child worksheet); child self-report (Social

Adjustment Inventory for Children and Adolescents); and interactive parent-child tasks in the laboratory (Tangram task, Free play).

Feasibility analyses indicated that mothers perceived the intervention as enjoyable and beneficial to the parent-child relationship. Every mother-son dyad that began the intervention completed all sessions. Efficacy analyses showed significant improvements in the parent-child relationship across self-report measures and coded laboratory tasks. Improvements included more maternal support for children's autonomy, fewer problems with discipline, greater engagement and involvement in shared activities, better communication, and more positive affect between mothers and sons. Taken together, findings suggest that this play-based intervention is feasible and may result in improvements in the parent-child relationship among young children with ADHD.

Introduction

A common co-occurring problem in families of children with Attention-Deficit/Hyperactivity Disorder (ADHD) is a low quality parent-child relationship. For the purposes of this study, the parent-child relationship can be defined in terms of the behavioral and affective realms, each with its own dimensions. Important behavioral aspects of the parent-child relationship include parental intrusiveness, encouraging/discouraging autonomy, use of harsh punishment, shared parent-child activities/interests, and engaging in conversation. Important affective or emotional aspects of the parent-child relationship include displays of affection, empathy, rejection, and indifference.

Children's behavior problems as well as parents' own behaviors contribute to significant strain in the relationship between parents and their children (e.g. Gau & Chang, 2013). Many parents of children with ADHD report that the majority of daily verbal interactions with their children consist of reminders and corrections (Wallace & Manos, 2015). Many also report high levels of frustration with their children's behaviors as well as stress caused by the constant need to monitor and manage their children. Children with ADHD tend to require higher levels of parental monitoring than typically developing children, which can be a source of significant parental stress. In an environment of increased parental stress and conflict between parents and children, positive interactions and shared activities/interests can be diminished. Despite the high prevalence of parent-child relationship strain among families of children with ADHD, the relationship itself is rarely directly addressed in treatment.

The purpose of the present study was to investigate the feasibility of a parent-child relationship intervention for children with ADHD and their parents. Parents and children completed a three-session, pretend play-based intervention aimed at improving the quality of parent-child interactions in a setting promoting positive affect and mutual enjoyment. The primary question was whether a play-based intervention would be perceived as acceptable and effective by parents. If parents viewed the intervention as worthwhile and beneficial to their relationships with their children, additional research could further investigate its efficacy in a larger sample. The secondary aim of the present study was to explore preliminary efficacy of the parent-child play intervention, compared to a waitlist control, in improving the parent-child relationship.

Challenges to the Parent-Child Relationship in ADHD

A close relationship with an effective parent is associated with resilience when children are confronted with negative life events and stressors (Masten & Coatsworth, 1998). In families of children with ADHD, both effective parenting and a close parent-child relationship can be difficult to achieve. Parents of children with ADHD face significant stress associated with managing their children's behavior. Research has identified a complex interplay among parenting stress, negative parenting behaviors, and parent-child relationship strain in families of children with ADHD.

Parental stress. Parenting stress is associated with both parenting practices and child development (Deater-Deckard, 2004). In the context of ADHD, management of children's problem behaviors contributes to mothers' and fathers' stress. Overall parenting stress can be conceptualized in two domains. Parent domain stress refers to factors associated with the parent's own internal experience, such as making sacrifices to

meet child's needs. Child domain stress refers to factors arising directly from the child, such as exhibiting behaviors that annoy or bother the parent (Theule, Wiener, Tannock, & Jenkins, 2013). One study differentiated these two sources of stress among parents of children with ADHD (Theule et al., 2013). When the sources of stress were separated, children's symptom clusters were differentially associated with parent and child domain stress. While both inattentive and hyperactive/impulsive symptoms affected parenting stress, inattention was most strongly linked to parent domain stress, and hyperactivity/impulsivity was most strongly linked to child domain stress. Authors proposed that because inattention was not associated with child domain stress, children with primarily inattentive symptoms cause less overall family disruption than children with hyperactive/impulsive symptoms. As a group, however, parents of children with any presentation of ADHD had significantly higher levels of overall parenting stress compared to nonclinical controls.

Further examination of variables related to parenting stress in managing ADHD has identified both parent and child factors. Parental psychopathology, particularly depressive symptoms, is associated with parenting stress (Chang, Chiu, Wu, & Shur-Fen Gau, 2013; Theule et al., 2013). While parents' gender is not associated with level of parenting stress, child gender moderates the relation between parenting stress and ADHD (Theule et al., 2013). Less parenting stress is associated with girls with ADHD compared to boys. Another child factor related to parenting stress is a comorbid psychological disorder. Parenting stress is higher when ADHD is comorbid with other conduct problems (Theule et al., 2013). In addition, parents' self-reported self-esteem correlates with a child's level of oppositional defiant behavior within ADHD (Johnston, 1996).

Parents who reported lower self-esteem had children with more oppositional behaviors. In a study of preschool children with ADHD, child temperament related to parenting stress (Healy, 2011). Temperamental impulsivity related to high levels of maternal parenting stress, even controlling for ADHD symptom severity. One hypothesis presented was that children's temperament might impact both their direct level of impairment via ADHD symptoms and their indirect level of impairment via increasing parenting stress, which can lead to poor behavior management.

Negative parenting. How can parenting stress affect a child's level of impairment? One proposed mechanism is through the use of negative parenting behaviors. Negative parenting includes behaviors such as low monitoring/supervision, low warmth/affection, and high intrusiveness. It also includes coercive parenting, in which the child exhibits a problem behavior, the parent reacts with strong emotions, the child escalates, and the parent either withdraws or continues to escalate (Patterson, 1982). The coercive parenting cycle creates an environment in which negative affect is prominent and children learn to control parents through escalating behaviors. Parenting stress is widely associated with negative parenting behaviors, particularly among parents of children with ADHD (Johnston & Mash, 2001). High parenting stress among mothers of preschoolers with ADHD has been associated with punitive and inconsistent parenting and lower levels of positive parenting (Healy et al., 2011). Parents of children with ADHD use more negative reactive parenting and fewer positive parenting strategies than parents of typically developing children (Johnston, 1996). In addition, more coercive parenting exists in families of boys with hyperactive behavior (Buhrmester, Camparo, Christensen, Gonzalez, & Hinshaw, 1992).

A longitudinal study of preschool boys with ADHD revealed that parenting behaviors of mothers and fathers are differentially associated with child outcomes (Keown, 2012). Using rating scales and observation of parent-child interactions, the study measured three areas of responsive parenting: observed sensitivity, warmth/positive regard, and intrusiveness. Results showed that overall parenting responsiveness in parent-child play interactions related to ADHD symptoms. For both parents, high sensitivity, as defined by observational ratings of parents' responsiveness to children and attunement to their mood and interests during play, predicted lower levels of children's inattention over time. Sensitive parenting is important to children's development of attention and organization skills. For fathers, low sensitivity predicted higher levels of inattention. The authors suggest that in some cases, children's poorly regulated behavior may result from their fathers' low sensitivity to children's cues and difficulty adjusting their own behavior to synchronize with their child's, specifically during play interactions. Fathers' high warmth/positive regard related positively to children's attention, while mothers' low warmth related to increased inattention. Finally, intrusive parenting behaviors during play, by both parents, related to children's inattention and additionally related to children's hyperactivity/impulsivity among intrusive fathers. These dimensions of responsive parenting are important predictors of children's functioning within ADHD. The results of this study also demonstrate that parent behaviors observed during parent-child play interactions meaningfully relate to aspects of children's functioning.

A study of adolescents with ADHD proposes that negative parent-child interactions that begin during childhood can affect children's functioning, as well as the parent-child relationship, into adolescence (Gau & Chang, 2013). The sample of Chinese

adolescents with ADHD was divided into a "persistent" group who met full diagnostic criteria and a "non-persistent" group who had been diagnosed as children but no longer met full criteria. Both groups, and their mothers, reported more behavior problems at home, less active interactions with mothers, and lower perceived family support compared to adolescents without ADHD. They also reported less maternal affection and more overprotective/authoritarian monitoring. Given the continued family and relational difficulties reported in the "non-persistent" ADHD group, the authors conclude that childhood ADHD may alter the family processes or mother-child interactions in ways that carry long-lasting negative effects as children age. In addition, more severe childhood inattentive symptoms were associated with negative parenting/family factors such as less maternal affection, more maternal control, less interaction with mothers, and less perceived family support. The authors note that in Chinese culture, inattention is a sign of disobedience and mothers are often blamed for children's behavior (Gau, 2007). Despite cultural differences in the salience of particular symptoms, results of this study contribute to our understanding of the negative parenting behaviors and parent-child interactions found in families of children with ADHD.

Parent-Child Relationship Strain. The presence of parenting stress and negative parenting behaviors are associated with lower quality parent-child relationships (Morgan, Robinson, & Aldridge, 2002). These associations are readily observable among children with ADHD. Parents of children with ADHD rate the relationship with their child as more negative than do parents of children without ADHD (Gerdes, Hoza, & Pelham, 2003). A study of 11-year-old twin pairs indicated that parent-child conflict is a common factor among children with comorbid externalizing disorders (Burt, Krueger, McGue, &

Iacono, 2003). They conclude that the genes common to children with externalizing disorders may influence conflict. As early as preschool, parents of children with ADHD report parent-child interactions characterized by constant struggles and high negative affect toward the parent (Keown, 2012).

In light of gender differences found between parenting stress related to boys versus girls with ADHD, research has begun to examine mother-child and father-child relationships separately. Longitudinal analyses have indicated that children's ADHD negatively affects the mother-child relationship in terms of children's report of perceived rejection (Lifford, Harold, & Thapar, 2008). This suggests that ADHD symptoms may contribute to a decline in quality of the mother-child relationship. In contrast, children's report of perceived rejection by fathers negatively affects ADHD symptoms. Thus, it is possible that in the context of ADHD, aspects of the father-child relationship can affect symptom presentation. Additional negative effects specific to the father-child relationship have been demonstrated cross-culturally. In a sample of Taiwanese children and adolescents with ADHD, fewer active interactions with fathers and less affection from fathers were associated with children's ADHD presentation (Chang et al., 2013). Impaired father-child relationships among children with ADHD were associated with ADHD symptoms, paternal depressive symptoms and neurotic personality, child comorbid disorders, and increasing child age.

At a theoretical level, there is a clear link among parenting stress, negative parenting behaviors, and behavior problems. However, the directionality of the relationship between parenting factors and ADHD has been difficult to establish. Johnston and Mash (2001) proposed that family factors such as negative parenting might

be linked to conduct problems, with ADHD acting as a risk factor or vulnerability for negative parenting. Families of children with ADHD and comorbidities are characterized by more negative parenting and even poorer parent-child relationships than ADHD alone (Burke, Pardini, & Loeber, 2008). Family factors are strongly linked to conduct problems, but they are also related to ADHD. One possible mechanism may be that ADHD symptoms make children more vulnerable to poor parenting practices, such as inconsistent discipline, that are related to conduct problems. Another mechanism may be that ADHD causes a breakdown in effective parenting practices and elicits harsh or reactive discipline.

Causal relationships among parent, child, and family factors are difficult to establish and have not yet been supported in research (Lifford, Harold, & Thapar, 2009). However, the consistently higher rates of parental stress and poor parent-child relationships among families of children with ADHD merits further investigation of causal mechanisms. Evidence thus far also suggests that the parent-child relationship is an important factor to consider in the treatment of ADHD, as it is intertwined with negative parenting and family stress. Given that poor parent-child relationship quality is so prevalent among these families, there is a need for research to directly evaluate evidence-based strategies for improving relationship quality.

While the parent-child relationship may impact children's functioning at any age, research supports early childhood seems to be a foundational period in the development of parent-child interactional patterns. Even children whose ADHD symptoms become subclinical over time experience lasting difficulties in the parent-child relationship (Gau

& Chang, 2013). From a preventative perspective, interventions focused on younger children and their parents are likely to be more effective in creating lasting change.

Parent-Child Interventions in ADHD

Recent research has called for interventions that address both parenting stress (Healey et al., 2011; Theule et al., 2013) and the parent-child relationship (Gau & Chang, 2013). Reduction of parenting stress by teaching problem-solving skills, self-care strategies, and support seeking are associated with increased efficacy of interventions. Parent Management Training is one such approach (PMT; Kazdin & Whitley, 2003). Interventions that teach parents effective behavior management may indirectly improve the parent-child relationship through an overall reduction in parent-child conflict (Gau & Chang, 2013). It may also be useful to directly target the parent-child relationship in order to facilitate associated decreases in parenting stress.

Behavioral Parent Training. One of the interventions with strong support for treating ADHD is behavioral parent training. Behavioral parent training is the most common term used to refer to parent training programs as a whole. It was developed as a way to address disruptive behavior in children. It has long been recognized that among children with behavior problems, poorer parenting skills are one of the most robust predictors of the development of long-term negative outcomes (Chamberlain & Patterson, 1995). Behavioral parent training interventions teach parents behavior management techniques aimed at increasing the efficacy of positive parent behaviors and decreasing the frequency of negative parenting behaviors.

Most parent training programs share the same core elements but differ on the delivery system (Chronis, Chacko, Fabiano, Wymbs, & Pelham, 2004). Programs

typically begin with psychoeducation and introduction of behavior management principles. Parents learn to identify and manage antecedents and consequences of children's problem behaviors. They learn techniques such as home-school Daily Report Cards, praise and rewards, and problem-solving techniques to increase positive child behavior. Parents also learn how to effectively manage problematic behaviors with time-out, response-cost systems, and effective commands.

Research backing behavioral parent training has shown efficacy for children ages three to fourteen (Chronis et al., 2004). It has been classified by multiple reviews as a well-established, evidence-based treatment according to the American Psychological Association (APA) standards (Lundahl, Risser, & Lovejoy, 2006; Pelham & Fabiano, 2008; Pelham, Wheeler, & Chronis, 1998). Among over 30 identified parent training studies, intervention consistently improved observed negative behaviors of parents and children as well as parent ratings of children's problem behavior (Pelham & Fabiano, 2008; Pelham et al., 1998). Domains of child improvement include self-control and compliance with rules (Power, Russell, Soffer, Blom-Hoffman, & Grim, 2002). In addition, parent training programs have been associated with decreased parental stress and increased child social behavior (Chronis et al., 2004).

The behavioral parent training model continues to expand to address the needs of specific subgroups of children and families. The Coaching Our Acting-out Children: Heightening Essential Skills (COACHES) program engages fathers of children with ADHD by incorporating a recreational parent-child activity into treatment (Fabiano et al., 2012). Fathers participate in group-delivered parent training for the first hour of the session, then fathers join their children for a soccer game to practice parenting skills such

as labeled praise and effective commands. The COACHES program has shown an increase in fathers' frequency of praise and a decrease in the amount of negative talk and father-rated intensity of child behavior problems compared to a waitlist control.

Most research on behavioral parent training has measured child symptom reduction as a primary outcome. The parent-child relationship has not been a focus of direct intervention or direct measurement when interventions involve only the parents. Despite lack of direct evidence, there is reason to believe that behavioral parent training may improve the parent-child relationship. Parental stress often decreases as a result of parent training intervention. As parents become more effective in discipline, children respond with general decreases in problem behaviors. Predictable rules and consequences may create a state of less conflict in the home, which may in turn relieve stress within the parent-child relationship. Future research is needed to determine benefits of behavioral parent training to parent-child relationships. It is possible that these established interventions already contain the necessary elements for improving the parent-child relationship, such as teaching parents to avoid harsh punishment, engage in conversation, and demonstrate their affection through labeled praise. However, until the parent-child relationship is measured in the context of an intervention, the state of the parent-child relationship before and after treatment remains unknown. In families where parent-child relationships are poor, more direct relationship intervention is likely necessary.

Parent-Child Interaction Therapy. ADHD symptoms can affect children from a very early age, and symptoms are often present beginning in the preschool years. When symptoms begin at these early ages, parents may begin to use negative parenting strategies that can continue to affect their child's behaviors and their relationship with

their child into adolescence (Gau & Chang, 2013). For parents of preschool-age children with symptoms of ADHD, behavioral treatment is considered the most appropriate first-line intervention (Jones, Daley, Hutchings, Bywater, & Eames, 2007). Parents of children this young (ages 3-5) are typically much more hesitant to treat their children with medication before implementing behavioral interventions. Parent-Child Interaction Therapy (PCIT; Eyberg & Matarazzo, 1980; Hembree-Kigin & McNeil, 1995) is one of several behavioral interventions developed specifically for preschool-age children and their parents. It was originally designed specifically to treat oppositional or defiant behaviors in young children with a combination of child-directed and parent-directed interaction modules. The Child-Directed Interaction (CDI) module teaches parents play therapy skills to improve the parent-child relationship. It focuses on the use of modeling and non-directive play to increase parents' positive attention to their children. The Parent-Directed Interaction (PDI) module teaches problem-solving skills for behavioral problems. This phase is very similar to behavioral parent training, as it addresses behavioral principles such as using direct commands and delivering consistent consequences for misbehavior (Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998).

While originally developed for ODD and CD, PCIT has been extended to the treatment of children with ADHD. In an early controlled trial with a sample in which 66% of the boys had comorbid ADHD, children in the PCIT intervention group had lower levels of problem behavior at outcome and at a 4-month follow-up (Schuhmann et al., 1998). Both mothers and fathers also made significant improvements in parenting behavior. Parents interacted more positively with their children, followed the child's lead better in play, praised children more often, and were less critical of their children. In

addition, both mothers and fathers felt more confident in controlling their children's behavior and less distressed about their child, and mothers in particular reported decreases in parent-domain stress. A measure of parent satisfaction indicated that parents were highly satisfied with PCIT. This may be an important factor in considering which intervention to select for individual families, as the structure of child involvement may appeal to some parents who are resistant to parent-only treatments.

The above study alluded to the parent-child relationship but did not directly define or address it in measurement or in treatment. The quality of parent-child social interactions was measured with the Dyadic Parent-Child Interaction Coding System-II (DPICS-II; Eyberg, Bessmer, Newcomb, Edwards, & Robinson, 1994), which codes parent and child verbalizations, vocalizations, and physical behaviors. The DPICS-II measures some domains of the parent-child relationship, such as engaging in conversation and parental intrusiveness. However, it misses other important domains such as encouraging/discouraging autonomy, shared parent-child activities, and displays of empathy. Results showed that parent-child interactions were more positive following PCIT. Parents delivered more verbal praise, followed the child's lead more often, and spoke less critically to their children. It is possible that PCIT also produces positive outcomes in the domains of the parent-child relationship not measured. More thorough and direct measurement is required to determine the efficacy of PCIT in improving the parent-child relationship. In addition, measuring the parent-child relationship after each module of PCIT would allow identification of the mechanisms that produce change in the relationship. For example, does the relationship improve as a result of parents following the child's lead during the Child-Directed Interaction (CDI) module, or does the

consistency and clarity of expectations produced in the Parent-Directed Interaction (PDI) portion allow for greater relationship change?

Studies assessing the efficacy of PCIT have typically included children with a range of externalizing disorders. One study included 24 mother-child dyads in which the children, ages 2.5 to 7, were diagnosed with ODD, CD, ADHD, or a combination of the three (Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993). The fourteen-week intervention compared a group that received the PDI module before the CDI module to a group that received the CDI module first. CDI is typically delivered first in the intervention, based on the idea that children will respond better to parental discipline within the context of a positive parent-child relationship. Mothers also tend to be more effective, less negative disciplinarians if they have a knowledge base for developing a relationship with their child through play (Dowdney & Pickles, 1991). The study found that families in both groups improved to the normal range for compliance, conduct problems, activity level, and maternal stress upon completion of the program. When the groups were compared to each other, children of parents in the PDI-first group showed decreased behavior problems when families switched modules at mid-treatment. This decreased level of behavioral problems compared to the CDI-first group was maintained at termination, in addition to higher levels of maternal satisfaction with treatment. While these findings support the importance of behavioral management training treatment of child behavior disorders, the other gains shown at the end of treatment (e.g. maternal stress, activity level) required the completion of both modules. Gains were also made for both groups in children's self-esteem and internalizing problems, and all gains were maintained at a 6-week follow-up (Eisenstadt et al., 1993).

The CDI module of PCIT is a more direct parent-child relationship intervention than any of the other parent training program approaches. While PCIT studies have not directly measured parent-child relationship change, the vast number of positive behavioral outcomes indicates that relationship change is likely to occur. In addition, its parent-rated acceptability and satisfaction rates are high. PCIT has great potential for families who need both behavioral skills training and relationship building elements in treatment.

Incredible Years Parent Training. Like PCIT, the Incredible Years Parent Training program (Webster-Stratton & Hancock, 1998) was designed to target parents of preschool children at risk for ODD, CD, and ADHD (Jones, Daley, Hutchings, Bywater, & Eames, 2007). It focuses on parenting skills that help promote children's emotional development. Given the emotional dysregulation and resulting coercive parenting cycle that is prevalent in children with externalizing behaviors, the Incredible Years intervention aims to break this negative interaction cycle between parents and children. Parents and children participate in separate group interventions. Parent interventions address overall positive parenting and include topics such as teaching children to problem-solve, emotion regulation strategies, and child coaching (Webster-Stratton, Reid, & Beauchaine, 2011). Child groups include topics such as following directions, identifying emotions, managing anger, and making friends. Groups meet weekly for approximately twenty weeks.

The Incredible Years intervention has been found to decrease inattention and hyperactive/impulsive symptoms compared to a wait list control group (Jones et al., 2007). The same study also found clinically significant changes in parents' ratings of

their children's negative behavior. Follow-ups were conducted at 6, 12, and 18 months post-intervention for the 50 children whose parents received the Incredible Years intervention. Results showed that improvements in ADHD symptoms observed at termination of the program were maintained at each of the follow-ups, with 57% of participants maintaining scores below the clinical cut-off for ADHD symptoms on the Conners rating scale (Jones, Daley, Hutchings, Bywater, & Eames, 2008). Another study specific to children ages 4-6 with ADHD showed that mothers in the treatment condition used more praise and encouragement and more appropriate discipline than mothers in the waitlist control group (Webster-Stratton, Reid, & Beauchaine, 2011). Parent-child relationship variables have not been measured in Incredible Years studies to date. However, given significant improvements in parenting practices observed in the Incredible Years program, it is possible that changes in the parent-child relationship also occur. It is important to study this relationship variable in young children, as early intervention that is sustained over time may promote more adaptive functioning as children age and are supported by a healthy parent-child relationship.

Pretend Play Intervention

A final category of programs for improving the parent-child relationship is play intervention. PCIT incorporates a parent-child play module into treatment, but a different class of interventions focuses on play as the primary mechanism of change. Play can be utilized both as a treatment tool and as an assessment tool to inform treatment (Short, Noeder, Gorovoy, Manos, & Lewis, 2011). In the realm of the parent-child relationship, assessment of parent-child play interactions may allow clinicians greater insight into processes in the relationship that are not captured by parent self-report measures. A play-

based assessment may also allow the clinician to tailor treatment to individual families who may need targeted relationship-based work as a part of the treatment of ADHD.

Targeted Play Interventions. Some research has developed targeted play interventions to improve various areas of children's adaptive functioning. The play intervention in the present study is based on the play intervention manual from Sandra Russ's research group (Russ, Moore, & Farber, 2004). Intervention studies using Russ's manual have demonstrated improvements in children's pretend play skills and creativity (Moore & Russ, 2008; Russ, Moore, & Farber, 2004; Russ, Dillon, Fiorelli, & Burck, 2010). Overall, these targeted play intervention studies have shown that short-term pretend play interventions can improve children's play skills and divergent thinking abilities.

Play and ADHD. The key cognitive processes that occur during play include fantasy/make-believe, symbolism, organization of a narrative, and divergent thinking (Russ, 2004). Through play, children develop cognitive skills such as perspective taking, problem solving, and producing new ideas. Various studies have linked pretend play to interpersonal skills such as perspective taking (Ashaibi, 2007), empathy (Seja & Russ, 1999), development of relational schemas (Fromberg, 2002), and prosocial behavior (Fehr & Russ, 2013). Many of these established correlates of pretend play are relevant to children with behavior problems. Researchers have noted that the symptoms of ADHD – inattention, hyperactivity, impulsivity, noncompliance, and antisocial behaviors – affect how children play (Alessandri, 1992). Children with ADHD engage in less sustained play, jumping from one theme or activity to the next (Alessandri, 1992). They also exhibit disruptive behaviors when confronted with an externally imposed transition

within play. Finally, their play is more immature than that of their typically developing peers, with more functional and sensorimotor aspects than symbolic elements. Children with ADHD often struggle with perspective-taking in the social realm and with problem solving and coping in the face of emotional dysregulation. These correlates of pretend play may be important targets of intervention. A play-based assessment of ADHD may be useful in identification of areas in need of intervention (Short et al., 2011). By isolating areas of weakness such as attentional control or joint attention, intervention could be customized to meet individual children's developmental needs. Further, delivering behavioral interventions through play may increase children's receptivity to the intervention.

Emotion regulation is an important domain of adaptive functioning among children with ADHD. The cognitive components of pretend play (imagination and organization) relate to emotion regulation in school-aged children (Hoffman & Russ, 2012). In preschool samples, comfort in play, measured as time spent engaging in pretend play, relates to greater emotional understanding and emotion regulation (Galyer & Evans, 2001; Lindsey & Colwell, 2003). Greater frequency and variety of affect expression in play as well as frequency of positive affect in play also relate to better emotion regulation in children (Hoffman & Russ, 2012). In another study, greater frequency of affect expression in play was associated with higher scores on a teacher report of emotion regulation (Moore & Russ, 2008). Children who are able to express more affect in their play also have better coping strategies (Christiano & Russ, 1996) and less anxiety (Grossman-McKee, 1989), allowing them to better process emotions in daily life and cope with negative affect.

Research has supported the predictive power of pretend play in shaping children's self-regulation skills. In a longitudinal study of 3-4 year old children, observed complex/mature sociodramatic play predicted children's positive performance during clean-up activities over a five-month interval (Elias & Berk, 2002). Children who exhibited greater frequency of interactive and imaginative play displayed better self-regulation, as measured by on-task behavior when asked to clean up the classroom. In contrast, solitary dramatic play among children predicted poorer performance during clean-up activities. When children were divided into temperamental groups of high-impulsivity and low-impulsivity, complex sociodramatic play predicted future clean-up performance only in the high-impulsivity group. Findings suggest that interactive and imaginative play may be especially important in shaping self-regulatory skills among children who display more impulsive tendencies.

Parent-Child Play. Pretend play has strong ties in the research literature to a variety of areas of adaptive functioning relevant to children with ADHD. Given the relations between pretend play and problem solving, coping, and regulation, future research in this area has a strong theoretical basis for the use of play in interventions. Evidence also suggests that involving partners in play may further promote the development of adaptive functioning. Vygotsky asserted that children who operate within the zone of proximal development while learning a task are best poised for growth and development in that area (Vygotsky, 1930–1935/1978). This idea supports the possible efficacy of parent-child play interventions in which the parent scaffolds the child's development in an activity through play (O'Neill, Rajendran, & Halperin, 2012). Play between a parent and an infant has been found to provide an arena for the development of

affect regulation as well as social and cognitive skills (Tamis-LeMonda, Uzgiris, & Bornstein, 2002). Further, during infancy and progressing into childhood, parent-child play encourages the development of joint attention (Mundy & Willoughby, 1996). A parent-child play intervention could accomplish two important goals: furthering the child's development in important domains such as self-regulation, attention, and problem solving; and improving the parent-child relationship by setting aside time during which the child has the parent's full attention (O'Neill et al., 2012). It may also be that pretend play adds a unique contribution to the parent-child relationship, as the child is developing strategies alongside the parent that can generalize into relationship interactions.

The proposed benefits of parent-child play reflect both the behavioral and affective domains of the parent-child relationship. As parents use play to scaffold and support children's development, they encourage autonomy and communicate investment in the child's learning. Children learn social skills and affect regulation as they engage in conversation with their parents and observe parental expression of a range of affect. Playtime can become a shared activity of mutual interest to the parent and the child. The primary focus of the present study was using pretend play interactions to create a space between parents and children characterized by positive affect, warmth, and mutual enjoyment.

Summary

The challenges of raising a child with ADHD affect both the parent and the child in ways that have potential for lasting consequences. Parents of children with ADHD experience more stress on average than parents of typically developing children. A combination of child behaviors and parental factors often lead to negative parenting

behaviors in these families. Parents of children with ADHD are often more harsh and critical and less positive toward their children. Within this context of heightened stress and negative parenting practices, the parent-child relationship often suffers. Indeed, poor parent-child relationship quality is common among families of children with ADHD.

The parent-child relationship is not consistently studied among children with ADHD, and when it is a variable of interest, its measurement tends to be indirect or incomplete. Capturing a complete picture of the parent-child relationship requires multi-method assessment of both behavioral and affective elements of parent-child interactions. The present study used parent self-report measures to assess parents' support for their child's autonomy, use of harsh punishment, parental involvement, communication, and warmth/empathy in the dyad. In addition, a parent-child interaction task allowed for direct observation of all these realms.

The present study sought to isolate the variables important to the parent-child relationship and designed a focused, laboratory-based intervention to improve the parent-child relationship among children with ADHD. Parent-child play is a promising candidate for effecting relationship change in this population. The intervention used in this study was adapted from an individual play intervention manual developed by Russ and colleagues (Russ, Moore, & Farber, 2004). The individual play intervention has produced significant improvements in children's play skills in both school-age children (Moore & Russ, 2008; Russ et al., 2010; Russ, Moore, & Farber, 2004) and preschool-age children (Christian, Fehr, & Russ, 2010). It has also been successfully adapted for improving play skills in school-age children in a group format (Hoffman & Russ, 2013).

Russ and colleagues' intervention was adapted for use with parent-child dyads in the present study. It contains elements common to some existing programs, such as the Child-Directed Interaction portion of PCIT or portions of the Incredible Years parent training program. However, the present intervention was distinct in that it exclusively taught parents to participate in pretend play with their children rather than combining play instruction with behavior management techniques. It also used structured story prompts that incorporated themes unique to challenges to the parent-child relationship in ADHD (e.g. "a story about a boy who doesn't want to do his homework" and "a story about a boy who forgot to clean his room, but his mom wants him to"). Finally, the present intervention approached the parent-child play interaction as a venue for creating an experience of shared enjoyment, positive affect, warmth, and communication, elements selected as specifically important to the parent-child relationship.

General Hypotheses

This study was designed as a feasibility study whose primary aim was to determine whether a parent-child pretend play intervention is enjoyable and perceived as worthwhile by parents of children with ADHD. A secondary aim was to investigate the potential effects of the intervention on the parent-child relationship. We hypothesized that participation in the intervention would result in improvements to the parent-child relationship across self-report and laboratory task assessments. We hypothesized that parents and children who completed the intervention would report increased quality of the parent-child relationship compared to a waitlist control. We also hypothesized that parents and children would demonstrate increased quality of parent-child interactions in a laboratory task after participation in the pretend play intervention.

Method

Participants

Participants were 20, 6-9 year-old males ($\overline{x}$ = 6.85, SD = .93) diagnosed with Attention-Deficit/Hyperactivity Disorder recruited from the Cleveland Clinic ADHD Center for Evaluation and Treatment. Fifty-five percent had a diagnosis of ADHD – Combined presentation, 25% were diagnosed with Predominantly inattentive presentation, 5% were diagnosed with Predominantly hyperactive/impulsive presentation, and 15% were diagnosed with Unspecified ADHD. Most had no comorbid diagnosis (85%). Two children had a comorbid speech/language disorder and one had an anxiety disorder. Diagnosis was based on parent and teacher reports on standardized rating scales, a semi-structured diagnostic interview with the parent, an interview with the child, and an intelligence test. Rating scales included the Child Behavior Checklist, Teacher Rating Form, ADHD Rating Scale, and/or Conners Rating Scales. Clinicians included both doctoral- and masters-level therapists who conducted the in-person interviews and reviewed results from testing and rating scales. A licensed psychologist reviewed all diagnoses. Participants were Caucasian (80%), African American (10%), Hispanic (5%), and Multiracial (5%).

Recruitment efforts spanned multiple sites, including two other hospitals, a child development research laboratory, and a school for children with learning difficulties. However, only Cleveland Clinic successfully recruited participants. Parents that expressed interest in study participation were given a description of the study and signed a form allowing their diagnosing clinician to make contact with the principal investigator. Forty-eight families agreed to be contacted for the study. Twenty-five dyads began the

study and completed at least one session, and 20 completed all intervention and outcome sessions. One parent, a mother, participated from each family. Participants were restricted to mothers and sons in order to reduce variability due to parent and child gender. The school age Affect in Play Scale is validated for children ages 6-10. It was determined that a parent-child play intervention would be most appropriate for children ages 6 to 9, so the resulting sample consisted of boys ages 6-9.

Procedure

The procedure for this study followed a pre- and post-test design (See Figure 1). Parents and children were administered a baseline assessment and randomly assigned to the intervention or control group. Ten parent-child dyads were in the intervention group, and 10 were in the waitlist control group. After group assignment, each parent-child dyad assigned to the intervention group met for three, 30-minute sessions, approximately once a week for three weeks. Dyads assigned to the control group were placed on a three-week "wait list." Control group dyads completed an outcome assessment after the "wait list" period and subsequently completed the intervention sessions. This outcome assessment also served as the second baseline assessment, prior to the intervention sessions, for the waitlist control group. Following the last intervention session, each dyad returned for the outcome assessment.

Two examiners performed the baseline and outcome assessments. The same examiner performed both the baseline and the outcome assessment for each child. Examiners were systematically trained on the standardized delivery of the instruments and at outcome, both researchers were blind to whether the participant had been in the control or intervention condition. Coders were also blind to condition. Two facilitators

ran the intervention sessions, and the same facilitator conducted all three intervention sessions for each child. The second facilitator was systematically trained to deliver the intervention using observation, role-play, and in vivo coaching. Facilitators were blind to the baseline performances of each dyad when meeting with them.

The primary aim of this study was to investigate the feasibility of this type of intervention. A secondary aim was to examine the effects of the intervention.

Baseline. Parent-child dyads met for one, 60-minute session with an examiner to complete the baseline assessment. The baseline session, and all subsequent sessions, took place in Dr. Russ's research laboratory. The baseline assessment included the Affect in Play Scale (APS), parent-child Free play, the Tangram task, selected subscales of the Social Adjustment Inventory for Children and Adolescents (SAICA), the Parent-Child Relationship Inventory (PCRI), the Parent's Report of Parental Behavior Inventory – Revised, and Activities With My Child worksheet (See Appendix A for all measures). Parents were also asked to give two subjective ratings related to the parent-child relationship: 1) a numerical rating of the relationship with their child on a scale from 1-10, where 1 is a relationship that is "difficult, draining" and 10 is "warm, nurturing"; and 2) the percentage of daily conversation with their child characterized by reminders and corrections. Upon group assignment, parents assigned to the intervention group were provided with an informational overview of the play intervention protocol to review prior to their first intervention session (See Appendix B). This included a brief rationale for the study as well as examples of story stems and prompts they would be asked to use.

Play Intervention. Parent-child dyads met for three, 30-minute intervention sessions with one of two facilitators who were blind to baseline assessment scores.

Sessions included the researcher, the child, and the mother. Sessions were scheduled based on parent and facilitator availability and took place at Case Western Reserve University, and all play sessions were videotaped.

The present study adapted the pretend play intervention originally developed by Russ and colleagues (Russ, Moore, & Farber, 2004; Russ et al., 2010). Russ's pretend play intervention consists of standardized prompts and techniques supported by the research literature as a whole (See Russ, 2014 for a review). Children are provided with story stems and facilitators shape play through modeling and prompting. Intervention prompts include labeling and reflection of feelings expressed in play, labeling cause and effect in the story (e.g. "the boy is mad because his sister took his toy"), modeling imagination and affect expression, praise for creativity and emotional expression, prompting for what happens next in the story, and summarizing the child's story.

The present study maintained the structure of the play intervention with story stems and prompts. However, its focus shifted from promotion of imagination and affect expression in play to promotion of mutual enjoyment and involvement in play.

In the intervention sessions, parents and children engaged in interactive pretend play, coached by the facilitator. The parent first observed the facilitator using prompts and reinforcement to scaffold the child's use of imagination, affect, and organization in his pretend play. Parents were taught to deliver play prompts, model elements of fantasy and affect, and praise the child's successful use of these elements. The parent then slowly integrated into the play, and the facilitator eventually became an observer by the end of the third session. Each session used prepared story stems that encouraged the child's use of imagination and affect themes. Participants completed a minimum of two stories at

each intervention session. Parents were taught to deliver play prompts, model elements of fantasy and affect, and praise their child's successful use of these elements.

Session One. Session one of the play intervention began with a 5-minute review of the treatment rationale and intervention protocol with the participating parent. The facilitator reviewed the link between pretend play and creativity in young children and the benefits of fostering imagination and emotional expression as children develop. The facilitator reviewed the link between ADHD and strained parent-child relationships and introduced play as a method for fostering positive interactions between parents and children. The facilitator taught the parent the prompts outlined in the intervention protocol overview they were given at the baseline session before inviting the child to join them for play.

The facilitator then met with the parent and child and offered a brief outline of the session, using a scripted introduction adapted for a dyad from the script developed for the individual intervention (Russ, Moore, & Farber, 2004; Russ et al., 2010). The introduction was:

> "My name is ____ and I am here to learn about how parents and kids play together. We have some toys to play with (show bag). When we meet, we will be making up stories about different things. First, you and I will make up some stories, and then you and your mom will make up some stories."

A few rules were introduced at the first session and reviewed at the beginning of each following session. To ensure the children had ample freedom to be imaginative, express emotion and engage in child-directed play, rules were minimal: stay at the table

at which we are playing (participants may not run around the room) and be respectful of all toys.

The facilitator gave the following introduction to child:

"We are going to make up different stories using the toys on the table. We will make up a story and play it out with the toys. I'm going to play with you. Make the stories have a beginning, middle, and an end and use lots of feelings in the story, like happy, sad, or angry. First we are going to make up a story about…"

(See story stems in Intervention Manual, Appendix C)

During session one, the facilitator played out 2-3 story stems with the child before introducing the parent into the play. The first two story stems were, "A boy and mom/dad who go to the zoo" and "A boy who gets ready for school." The facilitator joined the parent in prompting and modeling as needed for stories 3-5. After 30 minutes of play, the facilitator met individually with the parent for approximately 5 minutes to discuss the session, give feedback, and introduce homework for the week (See Appendix D).

Session Two. In session two, the facilitator played out the first story stem with the child, "Having super powers." The facilitator invited the parent to complete the remainder of the story stems. The facilitator continued to assist the parent and offer modeling as needed throughout the session. After 30 minutes of play, the facilitator again met with the parent to review the session, give feedback on parents' prompting and modeling, and review the previous week's homework.

Session Three. During session three, the facilitator participated minimally in the parent-child play. Parents were encouraged to initiate each of the 2-5 story stems, engaging in dyadic play with the child for 30 minutes. At the end of session three, the

facilitator met with the parent to discuss the session, provide feedback, review homework, and schedule the outcome assessment.

During all play sessions, facilitators coached parents to use the play interaction to improve the parent-child relationship. The primary focus of the play session was to create a positive, enjoyable experience for both the parent and the child. Parents were encouraged to praise the child's imagination and affect expression and express enjoyment. They were taught strategies for remaining engaged with the child's play, such as offering reflections on the content, modeling ideas and affect, and joining the child in play. Facilitators and parents aimed for the play to remain mostly child-directed, and parents were encouraged to follow the child's lead. To ensure fidelity of the intervention across dyads, the facilitator completed a brief checklist during each session indicating that she had carried out each of the key components of the intervention (See Appendix C).

The toys used during intervention sessions were determined based on the set of toys outlined in the individual play intervention manual developed by Russ and colleagues (Russ, Moore, & Farber, 2004; Russ et al., 2010). Toys included male and female dolls, aggressive and non-aggressive animal toys, a variety of vehicles including a car, van, red wagon, snowboard, and jet ski, and props for the dolls including clothing, instruments, and books. The toy inventory also included more ambiguous toys that encourage imagination including wooden blocks, Lego's, and plastic shapes. Finally, toys were available to fit the story stems specifically related to parent-child conflict in children with ADHD. For example, one story stem was "A story about a boy feels mad

because he doesn't want to do his homework." Toys that fit this story included a desk and schoolbooks.

Home play sessions. Parents in the intervention group were asked to dedicate time at home to engaging specifically in pretend play with their children (20 minutes, 2 times per week). Parents were given a tracking sheet to record their practice with pretend play in between intervention sessions (See Appendix D). They were instructed to practice pretend play at home with their child, dedicating two, 20-minute play times to play one-on-one, with minimal distractions. During practice play, they prompted the child to make up a story using their own toys. They were provided with examples of story stems to use if they wished. After each session, parents recorded the date of completion and described something positive from their interaction with the child.

Control Group. After the baseline session was conducted, dyads assigned to the control group underwent a three-week waiting period designed to mimic a "waitlist control." At the end of the waiting period, each parent-child dyad completed an outcome assessment/second baseline session. For the control group, this session was also a baseline assessment for the intervention. The dyad then proceeded with the three-session intervention and one-session outcome assessment. To avoid necessitating an extra session for the control group dyads, the first intervention session took place directly after the control outcome/second baseline assessment. Thus, that meeting was longer than the others, approximately 90 minutes.

Outcome. Parent-child dyads participated in a 60-minute outcome session following completion of three play intervention sessions. The outcome assessment was conducted by an examiner who did not conduct the intervention sessions. The outcome

assessment included the same measures as the baseline assessment, with the addition of the Client Satisfaction Questionnaire (CSQ) and Parent Acceptability Survey to assess feasibility of the intervention from the parent's perspective. Outcome assessments took place 1-2 weeks after the final intervention session (See Figure 1 for study design).

Measures

Baseline/Outcome Efficacy Assessment. The present study used multi-method assessment to measure the efficacy of the intervention in improving the parent-child relationship. Assessment included self-report measures from mothers and children as well as parent-child interaction laboratory tasks that were coded for affective and behavioral components.

Parent-Child Relationship Inventory (PCRI). The PCRI (Gerard, 1994) is a 78-item scale that measures several dimensions of parental perceptions of the parent-child relationship. Its scales measure parental support for children's autonomy, interest/shared activities, and communication between parents and children. Parents rate items on a 4-point Likert scale from 1 (Strongly Agree), to 4 (Strongly Disagree). The seven resulting subscales are Parental Support (e.g. "When it comes to raising my child, I feel alone most of the time."), Satisfaction with Parenting (e.g. "Having children was the right decision for me."), Involvement (e.g. "My child and I spend time together, including extracurricular activities."), Communication (e.g. "If I have to say no to my child, I try to explain why."), Limit Setting (e.g. "Sometimes I give in to my child to avoid a tantrum."), Autonomy ("Parents should monitor their child's friendships."), and Role Orientation (e.g. "Women should stay at home and take care of the children."). There are also Social Desirability and Inconsistency scales, designed to indicate invalid response

patterns. The present study will use the Involvement, Communication, Limit Setting, and Autonomy subscales, as they are the most relevant to the construct of interest, the parent-child relationship.

Each subscale produces a standardized T-score (mean = 50, standard deviation = 10), where high scores reflect positive perceptions of parenting. Lower scores ($T \leq 40$) indicate problematic areas of parenting, and T scores of 30 or below indicate more serious problems with parenting. Gerard reported norm sample internal consistencies for the content subscales ranging from .70 to .88. The PCRI has shown good validity in parents of adolescents (Coffman, Wright Guerin, & Gottfried, 2006). Internal consistencies for the Involvement, Communication, and Limit Setting subscales have ranged from .73 to .88 in samples of parents whose children range in age from 5 to 16, and test-retest reliability has been reported at .81 (Coffman et al., 2006; Osbourne, McHugh, Saunders, & Reed, 2008; Tobin, Seals, & Vincent, 2011). However, the Autonomy subscale has shown somewhat problematic internal consistency, reported at .47 for mothers and .54 for fathers (Coffman et al., 2006) and .57 overall (Tobin et al., 2011).

Parent Report of Parental Behavior Inventory – Revised. The PBI is a 30-item scale that measures parental perception of their attitudes and behaviors toward their child. Like the PCRI, it measures parental support for children's autonomy. It adds measures of parental discipline practices and of parental displays of empathy and positive affect. It was designed to parallel the shortened form of the Children's Report of Parental Behavior Inventory (CRPBI-30; Schludermann & Schludermann, 1988). Parents rate their behavior toward their child in a variety of domains by indicating whether statements are "a lot

like," "somewhat like," or "not like" themselves. Scoring yields three subscales: Warmth/Acceptance (e.g. "I am a parent who is able to make my child feel better when he/she is upset."), Behavioral Control (e.g. "I am a parent who his very strict with my child."), and Psychological Control (e.g. "I am a parent who is less friendly with my child, if they do not see things my way."). Internal consistency for the subscales has been reported as ranging from .58 to .89 (Schwarz, Barton-Henry, & Pruzinsky, 1985; Vannatta, Ramsey, Knoll, & Gerhardt, 2010). Both convergent and divergent validity have also been established by comparing parent, child, and sibling reports of parental behavior (Schwarz et al., 1985).

Parent-Child Relationship rating. Mothers were asked to give a numerical rating of the relationship with their child on a scale from 1-10, where 1 is a relationship that is "difficult, draining" and 10 is "warm, nurturing." This is a standard question included in the diagnostic interview at Cleveland Clinic.

Daily Conversation rating. As one measure of maternal communication and intrusiveness, mothers were asked to estimate the percentage of daily conversation with their sons characterized by reminders and corrections. This is a standard question included in the diagnostic interview at Cleveland Clinic and has been shown to relate negatively to parent-child relationship quality (Wallace & Manos, 2015).

Activities With My Child worksheet. The Activities worksheet measures the number activities parents and children engage in together as well as the frequency of activities and parents' enjoyment of spending this time with their child. Parents completed a worksheet detailing the frequency and pleasantness of the activities they engage in with their child. They were asked to list all the activities they engage in with

the child on a regular basis, at least once per month. Activities should involve mutual engagement of parent and child, such as playing a game, rather than a child-only activity such as soccer practice (unless the parent is a coach). Activities could involve other people (i.e. family), as long as both parent and child are present. Parents rated the frequency of each activity as "Daily," "Weekly," or "Monthly." They also rated how much they enjoy the activity when the child is present as "Very Much," "Somewhat," or "Not at all."

Tangram task. The tangram task is a parent-child interactive activity that measures the quality of interactions between parents and children (Hudson & Rapee, 2001). The facilitator presented the child with a set of three tangram puzzles and asked the child to put geometric pieces together to match their templates in five minutes. The puzzles are intentionally too difficult for the child to complete without help in the allotted time. The dyad was given the following instructions:

> "I'm interested in the ways children and parents do things together. (Child name), your job is to put these pieces together to look like these pictures. You have five minutes to do three puzzles. Mom, you are going to be here for support and you will have the answers for interest. Most kids can do it but some find it a bit hard to get going. You can help if you think he really needs it."

The task was videotaped, and the interaction was rated on the following global scales (Hudson & Rapee, 2001): general mood, child's affect, child's tension, response to parent, parent's affect, parent's tension, response to child, general degree of involvement, unsolicited help, touching of tangram pieces, position/posture, and parent's focus. Each global scale was rated on a continuum from 0 to 8, with 4 representing a neutral point.

The first seven scales load onto a larger Negativity factor, measuring parental warmth, affect, and communication with the child. The last five scales load into a larger Involvement factor, measuring the degree to which the parent was supportive of child's autonomy and engaged with the child's activity.

The tangram task has shown adequate reliability and validity. Reliability for the Involvement factor has been consistently high, with intraclass correlations above .80 (Hudson & Rapee, 2002; van der Bruggen, Bögels, & van Zeilst, 2010). Interrater reliability for the Negativity factor has ranged from .50 (Hudson & Rapee, 2001) to .92 (Esbjørn, Sømhovd, Nielsen, Normann, Leth, & Reinholdt-Dunne, 2014). Positive parent-child interactions on the tangram task are positively associated with children's response to cognitive behavioral therapy for anxiety (Esbjørn et al., 2014) and negatively associated with children's withdrawn behavior (van der Bruggen et al., 2010). To ensure interrater reliability, an independent coder scored 20% of Tangram videotapes.

Parent-Child Free play. A free play task with both parent and child was designed to measure the quality of parent-child interactions in an unstructured setting. While the tangram task measures interactions in the context of a structured task, the free play task measures interactions in a context free from task demand or restriction and gives a sample of parent-child behavior that represents typical play interactions between the dyad. Parents and children were given five minutes to play together. The provided toys were similar to those used for the intervention but were not the same toys. No structured toys/activities were offered during this task (e.g. puzzles, games). Parents and children were given the instruction, "You have five minutes to play together. Play as you normally would at home."

Interactions were coded using a modified version of the tangram coding system. Three ratings were removed: touching of tangram pieces, position/posture, and parent's focus. "General degree of involvement" was modified to reflect "general degree of engagement," and "unsolicited help" was modified to reflect "intrusiveness." To ensure interrater reliability, an independent coder scored 20% of free play videotapes.

Mutual Enjoyment Rating. An additional observation of parent-child interaction used the video from parent-child free play. Play was rated for degree of enjoyment for the dyad on a scale from 1-5, where 1 represents the highest degree of positive affect and comfort in the interaction.

Social Adjustment Inventory for Children and Adolescents (SAICA). The SAICA (John, Gammon, Prusoff, & Warner, 1987) is a 77-item semi-structured interview of adaptive functioning for school-aged children (age 6-18) about themselves, or alternatively for parents about their children. The present study used the Relations with Mother and Problems with Parents subscales of the SAICA to assess children's perception of aspects of the parent-child relationship. The Relations with Mother subscale includes three items: does things with her; is friend/affectionate with her; and talks with her. The Problems with Parents subscale includes four items: reacts very negatively/refuses to do chores or honor restrictions; is dangerously irresponsible around home; damages home or family property; and physically threatens or attacks parents. Items are rated on a 4-point Likert scale from 1 "very true" to 4 "not at all true". The SAICA showed good reliability and validity in its standardization sample (John et al., 1987). The two subscales of interest correlated .84 and .58, respectively, with the overall Home functioning area of the SAICA. Validity was established via high correlations were

also reported between SAICA subscale scores and the Child Behavior Checklist. The SAICA has also been validated with children with ADHD (Biederman, Faraone, & Chen, 1993).

*Affect in Play Scale (APS)***.** The APS is a standardized 5-minute play task designed to measure various dimensions of children's pretend play. Children receive two puppets and three blocks and are given the following instructions:

> I'm here to learn about how children play. I have here two puppets and would like you to play with them any way you would like for five minutes. For example, you can have the puppets do something together. I also have some blocks that you can use. Be sure to have the puppets talk out loud. The video camera will be on so that I can remember what you say and do. I'll tell you when to stop.

The child is informed when there is one minute left. If the child stops playing during the 5-minute period, he/she is given the prompt, "There's still time left, keep playing." The task is discontinued if the child cannot play after a 2-minute period.

The play was videotaped for coding purposes. Both cognitive and affective elements of the play were scored. The following cognitive scores were rated on a scale from 1 to 5: Organization, a measure of the quality and complexity of the plot; and Imagination, a measure of the novelty, block transformations, and fantasy of the play. An additional score is Comfort, a measure of the child's enjoyment of and engagement in play. The affect scores are Frequency of affect, the total number of affective expressions in the play narrative; Variety of affect, expressed across 11 possible categories; Positive affect, the number of positive affective expressions in the play narrative; and Negative affect, the total number of negative affective expressions in the play narrative.

A detailed scoring manual for the APS has been developed (Russ, 2004, 2014). Past studies have reported the interrater reliability of the APS to be high, consistently in

the .80s and .90s. Internal consistency on the APS using the Spearman-Brown split-half reliability is also high (.85; Seja & Russ, 1999). The APS has a large body of validity studies demonstrating associations with theoretically relevant criteria (see Russ, 2004, 2014). To ensure interrater reliability, an independent coder scored 20% of APS videotapes.

Feasibility Assessment

Feasibility of the intervention was assessed via families' attendance and completion of weekly homework as well as program satisfaction measures completed after the intervention sessions.

Client Satisfaction Questionnaire (CSQ). The CSQ (Larsen, Attkisson, Hargreaves, & Nguyen, 1979) is an 8-item survey designed to assess clients' satisfaction with the therapy services they receive. Clients rate their experiences on a 4-point Likert scale, from 1 "Quite Dissatisfied" to 4 "Very Satisfied". Response descriptors vary by question, but higher scores indicate greater degrees of satisfaction across items. This well-validated measure was included in order to assess parental perception of the intervention program itself, with some separation from personal outcomes or the degree of change experienced. Internal consistency of the CSQ is regularly reported to be high, with coefficient alphas above .90 (Attkisson & Zwick, 1982; Larsen et al., 1979). Scores correlate with therapist estimates of client satisfaction (Larsen et al., 1979) as well as service utilization and overall psychotherapy outcomes (Attkisson & Zwick, 1982).

Parent Acceptability Survey. An additional 5-item survey was administered at the outcome assessment, aimed at measuring satisfaction with the present intervention. Like the Client Satisfaction Questionnaire, this supplemental survey asks parents to rate

acceptability of the intervention on a 4-point Likert scale from 1 (Strongly Disagree) to 4 (Strongly Agree). Parents rated their level of enjoyment, child's level of enjoyment, relationship change, and behavior change in their child and in themselves. The measure also included three open-ended questions: 1) What, if anything, has changed in your relationship with your child, 2) Were there any barriers to participation that made it difficult, and 3) Have you noticed any other changes in your child after the program (e.g. relationships with siblings/peers; behavior at home/school).

Specific Hypotheses

The nature of the present study's design allows for both between-group and within-group analyses in addition to feasibility analyses. Between-group analyses were conducted for the intervention group (n=10) versus the waitlist control (n=10). Within-group analyses were also conducted on the pre- and post-intervention measures for the entire sample (n=20). Intervention effects hypotheses apply to both types of analyses.

1. *Feasibility*: The parent-child relationship intervention would be perceived as enjoyable and worthwhile by mothers of children with ADHD.
    a. Mothers would report high levels of satisfaction on the Parent Acceptability Survey.
    b. Mothers would report high levels of satisfaction on the Client Satisfaction Questionnaire.
2. *Efficacy*: Mothers and children who completed the pretend play intervention would report significantly increased quality of the parent-child relationship and would demonstrate significantly increased quality of parent-child interactions on

laboratory tasks from pre- to post-intervention. Effects would also be observed in between-group analyses.

a. Mothers would report higher ratings of the overall parent-child relationship on a 1-10 scale and lower ratings of percentage of daily conversation characterized by reminders and corrections.
b. Mothers would report higher scores on the Involvement, Communication, Limit Setting, and Autonomy subscales of the Parent-Child Relationship Inventory.
c. Mothers would report higher scores on the Warmth/Acceptance subscale and lower scores on the Behavioral Control and Psychological Control subscales of the Parent Report of Parental Behavior Inventory.
d. Mothers who completed the intervention would have lower scores on the Negativity and Involvement scales of the Tangram and Free play tasks, indicating more positive affect and more promotion of child autonomy.
e. Children who completed the intervention would have lower scores on the tension, affect, and responsiveness ratings of the Tangram and Free play tasks Negativity scale, indicating more positive affect and comfort during the parent-child interaction.

Results

Data Analysis

The data analysis plan was designed to assess for feasibility as the primary outcome measure. Therefore, the analyses are primarily descriptive. Means and standard deviations were calculated for the variables of interest, including families' attendance,

completion of weekly homework, and items on the Parent Acceptability Survey and Client Satisfaction Questionnaire.

Additional analyses investigated efficacy of the play intervention for parent-child relationship variables. One-way between-groups analysis of variance (ANOVA) was used to test for significant changes in the parent-child relationship between groups (wait list and intervention). Repeated measures ANOVA was used to assess the effect of the intervention within groups (pre-intervention and post-intervention). Specifically, analyses examined differences in coded parent-child interactions, parent report of the parent-child relationship, child report of the parent-child relationship, and frequency and enjoyableness of shared activities reported. For within-group analyses, the second baseline session from the control group was used as pre-intervention data. Analyses also investigated effect sizes of group differences, where .01 = small, .06 = moderate, and .14 = large effect (Cohen, 1988).

Exploratory analyses used ANOVAs to examine changes in pretend play skills after the play intervention. Analyses compared the intervention and control groups as well as the full sample from pre to post intervention. In addition, Pearson product-moment correlations were used to test for significant correlations among the measures at baseline. An alpha value of .05 was used for all statistical tests. Interrater reliability for 20% of parent-child dyads was conducted for the APS, Tangram, and Free Play coding.

Overall descriptive statistics for the sample are presented in Table 3 (Wait List and Intervention) and Table 5 (Pre and Post Intervention). All variables were checked for skewness and kurtosis, but none exceeded the cutoff of ± 3 (Tabachnick & Fidell, 2007).

Levine's test for homogeneity of variances was also performed for all ANOVAs. Where variances were not equal, p values are reported for "equal variances not assumed."

One-way ANOVAs were performed to check for facilitator effects on outcome scores. No differences were found between examiners on any outcome variables.

Interrater Reliability

Interrater reliability was assessed for the APS, Tangram, and Free Play tasks. An independent coder, blind to condition, rated 20% of each of these videos. Intra-class correlations (ICC) were calculated based on a single measures, absolute agreement, two-way mixed effects model to assess the degree of consistency between coders for each task. The resulting ICCs for the Affect in Play Scale were Excellent (IRR = .85-.96) with the exception of the Comfort rating in the Good range (IRR = .63) (Cicchetti, 1994). ICCs were Good for the Tangram task subscales (IRR = .61-.74) and Excellent for the Free play task subscales (IRR = .76-.80). Raters had overall high levels of agreement and rated behaviors consistently across participants.

Intervention Fidelity

To ensure fidelity with the intervention protocol, facilitators completed an in-session checklist for each intervention session (See Appendix C). During each intervention session, facilitators: 1) modeled imagination/pretend in play, 2) modeled affect expression, 3) praised the child's play, and 4) expressed enjoyment in play. In the third intervention session, facilitators ensured that parents completed the first, second, and fourth items. Full fidelity was achieved during every intervention session, with facilitators indicating 100% compliance with fidelity for each participant.

Feasibility

Of the 25 families who agreed to participate in the study, 20 completed the intervention. Five families completed a baseline session but did not return for any intervention sessions due to parental scheduling difficulties. This yielded a study completion rate of 80%. Every parent-child dyad that began the intervention completed the study. Mothers were asked to complete weekly play sessions with their sons after each intervention session, resulting in six possible play sessions throughout the study. Each dyad completed between 2 and 6 home play sessions, with an average of 4.35 (SD =1.66).

Nineteen participants completed the Parent Acceptability Survey and the Client Satisfaction Questionnaire (See Table 2). As hypothesized, the intervention was overall perceived as enjoyable and worthwhile by mothers of children with ADHD. On the Parent Acceptability Survey, mothers overall indicated high levels of satisfaction ($\bar{x}$ =17.42, SD = 2.61, range 13-20). Mothers responded to each of 5 questions on a 1-4 Likert scale, with 1 indicating "strongly disagree" and 4 indicating "strongly agree." Every mother agreed that the intervention was enjoyable both for her and for her child. The majority of mothers also rated overall improvements in the parent-child relationship (95%), child's behavior (75%), and mother's own behavior (90%). The survey included free-response questions asking mothers to describe how their relationship changed, any other observed changes, and barriers to participation. Mothers most commonly described relationship improvements in the domains of spending more time together (n=5), playing more (n=5), and improved communication (n=7). They also noted improvements in sibling relationships (n=5) and fewer acting out behaviors (n=3). The most common

barriers described were the distance of the study location (n=4) and difficulty building pretend play skills (n=4).

Mothers also indicated high levels of satisfaction on the CSQ ($\overline{x}$ = 28.16, SD = 3.82, range 18-32). CSQ items are also rated on a Likert scale from 1-4, with 1 indicating least satisfaction and 4 indicating most satisfaction. All mothers indicated that they were satisfied with the program overall ($\overline{x}$ = 3.79, SD =.42) and that they would refer a friend ($\overline{x}$ = 3.74, SD =.45). The CSQ and Parent Acceptability Survey were highly correlated (*r*= .77, p = .00).

Efficacy of Intervention

Analyses examined changes in the parent-child relationship, both between groups (wait list and intervention) and within groups (pre-intervention and post-intervention). Baseline data showed no significant group differences on any measure. Average length of time between baseline and outcome assessment sessions was 33 days, with no significant group differences.

Waitlist versus Intervention. We hypothesized group differences on both self-report and behavioral observations of the parent-child relationship. Two findings reached significance (See Table 4). Consistent with hypotheses, mothers in the intervention group reported significantly lower percentages of daily conversation with their sons characterized by reminders and corrections, $F(1,19) = 9.47$, $p < .01$, $\eta^2 = .32$. Contrary to hypotheses, mothers in the intervention group reported a lower average frequency of activities with their children than mothers in the control group, $F(1,19) = 4.73$, $p = .043$, $\eta^{2 =} .19$. However, mothers in the intervention group reported higher average enjoyment of activities with their children than mothers in the control group, $F(1,18) = 1.27$, $p =$

.27, η^2 = .06. Although this finding was not statistically significant, it showed a medium effect size.

Effect sizes were also examined. Results showed medium to large effect sizes for several parent self-report measures of relationship quality, including numeric relationship quality rating, F (1,18) = 3.47, p = .08, η^2 = .15; PCRI Limit Setting subscale, F (1,17) = 2.81, p = .11, η^2 = .13; PCRI Autonomy subscale, F (1,17) = 3.66, p = .07, η^2 = .16; and PRPBI Psychological Control subscale, F (1,18) = 3.29, p = .09, η^2 = .14. Medium effect sizes emerged among coded behavioral observations of the parent-child relationship: Tangram Negativity subscale, F (1,18) = 1.56, p = .23, η^2 = .07; Free Play Intrusiveness rating, F (1,18) = 2.16, p = .16, η^2 = .10; Free Play Involvement subscale, F (1,18) = 2.64, p = .13, η^2 = .12; and Mutual Enjoyment rating, F (1,18) = 2.88, p = .11, η^2 = .13. Finally, there was a medium effect size for child self-report of relationship quality: SAICA Relationship with Mother subscale, F (1,18) = 1.62, p = .22, η^2 = .08.

To summarize, as hypothesized, intervention effects were observed for both self-report measures and laboratory tasks. Mothers reported higher overall relationship quality (1-10 scale) and a lower percentage of daily conversation with their sons characterized by reminders and corrections. Mothers also reported greater effectiveness setting limits (PCRI Limit Setting), greater willingness to promote children's autonomy (PCRI Autonomy; PRPBI Psychological Control/Autonomy), and greater enjoyment of shared activities (Activities with My Child – Average Enjoyment). Children in the intervention group reported improved relationships with their mothers (SAICA Relationship with Mother). Coded laboratory tasks of parent-child interactions showed less overall dyad negativity (Tangram Negativity), less parental intrusiveness (Free play Intrusiveness),

more appropriate parental involvement (Free play General Involvement), and greater overall mutual enjoyment (Free play Mutual Enjoyment). Contrary to hypotheses, mothers reported lower average frequency of parent-child activities in the intervention group compared to the control group (Activities with My Child – Average Frequency).

Pre-Intervention versus Post-Intervention. Looking at the entire sample of 20 dyads, as hypothesized, participation in the coaching play intervention resulted in significant improvements in the parent-child relationship across self-report and behavioral observation measures from baseline to outcome (See Table 6).

Parent self-report measures showed significant improvements in parent-child relationship quality rating, $F(1,19) = 21.65$, $p < .01$, $\eta_p^2 = .53$; percent of reminders and corrections in daily conversation, $F(1,19) = 5.54$, $p = .03$, $\eta_p^2 = .23$; the PCRI Communication subscale, $F(1,18) = 5.41$, $p = .03$, $\eta_p^2 = .23$; the PRPBI Psychological Control subscale, $F(1,19) = 6.45$, $p = .02$, $\eta_p^2 = .25$; and Average Enjoyable rating of parent-child activities, $F(1,19) = 5.36$, $p = .03$, $\eta_p^2 = .22$. Also consistent with hypotheses, coded behavioral observations showed significant improvements in the parent-child relationship. Results showed significant improvements in the following domains: Tangram task Negativity subscale, $F(1,18) = 5.70$, $p = .03$, $\eta_p^2 = .24$; Free play Involvement subscale, $F(1,19) = 574$, $p = .03$, $\eta_p^2 = .23$; Free play Engagement rating $F(1,19) = 6.79$, $p = .02$, $\eta_p^2 = .26$; and Mutual Enjoyment of play rating, $F(1,19) = 6.07$, $p = .03$, $\eta_p^2 = .24$.

Examination of effect sizes showed additional trends consistent with hypotheses. Parent self-report showed large effect sizes for improvements on the PCRI Involvement subscale, $F(1,18) = 2.98$, $p = .10$, $\eta_p^2 = .14$ and the PRPBI Warmth/Acceptance subscale,

F (1,19) = 3.62, p = .07, η_p^2 = .16 and a medium effect size for the PCRI Limit Setting subscale, F (1,19) = 1.25, p = .28, η_p^2 = .07. Child self-report indicated a large effect size for improvement on the SAICA Problems with Parents subscale, F (1,19) = 3.60, p = .07, η_p^2 = .16 and a medium effect size for improvement on the SAICA Relationship with Mother subscale, F (1,19) = 2.26, p = .15, η_p^2 = .11. Coded behavioral observations showed medium effect sizes for improvements on the Free play task Negativity subscale, F (1,19) = 1.15, p = .30, η_p^2 = .06 and Intrusiveness rating, F (1,19) = 1.30, p = .27, η_p^2 = .06.

Analyses of intervention effects also investigated differences between parent behaviors and child behaviors on coded interaction tasks. Because the Tangram and Free play Negativity subscales combine parent and child behavior ratings, individual scores were separated for comparison. Results showed improvements in both parent and child behaviors on both the Tangram and Free play tasks, although more behavior changes were observed with the Tangram task than Free play. Statistically significant improvements occurred on the Tangram Parent Affect rating, F (1,18) = 5.86, p = .03, η_p^2 = .25, and Tangram Response to Child rating, F (1,18) = 4.99, p = .04, η_p^2 = .22. Results showed a medium effect size for improvement on the Tangram Parent Tension rating, F (1,18) = 1.15, p = .30, η_p^2 = .06. Regarding child behaviors, there were statistically significant improvements on Tangram Child Tension ratings, F (1,18) = 14.06, p < .01, η_p^2 = .44 as well as medium effect sizes on Free play Child Tension ratings, F (1,19) = 1.93, p = .18, η_p^2 = .09 and Tangram Child Affect ratings, F (1,18) = 1.89, p = .19, η_p^2 = .10.

To summarize, variables across parent report, child report, and behavioral observations showed group differences in parent-child relationship. In the parent report domain, mothers reported higher overall relationship quality (1-10 scale) and a lower percentage of daily conversation with their sons characterized by reminders and corrections. Mothers also reported increased efforts at involvement with their children (PCRI Involvement), more enjoyment during interactions (Activities with My Child-Average Enjoyment), improved communication abilities (PCRI Communication), greater effectiveness setting appropriate limits on behavior (PCRI Limit Setting), more warmth and acceptance of children (PRPBI Warmth/Acceptance), and decreased insistence on strict behavioral control (PRPBI Behavioral Control). Children reported significantly decreased problems with parents, reflecting fewer defiant behaviors and less parent-child conflict at home (SAICA Problems with Parents) as well as improved overall relationship quality with their mothers (SAICA Relationship with Mother). Lastly, coded laboratory tasks showed less overall dyad negativity (Tangram Negativity; Free play Negativity), more appropriate parental engagement in play (Free play Engagement; Free Play Involvement; Free Play Intrusiveness), and greater mutual enjoyment of play (Free play Mutual Enjoyment) as a result of participation in the intervention.

In order to further specify changes in parent versus child behaviors in coded interactions, subscale scores reflecting parent behavior and child behavior were analyzed separately. All three ratings of parent behavior – parent affect, parent tension, and response to child – improved on the Tangram task after the intervention. Parents displayed overall more positive affect with their children, less tension during interactions, and more encouragement and warmth toward their children after the intervention.

Children's behaviors also improved on both tasks following the intervention. They displayed more positive affect during the Tangram task and less tension during both the Tangram and Free play tasks. Children's responsiveness toward parents also showed small effect sizes on both tasks but did not reach significance. Thus, findings showing group differences in decreased negativity on both tasks reflect changes in both parent and child behaviors.

Exploratory Analyses.

Effect of intervention on play skills. Results showed that the parent-child relationship intervention had some effect on improving children's play skills (See Table 6). There were medium effect sizes for increases in Imagination, $F(1,19) = 1.73$, $p = .20$, $\eta_p^2 = .08$; Organization, $F(1,19) = 1.51$, $p = .23$, $\eta_p^2 = .07$; and Comfort, $F(1,19) = 1.20$, $p = .29$, $\eta_p^2 = .06$ on the Affect in Play Scale. Results showed a large effect size for APS Variety of Affect, $F(1,19) = 3.09$, $p = .10$, $\eta_p^2 = .14$. Children's play narratives on this unstructured play task were rated as more imaginative and organized after the intervention, and their play contained a greater variety of expressed emotions. Children were also rated as more comfortable in play. There were no observed negative effects on play skills.

Baseline relationships. Baseline measures were examined for significant relationships. Parent report of relationship quality was positively related to the PCRI Limit Setting subscale ($r = .44$, $p = .03$) and negatively related to average rated enjoyment of activities ($r = -.59$, $p < .01$). Both are in the expected direction, as lower ratings indicate more activity enjoyment. Parent report of Limit Setting on the PCRI was negatively related to average number of activities reported with children ($r = -.53$, $p =$

.01). Parent report of Warmth/Acceptance on the PRPBI correlated in the positive direction with PCRI subscales of Involvement (r = .70, p < .01) and Communication (r = .46, p = .02).

On coded laboratory tasks, a significant relationship emerged between Negativity on the Tangram and Free play tasks (r = .56, p = .01). The relationship did not reach significance for the Involvement subscale (r = .31, p = .20). General patterns between the two tasks showed differing levels of agreement for specific ratings (See Table 8). The strongest correlations between the tasks were for Parent's Affect (r = .61, p <.01) and for Parent Intrusiveness/Unsolicited Help (r = .63, p <.01). Child-specific ratings showed no significant correlations between tasks for Child's Affect or Child's Tension but a trend for Response to Parent (r = .42, p = .07). Within-groups ANOVA analyses showed that ratings for Child's Affect and Child's Tension were significantly lower on the Free Play task compared to the Tangram task (F (1,18) = 12.65, p < .01, η_p^2 = .41 and F (1,18) = 29.97, p < .01, η_p^2 =. 64, respectively) (See Table 9). Large effect sizes were also found for Engagement, F (1,18) = 4.19, p = .06, η_p^2 = .19 and Intrusiveness ratings, F (1,18) = 3.74, p = .07, η_p^2 = .17, such that parents were more engaged and less intrusive in Free play than on the Tangram task.

Results also showed significant correlations among play skills and parent-child relationship variables. Child report of Problems with Parents on the SAICA was positively related to APS Organization (r = .43, p = .03) and APS Imagination (r = .41, p = .04), such that higher ratings of problems with parents was associated with better organization and imagination skills in play. APS Imagination also correlated with parent-rated average frequency of activities with their child (r = .48, p = .02), such that better

imagination skills in play related to less average frequency of parent-child activities together. Finally, lower parent-rated relationship quality was associated with higher Variety of APS affect expression (r = -.52, p = .01), better Imagination (r = -.44, p = .03), and more Positive affect expression in play (r = -.42, p = .04).

Discussion

The primary purpose of the present study was to test the feasibility of a play-based parent-child relationship intervention for mothers and their sons with ADHD. The main findings were that mothers rated the intervention as both enjoyable and effective. Mothers indicated overall improvements in the parent-child relationship in addition to other mood and behavior improvements. Main barriers to participation were distance/location and scheduling. Approximately half of participants approached participated in the study. Of the parents who participated in the study, all completed the study once they began the intervention. A secondary purpose of this study was to investigate preliminary effects of the intervention on the parent-child relationship. Preliminary findings indicate positive effects on the parent-child relationship, consistent across self-report measures and laboratory tasks. No negative effects of the intervention were reported or observed.

Feasibility

Overall, this pilot feasibility study shows merit for continuation based on both participation rates and parent reports of satisfaction. Approximately half of parents who expressed initial interest in the study attended at last one session. Of those who did not participate in the study, most never made return contact via phone. Of note, parents consented to be contacted about the study at the feedback session after the child's initial

ADHD evaluation. Thus, parents were receiving their child's diagnosis of ADHD for the first time that date and attended a feedback session that included psychoeducation about ADHD, behavioral recommendations for management at home and at school, and discussion of medication management. While the intervention was presented as a beneficial first step in treatment, it is likely that many families were overwhelmed with information and treatment options and elected to pursue a different initial intervention to address ADHD symptoms.

Of the 25 mother-child dyads that participated in the study, 20 completed all five sessions. All 5 dyads that did not complete the full study discontinued after their initial baseline session. Thus, every dyad that had at least one intervention session returned for all other sessions. This indicates that parents and children likely found the intervention to be enjoyable and parents were motivated to complete the intervention despite other challenges. Of the 5 who discontinued, one was due to child reluctance to continue and the other four were due to difficulties with family schedules and drive time.

In addition to study completion, all 20 participants completed home play sessions between intervention sessions. Forty percent of participants completed all six home play sessions, with an overall average of 4.4 sessions. Completion of home play sessions was a useful component of the intervention, as it allowed parents and children to generalize learned skills to the home environment and it facilitated discussion between parents and facilitators of challenges that arose at home. For example, one parent reported after her initial home play sessions that her son was easily distracted in their play room and had difficulty focusing on any one toy long enough to have an appreciable interaction with his mother. The facilitator recommended conducting play sessions at a table or on a blanket

on the floor to impose physical boundaries, as well as choosing several selected toys for play time to reduce overstimulation. Future home play sessions with this dyad went much more smoothly and both mother and son experienced more enjoyment in future sessions.

Feasibility was assessed quantitatively with the Parent Acceptability Survey and the Client Satisfaction Questionnaire. All mothers indicated on the Parent Acceptability Survey that both they and their children enjoyed participating in the program. In addition, most indicated observing changes in their relationship with their child, their child's behavior in various domains, and their own behavior. On free response items, mothers indicated that the most common changes to the parent-child relationship were spending more time together, playing more, and improved communication. Other reported relationship changes included improved parent comfort with play skills, enjoying time together, understanding the child better, increased patience, and improved emotional expression skills in the child. One parent wrote, "Much more easy going! We talk more and yell less. I understand his needs better." Another described, "I've learned new techniques that can encourage his creative play while allowing me to interact more with him." Reported improvements in other domains included improved sibling relationships, fewer acting out behaviors, improved play skills, increased pro-social behaviors, increased emotional awareness, and improved mood. One mother stated, "Happier, not as negative with himself. Not as anxious or afraid." Another reported, "I am gaining a new understanding of what his ADHD means for him and its impact on our family."

Free response items also examined barriers to participation. Most common barriers were distance/location of the study location and difficulty with pretend play skills. Other barriers included child acting out behaviors, busy family schedules, sibling

needs, and parent energy level. One response stated, “It helped our relationship. But, we still struggle with daily routines, where we don’t have as much freedom, or ability to let him lead. For example - this program doesn’t apply to getting up and getting ready for school in a timely manner.”

Examination of findings from the CSQ indicated that all mothers were satisfied with the program overall and would recommend the program to a friend in need of similar help. These two item ratings ranged from 3-4, indicating moderate to high agreement/satisfaction. Ratings of the other six items ranged from 2-4. Of note, just three of the twenty participants rated a 2 on any item, indicating mild dissatisfaction. Two described having difficulty with creativity in play time, and the other indicated both discomfort with pretend play modality and increasing behavioral difficulties with her child coinciding with beginning Kindergarten just prior to the intervention. One parent noted in the CSQ comments section, “I have really enjoyed participating! I played with [my child] before, but making small changes has helped tremendously and it no longer seems like a chore, rather, I look forward to it. I didn’t come into this study with any grand expectations, but I am ending it thinking it was time well worth it and I can’t say enough good things about it.” Scores on the CSQ in the present study were consistent with scores from parents participating in other treatment studies (Cuttic, 2015; Gunlicks-Stoessel & Mufson, 2016; Siddiqua & Janus, 2017). For example, a sample of 35 foster parents completing a mental health workshop had mean CSQ ratings similar to those reported in the present study ($\overline{x}$ = 24.69, SD = 3.53) (Morrow, Garwood, Brutko, Schneider, & Cuttic, 2015). These studies each had similar sample sizes as the present study and assessed parent report on the CSQ.

Intervention Effects

As hypothesized, preliminary findings from the intervention show improvements in the parent-child relationship across self-report measures and laboratory tasks. The present study employed multi-method assessment of the parent-child relationship to capture both behavioral and affective components of the relationship. Findings indicate that both parents and children showed improvements in behavioral and affective realms that affect the parent-child relationship.

Important behavioral aspects of the parent-child relationship include autonomy support, use of harsh punishment, involvement/shared parent-child activities, and communication/conversation. Improvements were observed in each of these domains following the intervention. Mothers reported that they were more supportive of their children's autonomy and they were less intrusive in free play with their children. Minor improvements were noted in mother's self-report of appropriate limit-setting behaviors, and children reported fewer disciplinary problems with mothers. Mothers and sons both noted increased interactions with each other as well as shared activities, and mothers were more engaged in free play with their sons. Finally, mothers and sons both reported better communication with each other, and dyads showed less negativity in structured and unstructured interactions in the lab.

The last two elements of the parent-child relationship, involvement and communication, were most frequently the subject of positive comments by mothers on post-intervention satisfaction surveys. During the course of intervention sessions, one mother reported that she had begun to turn off the radio in the car while driving her son home from school and use that time to connect with him and communicate about his day.

She described that he was highly engaged in conversation at that time and that they both enjoyed this change in their routine. Children often commented after intervention sessions that they were eager to continue their pretend play stories in future home play sessions that week with their mothers. One child developed a structure of playing out "episodes" with his mother and excitedly recounted details from each episode to the facilitator at each intervention session and planned ideas for the following episode with his mother.

The intervention also showed preliminary evidence of improving affective aspects of the parent-child relationship. Important affective or emotional aspects include displays of affect, warmth/affection, and empathy. Mothers reported showing more warmth and positive affect toward their children. Behaviorally, both mothers and sons displayed more positivity and affection toward each other on the Tangram task, and mothers were more encouraging and less critical toward their sons. Mothers' ability to make these improvements on the structured Tangram task is especially encouraging, as it shows parents can adjust their behavior in a situation with greater task demand and more potential stress and negativity.

Emotional connection is a crucial aspect of the parent-child relationship, and participation in the intervention resulted in improvements in both verbal and nonverbal displays of emotion. After the intervention, one mother wrote, "…the play was a good place to let him express angry feelings and a good place to learn about things that he fears, make him sad, and make him angry." Another mother described that the intervention helped her son learn to better identify his feelings. During an intervention session, one child stated, "This is the only place I get to say this stuff," referring to his

ability to express negative emotion in a safe space. His mother later wrote, "You have helped [my child] and I enjoy our time together without judgment, but with more sharing and exploring our relationship as mother and son."

In addition to expected intervention effects, analyses showed a few unexpected findings. Mothers indicated lower average frequency of parent-child activities in the intervention group compared to the control group. This discrepant finding likely reflects problems with standardization of the Activities with My Child questionnaire. The questionnaire did not require parents to report on the same activities at each time point, which resulted in high levels of variability across time points. For example, a parent may have listed a set of parent-child activities at baseline that occurred daily or weekly and were somewhat enjoyable on average. The same parent may then have listed a set of different parent-child activities at outcome that occurred weekly or monthly but were highly enjoyable on average. The intervention encouraged parents to find positive time to spend with their children, and it is reasonable that the decreased frequency but increased enjoyableness of activities may reflect an emphasis on quality over quantity of parent-child activities.

Two variables of interest in measuring the parent-child relationship were not significant in either between-group or within-group analyses: the Tangram Involvement subscale and Total Number of reported parent-child activities. Further analysis of ratings comprising the Tangram Involvement subscale showed improvements in the General Degree of Involvement rating (medium effect size) and the Touching of Tangram pieces rating (large effect size). Two additional ratings – Unsolicited help and Position/Posture – showed small effect sizes, and there were no observed group differences for ratings of

Parent's focus. It is possible that the small sample size in this study did not yield enough power to significant effects on the Involvement subscale overall. Regarding the second variable, Total number of parent-child activities, it is probable that the unstandardized format of reporting on this measure changed its nature and intended purpose. As previously discussed, parents were presented with a free-response format. Their ratings of activities as more enjoyable after the intervention may reflect a focus on quality of activities over quantity.

Exploratory analyses found that children's play skills showed some modest improvements as a result of the intervention. Children demonstrated higher scores in both cognitive and affective scores on the Affect in Play Scale following the intervention. This stands in contrast to previous findings that parent-child play decreases children's observed play skills (Noeder, 2011). The present study differs in that parents were coached to support and scaffold children's play. Coaching elements were designed to address specific challenges associated with parent-child interactions among children with ADHD, such as limited attention, hyperactivity, and hyper focus. Coaching may be an important element in the use of parent-child interactions to improve play skills among children with ADHD.

Summary of Intervention Effects

Overall, the play-based parent-child relationship intervention developed in this study shows promise as a relationship-building tool for parents of children with ADHD. All findings are preliminary and are to be interpreted with caution due to sample size, but results merit continued investigation. The intervention's primary components were coaching parents to praise their children, express enjoyment in interactions, follow the

child's lead during playtime, and maintain mutual involvement in a shared activity. Findings across measurement modalities indicate that the effects of the intervention expanded beyond these primary components. Mothers reported more openness and acceptance toward their children and more positive involvement with them as well as better communication and mutual understanding. Perhaps more powerfully, mothers *demonstrated* more comfort in interactions with their children and more promotion of children's autonomy, creativity, and exploration. Children, too, felt the effects of their mothers' coaching. They were happier and more comfortable interacting with their mothers and reported positive relationship changes.

Baseline Relationships

Exploratory analyses of the relationship between parent and child behaviors on the Free play versus Tangram laboratory tasks yielded several significant findings. While overall Involvement and overall Negativity were positively correlated between the two tasks, some ratings showed differential patterns. Children showed significantly more positive affect and less tension on the unstructured Free play task. Parents were also more engaged and less intrusive in Free play. These findings underscore the rationale for using pretend play as a relationship-building modality in the ADHD population. More structured parent-child activities such as board games, puzzles, or crafts may be less effective due to imposed task demand and structure.

Exploratory analyses examining baseline relationships between play skills and parent-child relationship variables yielded some unexpected findings. Several play scale scores were negatively related to parent-reported and child-reported relationship variables. More organized and imaginative play was associated with more child-reported

behavior/discipline problems with parents. Less variety of expressed affect in play was related to higher parent-child relationship quality. Given the high number of baseline correlations explored and the relatively small sample size, it is possible that these relationships were found by chance. Alternatively, children who have more sophisticated cognitive abilities or less temperamental defensiveness may show both higher cognitive scores in play and more accurate reporting of parent-child relationship difficulties. It is also possible that children who display more hyperactive and impulsive behaviors are less inhibited and more creative in play. For example, a child who is talkative, emotionally reactive, and uninhibited may display problematic behaviors such as talking back or arguing with parents. The same child may be verbally expressive in play, with greater ability to create novel ideas and express a variety of emotions in play.

There is some evidence in the pretend play literature that children's expressive pretend play features are negatively associated with teacher ratings of child adjustment (Yates & Marcelo, 2014). Specifically, this study found that among Black preschoolers, expressive features of pretend play (imagination, negative affect expression) were associated with teacher ratings of less peer acceptance, less school preparedness, and more teacher-child conflict. These relationships were not found for non-Black children. However, in the laboratory task, play for both Black and non-Black children was positively related to ego resilience. It is possible that in the present sample, coders interpreted creativity, enthusiasm, and expressiveness as indicative of positive play skills, whereas mothers interpreted these same behaviors as indicative of children's ADHD symptoms and related problem behavior. Future research should further investigate these findings.

Refining the Play Intervention

Overall, this play-based, parent-child relationship intervention was a successful medium for coaching parents in improving the relationship with their children. Some aspects of the intervention protocol may be refined in the future for improved clarification and efficacy of the intervention. Prior to beginning the intervention, it may be beneficial to clarify with parents the focus on relationship-building rather than behavior management. A couple of parents expressed a desire for assistance with behavior management strategies, which the present intervention is not designed to address. It may also be helpful to discuss with parents upfront the theme of aggression in children's play. This theme emerged with almost every participant, and parents are overall distressed by children's expressions of negative affect, specifically aggression, in play. It was beneficial to review with parents the finding that aggression in play is not related to actual aggression and has in fact been shown to relate to pro-social classroom behavior (Fehr & Russ, 2013).

During the intervention, some parents had difficulty becoming comfortable with pretend play. For these parents, it was helpful to specifically address their discomfort and brainstorm ways to be involved in the play interaction that felt more comfortable. Some parents found it helpful to focus on one element of interaction at a time, such as modeling affect expression or summarizing the child's story. It also became evident that some parents had a different style of play than facilitators. Facilitators tended to be highly energetic and "silly," which was difficult for some parents to replicate. Normalizing and discussing these differences was helpful for promotion of parents' comfort in play. A few dyads never became completely comfortable with the pretend play medium. It may be

helpful to discuss broader take-away points after the intervention that help parents to find the most comfortable and beneficial ways to improve the parent-child relationship. For example, parents could be encouraged to 1) Choose activities that allow for one-on-one time away from distractions like screens or siblings; 2) Remember to work in consistent praise and expressions of enjoyment into the activity, and 3) Avoid too much emphasis on performance or the child's abilities, as it is more effective to praise effort and ideas than skill.

A final area for refinement may be to include in the intervention manual examples for facilitators of in-session coaching prompts. While more detailed discussion of coaching tips after each session is helpful and important, in vivo coaching is a crucial element of the intervention. It can be difficult to coach parents without disrupting the flow of the dyad's play and without calling the child's attention to coaching, so a series of short prompts were developed to help facilitators coach parents during play interactions. These include, "Find a way to work in some praise," "This would be a good place to summarize," "Follow his lead," and "Describe what he's doing." Additional prompts may also be added based on the needs of each dyad.

Limitations and Future Directions

A few limitations of the present study should be considered while interpreting results and determining future directions. One limitation of the current study is the small sample size, which yields low statistical power for detecting group differences. Descriptions of intervention effects are preliminary and should be interpreted with caution, but the promising results suggest that implementation of the intervention with a larger sample is warranted. Given high levels of parent satisfaction as well as preliminary

results suggesting its efficacy, the parent-child relationship intervention may be a promising first module of treatment for young children diagnosed with ADHD. A larger sample size would allow for a more thorough examination of intervention effects.

Due to the use of multiple methods to fully assess the parent-child relationship, there were a large number of analyses conducted to examine intervention effects. Primary analyses were limited to the variables included in hypotheses. The number of analyses increases the possibility of finding effects by chance, but effects were consistently in the direction hypothesized. In addition, parents' self-report of satisfaction with the intervention carries inherent biases based on their participation and completion of the study. Mothers who attended all intervention sessions and were invested in the program are more likely to report positive outcomes and satisfaction. However, observation of parent-child relationship change on laboratory-based measures suggests that true change likely occurred in most dyads.

Another limitation of the present study was lack of standardization of the Activities with My Child worksheet. Because parents were able to report on a different set of activities at each time point, it was not possible to compare average time spent in each activity or average level of enjoyment of each activity before and after the intervention. This worksheet could be revised to collect a baseline set of typical parent-child activities that are rated for frequency and enjoyment at baseline and outcome. It would be useful to include this worksheet in future parent-child relationship assessment, as it collects information relevant to the behavioral domain of shared activities/interest and involvement with children.

Time restrictions limited the ability to collect follow-up data from mother-child dyads. Although initial outcome assessments indicated improvements in the parent-child relationship, it is unknown whether these improvements persist over time. One previous study using Russ and colleagues' (2004) pretend play intervention has shown effects persisting at a 2-8 month follow-up (Moore & Russ, 2008). However, the present study targeted relationship change rather than play skills, so follow-up would establish whether the play-based intervention could generalize and sustain relationship change over time.

The sample in the present study is limited to mothers and their sons and therefore intervention effects cannot be presumed to generalize to father-son interactions or to female children with ADHD. Families were also generally highly motivated for treatment. Most participants were newly diagnosed and may have begun other treatments in conjunction with study participation. Data regarding medication status of study participants was not collected in the present study, so it is possible that initiation of medication or other treatments produced confounding effects for some participants.

Given the promising results of the present study, further investigation of the parent-child relationship intervention is warranted. Based on clinical observation of dyads, it may be possible that the intervention is most effective within specific clinical profiles. For example, mothers of the youngest boys (age 6) typically described the most progress and best outcomes. It may be that the intervention is most effective in younger boys who may be more open to pretend play and who may have fewer negative interactive patterns established with mothers. In addition, the largest gains were typically observed when the mother rated the dyad's pre-intervention relationship quality as lower.

The intervention may be most effective, then, for dyads with acknowledged relationship difficulties.

More in-depth analysis of parent and child behaviors throughout the course of each interaction may help to clarify reciprocal effects of specific behaviors. For example, are children more responsive to descriptive statements or to questions? Do children respond differently to praise from facilitators compared to praise from their mothers? The intervention may also be tested in different populations at risk for parent-child relationship strain. The intervention could target children with anxiety in order to create more positivity and security in the parent-child relationship. It could also be used with children in the hospital setting to restore a sense of comfort, provide distraction, and facilitate processing of difficult situations. Future research may benefit from incorporating multi-method assessment of the parent-child relationship to more fully understand how interventions change different aspects of the relationship.

Table 1: Measures

Measure	Subscales	Type	Construct
Parent-Child Relationship Inventory	Involvement Communication Limit-Setting Autonomy	Self-Report – Parent	Parent-Child Relationship
Parent Report of Parental Behavior Inventory – Revised	Warmth/Acceptance Behavioral Control Psychological Control	Self-Report – Parent	Parent-Child Relationship
Parent-Child relationship quality rating	None	Self-Report – Parent	Parent-Child Relationship
Daily Conversation rating	None	Self-Report – Parent	Parent-Child Relationship
Tangram task	Involvement Negativity	Laboratory task – Parent-child	Parent-Child Relationship
Free play task	Involvement Negativity	Laboratory task – Parent-child	Parent-Child Relationship
Mutual enjoyment rating	None	Laboratory task – Parent-Child	Parent-Child Relationship
Activities with my Child worksheet	Total number Frequency Enjoyableness	Self-Report – Parent	Parent-Child Relationship
Social Adjustment Inventory for Children & Adolescents	Relationship with Mother Problems with Parents	Self-Report – Child	Parent-Child Relationship
Affect in Play Scale	Imagination Organization Comfort Positive Affect Negative Affect Frequency of Affect	Observational – Child	Pretend play

	Variety of Affect		Feasibility
Parent Acceptability Survey	None	Self-Report – Parent	Feasibility
Client Satisfaction Questionnaire	None	Self-Report – Parent	Feasibility

Table 2: Feasibility Data

Measure Item	N	Mean *(SD)*	Range
Home play sessions	20	4.47 *(1.61)*	2-6
Parent Acceptability Survey	19	17.53 *(2.60)*	13-20
I enjoyed	19	3.76 *(.44)*	3-4
Child enjoyed	19	3.76 *(.44)*	3-4
Relationship changed	19	3.53 *(.62)*	2-4
Child's behavior changed	19	3.06 *(.75)*	2-4
My behavior changed	19	3.41 *(.71)*	2-4
Client Satisfaction Questionnaire	19	28.41 *(3.71)*	18-32
Program Quality	19	3.65 *(.61)*	2-4
Kind of help I wanted	19	3.41 *(.62)*	2-4
Needs met	19	3.24 *(.66)*	2-4
Refer friend	19	3.76 *(.44)*	3-4
Satisfied with help	19	3.53 *(.62)*	2-4
Helped deal with problems	19	3.47 *(.62)*	2-4
Satisfied overall	19	3.76 *(.44)*	3-4
Come again	19	3.59 *(.62)*	2-4

Table 3: Waitlist and Intervention Descriptive Statistics

Measure Subscale/Variable	N	Waitlist Mean *(SD)*	Range	N	Intervention Mean *(SD)*	Range
Parent-Child Relationship Inventory						
Involvement	10	46.70 *(11.99)*	35-68	9	47.22 *(10.41)*	33-59
Communication	10	41.00 *(10.33)*	27-60	9	42.11 *(10.96)*	33-68
Limit Setting	10	43.70 *(6.00)*	37-57	9	48.44 *(6.33)*	37-59
Autonomy	10	49.90 *(6.30)*	38-56	9	54.11 *(9.93)*	41-72
Parent Report of Parental Behavior Inventory						
Warmth/Acceptance	10	26.90 *(3.32)*	21-30	10	27.90 *(3.00)*	21-30
Psychological Control	10	14.40 *(1.58)*	11-17	10	12.80 *(2.30)*	11-18
Behavioral Control	10	22.40 *(1.54)*	20-26	10	22.60 *(1.43)*	20-26
Parent-Child Relationship Quality rating	10	6.00 *(2.26)*	3-9	10	7.*60 (1.51)*	5-9
Daily Conversation rating [a]	10	68.00 *(13.17)*	50-90	10	46.00 *(18.38)*	20-70
Activities with My Child						
Total Number of Activities	10	6.70 *(1.42)*	4-8	10	6.70 *(1.57)*	4-8
Average Frequency	10	.77 *(.43)*	.20-1.25	10	1.18 *(.41)*	.67-1.75
Average Enjoyableness	10	.67 *(.47)*	.13-1.50	10	.46 *(.36)*	0-1.33
Tangram						
Negativity	10	3.12 *(1.48)*	1.29-6.14	10	2.31*(1.38)*	.43-5.71
Involvement	10	4.75 *(1.10)*	3.00-6.20	10	4.48 *(1.58)*	2.20-6.60
Free play						
Negativity	10	2.07 *(.81)*	.43-3.43	10	1.80 *(.78)*	.57-3.29
Involvement	10	2.75 *(.79)*	1.50-4.50	10	1.95 *(1.34)*	0-4.00

Mutual Enjoyment	10	3.10 *(.99)*	1-5	10	2.40 *(.84)*	1-4
Social Adjustment Inventory for Children and Adolescents						
Relationship with Mother	10	5.00 *(1.56)*	3-8	10	4.10 *(1.60)*	3-8
Problems with Parents	10	6.30 *(3.30)*	4-13	10	7.00 *(2.91)*	4-14
Affect in Play Scale						
Organization	10	1.80 *(.92)*	1-4	10	2.60 *(1.58)*	1-5
Imagination	10	2.50 *(.97)*	1-4	10	2.70 *(1.06)*	1-4
Comfort	10	3.40 *(1.58)*	1-5	10	3.30 *(1.34)*	1-5
Frequency of Affect	10	18.30 *(23.22)*	0-60	10	16.50 *(17.70)*	0-59
Variety of Affect	10	3.00 *(2.54)*	0-6	10	3.70 *(2.50)*	0-7
Positive Affect	10	6.60 *(7.73)*	0-19	10	7.80 *(6.58)*	0-19
Negative Affect	10	11.70 *(17.33)*	0-42	10	8.70 *(12.50)*	0-40

[a]: Percent of daily conversation characterized by reminders/corrections (parent self-report)

Table 4: Efficacy: Between-Group One-Way ANOVA

Measure Subscale	*df* *(between, within)*	*F*	η^2	*p*
Parent-Child Relationship Inventory				
Involvement	1,17	.01	.00	.92
Communication	1,17	.05	.00	.82
Limit Setting	1,17	2.81	.13[b]	.11
Autonomy	1,17	3.66	.16[a]	.07
Parent Report of Parental Behavior Inventory				
Warmth/Acceptance	1,18	.50	.03	.49
Psychological Control	1,18	3.29	.14[a]	.09
Behavioral Control	1,18	.08	.00	.78
Parent-Child Relationship Quality rating	1,18	3.47	.15 [a]	.08
Daily Conversation rating	1,18	9.47**	.32 [a]	.006
Activities with My Child				
Total Number of Activities	1,18	.00	.00	1.00
Average Frequency	1,18	4.73*	.19 [a]	.04
Average Enjoyableness	1,18	1.27	.06 [b]	.27
Tangram				
Negativity	1,18	1.56	.07 [b]	.23
Involvement	1,18	.87	.01	.36
Free play				
Negativity	1,18	.59	.03	.45
Involvement	1,18	2.64	.12 [b]	.13

Mutual Enjoyment	1,18	2.88	.13 [b]	.11	
Social Adjustment Inventory for Children and Adolescents					
Relationship with Mother	1,18	1.62	.08 [b]	.22	
Problems with Parents	1,18	.25	.01	.62	

* $p < .05$, ** $p < .01$

[a] = large effect size; [b] = medium effect size

Table 5: Baseline and Outcome (Pre-Post) Descriptive Statistics

Measure Subscale/Variable	N	Baseline Mean *(SD)*	Range	N	Outcome Mean *(SD)*	Range
Parent-Child Relationship Inventory						
Involvement	20	45.40 *(9.96)*	30-68	19	47.74 *(10.54)*	33-72
Communication	20	40.65 *(10.17)*	27-60	19	44.00 *(10.53)*	25-58
Limit Setting	20	43.80 *(8.02)*	25-66	19	45.63 *(6.09)*	37-59
Autonomy	20	49.80 *(8.10)*	38-70	19	50.00 *(8.63)*	38-72
Parent Report of Parental Behavior Inventory						
Warmth/Acceptance	20	26.80 *(3.00)*	21-30	20	27.60 *(2.95)*	21-30
Psychological Control	20	14.45 *(2.67)*	11-24	20	13.40 *(2.28)*	11-18
Behavioral Control	20	22.35 *(2.01)*	20-26	20	22.25 *(1.89)*	19-27
Parent-Child Relationship Quality rating	20	5.75 *(2.07)*	3-9	20	7.*50 (1.50)*	4-9
Daily Conversation rating	20	65.25 *(16.66)*	30-90	20	55.50 *(20.89)*	20-90
Activities with My Child						
Total Number of Activities	20	6.65 *(1.53)*	4-8	20	6.40 *(1.54)*	4-8
Average Frequency	20	.86 *(.45)*	0-1.67	20	.94 *(.44)*	.14-1.75
Average Enjoyableness	20	.64 *(.41)*	0-1.50	20	.50 *(.35)*	0-1.33
Tangram						
Negativity	19	3.07 *(1.45)*	1.00-6.14	20	2.39 *(1.38)*	.43-6.14
Involvement	19	4.52 *(.91)*	3.00-6.20	20	4.26 *(1.58)*	2.20-7.20
Free play						
Negativity	20	2.14 *(.72)*	.43-3.57	20	1.89 *(.75)*	.57-3.71
Involvement	20	3.00 *(.86)*	1.50-4.50	20	2.25 *(1.13)*	0-4.00

Mutual Enjoyment	20	3.00 *(.86)*	1-5	20	2.45 *(.76)*	1-4
Social Adjustment Inventory for Children and Adolescents						
Relationship with Mother	20	5.10 *(1.86)*	3-8	20	4.55 *(1.64)*	3-8
Problems with Parents	20	7.05 *(3.10)*	4-13	20	6.40 *(2.58)*	4-14
Affect in Play Scale						
Organization	20	2.10 *(1.25)*	1-5	20	2.35 *(1.46)*	1-5
Imagination	20	2.40 *(1.10)*	1-5	20	2.65 *(.99)*	1-4
Comfort	20	3.00 *(1.59)*	1-5	20	3.25 *(1.29)*	1-5
Frequency of Affect	20	13.95 *(18.68)*	0-60	20	13.65 *(14.20)*	0-59
Variety of Affect	20	2.70 *(2.27)*	0-6	20	3.40 *(2.26)*	0-7
Positive Affect	20	6.05 *(7.74)*	0-25	20	6.10 *(5.82)*	0-19
Negative Affect	20	7.90 *(12.99)*	0-42	20	7.55 *(9.95)*	0-40

Table 6: Efficacy: Within-Group Repeated Measures ANOVA

Measure Subscale	*df* *(between, within)*	*F*	η_p^2	*p*
Parent-Child Relationship Inventory				
Involvement	1,18	2.98	.14[a]	.10
Communication	1,18	5.41*	.23[a]	.03
Limit Setting	1,18	1.25	.07[b]	.28
Autonomy	1,18	.00	.00	.97
Parent Report of Parental Behavior Inventory				
Warmth/Acceptance	1,19	3.62	.16[a]	.07
Psychological Control	1,19	6.45*	.25[a]	.02
Behavioral Control	1,19	.10	.01	.76
Parent-Child Relationship Quality rating	1,19	21.65**	.53[a]	.000
Daily Conversation rating	1,19	5.54*	.23[a]	.03
Activities with My Child				
Total Number of Activities	1,19	.66	.03	.43
Average Frequency	1,19	.53	.03	.47
Average Enjoyableness	1,19	5.36*	.22[a]	.03
Tangram				
Negativity	1,18	5.70*	.24[a]	.03
Involvement	1,18	.29	.02	.60
Free play				
Negativity	1,19	1.15	.06[b]	.30
Involvement	1,19	5.74*	.23[a]	.03

Mutual Enjoyment	1,19	6.07*	.24 [a]	.03	
Social Adjustment Inventory for Children and Adolescents					
Relationship with Mother	1,19	2.26	.11 [b]	.15	
Problems with Parents	1,19	3.60	.16 [a]	.07	
Affect in Play Scale					
Organization	1,19	1.51	.07 [b]	.23	
Imagination	1,19	1.73	.08 [b]	.20	
Comfort	1,19	1.20	.06 [b]	.29	
Frequency of Affect	1,19	.01	.00	.94	
Variety of Affect	1,19	3.09	.14 [a]	.10	
Positive Affect	1,19	.00	.00	.98	
Negative Affect	1,19	.02	.00	.90	

* $p < .05$, ** $p < .01$

[a] = large effect size; [b] = medium effect size

Table 7: Baseline Laboratory Tasks Descriptive Statistics

Subscale Rating	N	Tangram Mean *(SD)*	Range	N	Free play Mean *(SD)*	Range
Negativity Subscale	19	2.89 *(1.40)*	1.00-5.86	20	2.13 *(.82)*	1.00-3.71
General Mood	19	2.63 *(1.50)*	1-6	20	2.25 *(.91)*	1-4
Child's Affect	19	3.37 *(1.67)*	1-6	20	1.90 *(1.02)*	1-4
Child's Tension	19	4.06 *(1.63)*	2-6	20	1.75 *(1.12)*	0-4
Response to Parent	19	2.47 *(1.84)*	0-6	20	2.30 *(1.22)*	1-5
Parent's Affect	19	2.68 *(1.64)*	1-7	20	2.35 *(1.23)*	0-5
Parent's Tension	19	2.63 *(1.57)*	0-6	20	1.95 *(1.15)*	1-6
Response to Child	19	2.47 *(1.39)*	0-5	20	2.50 *(.76)*	1-4
Involvement Subscale	19	4.49 *(.92)*	3.00-6.40	20	3.05 *(.83)*	1.50-4.50
General Degree of Involvement/ Engagement	19	4.32 *(1.25)*	2-7	20	3.30 *(1.87)*	0-6
Intrusiveness/Unsolicited Help	19	3.63 *(1.30)*	2-7	20	2.95 *(1.32)*	1-6
Touching of Tangram Pieces	19	5.00 *(1.33)*	2-7	20		
Parent Position/Posture	19	5.58 *(1.02)*	3-7	20		
Parent's Focus	19	4.05 *(1.43)*	1-6	20		

Table 8: Baseline Laboratory Tasks Correlations

		Tangram Negativity							
		General Mood	Parent's Affect	Parent's Tension	Response to Child	Child's Affect	Child's Tension	Response to Parent	Overall Negativity
Free Play Negativity	General Mood	.29	.51*	.22	.33	.29	.15	.40	.53*
	Parent's Affect	.36	.61**	.34	.50*	.42	.32	.46*	.49*
	Parent's Tension	.13	.41	.07	.16	.34	.16	.25	.38
	Response to Child	.37	.70**	.44*	.36	.38	.26	.39	.59**
	Child's Affect	.14	.35	.13	.27	.10	.11	.21	.31
	Child's Tension	.20	.16	.24	.17	.10	.07	.26	.28
	Response to Parent	.32	.49*	.33	.24	.31	.19	.42	.45
	Overall Negativity	.42	.64**	.45		.45*	.32	.53*	.56*

p < .05, ** p < .01

		Tangram Involvement					
		General Degree of Involvement	Unsolicited Help	Touching of Tangram Pieces	Parent Position/Posture	Parent's Focus	Overall Involvement
Free Play Involvement	General Degree of Engagement	-.20	-.20	-.09	-.22	.24	-.01
	Parent Intrusiveness	.53*	.63**	.43	.52*	-.31	.34
	Overall Involvement	.25	.30	.30	.16	.11	.31

* p < .05, ** p < .01

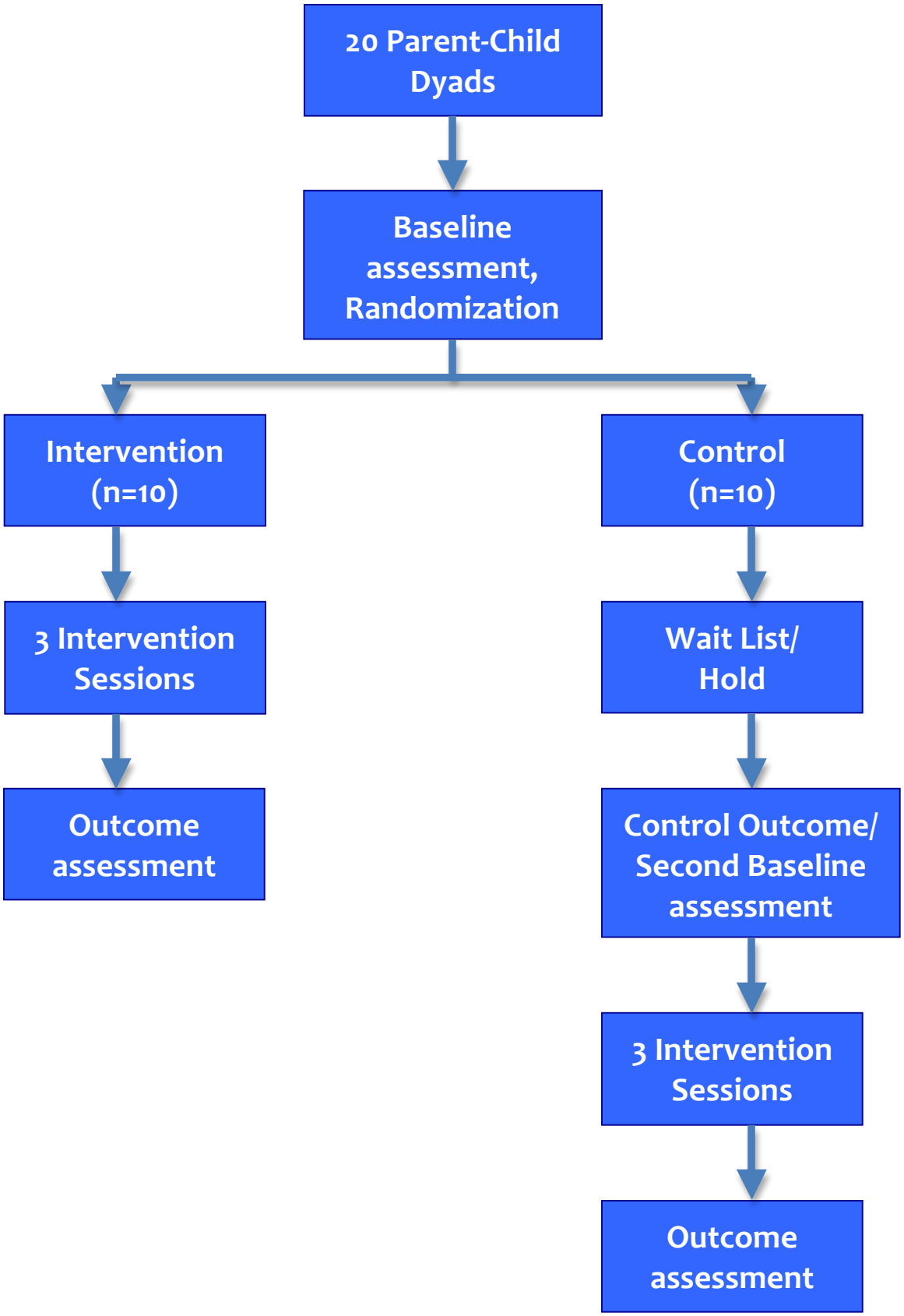
Table 9: Baseline Laboratory Tasks Within-Group Repeated Measures ANOVA

Subscale Rating	*df* *(between, within)*	*F*	η_p^2	*p*
Negativity Subscale	1,18	8.07*	.31[a]	.01
General Mood	1,18	1.35	.07[b]	.26
Child's Affect	1,18	12.65**	.41[a]	.00
Child's Tension	1,18	29.97**	.64[a]	.00
Response to Parent	1,18	.30	.02	.59
Parent's Affect	1,18	1.06	.06[b]	.32
Parent's Tension	1,18	2.76	.13[b]	.11
Response to Child	1,18	.00	.00	1.00
Involvement Subscale	1,18	36.92**	.67[a]	.00
General Degree of Involvement/ Engagement	1,18	4.19	.19[a]	.06
Intrusiveness/Unsolicited Help	1,18	3.74	.17[a]	.07

* $p < .05$, ** $p < .01$

[a] = large effect size; [b] = medium effect size

Figure 1


20 Parent-Child Dyads
Baseline assessment, Randomization
Intervention (n=10)
Control (n=10)
3 Intervention Sessions
Wait List/ Hold
Outcome assessment
Control Outcome/ Second Baseline assessment
3 Intervention Sessions
Outcome assessment

Appendix A: Measures

*Appendix: Affect in Play Scale**

Sandra W. Russ
Case Western Reserve University

The Affect in Play Scale (APS) consists of a standardized play task and a criterion-based rating scale. The APS is appropriate for children 6–10 years of age, which includes children in Grades 1 through 3.

The Affect in Play Scale measures the amount and types of affect expression in children's fantasy play. The scale rates the frequency and intensity of affective expression, variety of affect categories, quality of fantasy, imagination, comfort in play, and integration of affect. Play sessions are 5-minute standardized puppet play periods.

THE APS PLAY TASK

The play task consists of two human puppets, one boy and one girl, and three small blocks that are laid out on a table (see Fig. A.1 for puppets). The puppets have neutral facial expressions. Both Caucasian and African-American versions of puppets are used, depending upon the child population. The blocks are brightly colored and of different shapes. The play props and instructions are unstructured enough so that individual differences in play can emerge. The task is administered individually to the child and the play is videotaped. The instructions for the task are:

> I'm here to learn about how children play. I have here two puppets and would like you to play with them any way you like for five min-

FIG. A.1. Puppets for the Affect in Play Scale.

utes. For example, you can have the puppets do something together. I also have some blocks that you can use. Be sure to have the puppets talk out loud. The video camera will be on so that I can remember what you say and do. I'll tell you when to stop.

The child is told when there is one minute left with the instruction, "You have one minute left."

Prompts and Special Circumstances

1. If the child does not know to put on the puppets, tell the child to put them on. Let the child know when they can start and start timing from that point.
2. If the child does not start to play, prompt the child after 30 seconds by saying "Go ahead, have the puppets do something together." Two prompts of this sort can be given. After two minutes of no play, the task should be discontinued.
3. If the child plays but does not have the puppets talk, prompt with "Have the puppets talk out loud so I can hear" after 30 seconds. Two prompts can be given, spaced about one minute apart.
4. If a child has been playing, but then stops before time is up, prompt with "You still have time left, keep on playing." Prompt a second time if needed with "Keep on playing, I'll tell you when to stop." Most children who already played will be able to continue with prompts. If they cannot, then discontinue after two minutes of no play.
5. Be sure not to give any verbal reinforcement during the child's play. It is important however to be attentive and watch the child and be interested. After the child has finished, say "That was good" or "That was fine."

6. Be sure to stop after five minutes. A wristwatch with a second hand is adequate. Time in an unobtrusive manner.

THE APS RATING SCALE

The APS measures the amount and types of affective expression in children's fantasy play. The APS measures affect themes in the play narrative. Both emotion-laden content and expression of emotion in the play are coded. The APS also measures cognitive dimensions of the play, such as quality of fantasy and imagination.

Both Holt's (1977) Scoring System for Primary Process on the Rorschach and Singer's play scales were used as models for the development of the scoring system. In addition, the work of Izard (1977) and Tomkins (1962, 1963) was consulted to ensure that the affect categories were comprehensive and covered all major types of emotion expressed by children in the 4–10 age group.

There are three major affect scores for the APS:

1. *Total frequency of units of affective expression.* A unit is defined as one scorable expression by an individual puppet. In a two puppet dialogue, expressions of each puppet are scored separately. A unit can be the expression of an affect state, an affect theme, or a combination of the two. An example, of an affect state would be one puppet saying "This is fun." An example of an affect theme would be "Here is a bomb that is going to explode." The expression can be verbal ("I hate you") or non-verbal (one puppet punching the other). The frequency of affect score is the total number of units of affect expressed in the five minute period. If non-verbal activity, such as fighting, occurs in a continuous fashion, a new unit is scored every five seconds.

2. *Variety of affect categories.* There are 11 possible affect categories. The categories are: Happiness/Pleasure; Anxiety/Fear; Sadness/Hurt; Frustration/Disappointment; Nurturance/Affection; Aggression; Competition; Oral; Oral Aggression; Sexual; Anal. The variety of affect score is the number of different categories of affect expressed in the 5-minute period. Affect categories can be classified as positive affect (Happiness, Nurturance, Competition, Oral, Sexual) and negative affect (Anxiety, Sadness, Aggression, Frustration, Oral Aggression, Anal). Another classification is primary process affect (Aggression, Oral, Oral Aggression, Sexual, Anal) and non-primary process affect (Happiness, Sadness, Anxiety, Frustration, Competition, Nurturance).

3. *Mean intensity of affective expression (1–5 rating).* This rating measures the intensity of the feeling state or content theme. Each unit of affect is rated for intensity on a 1–5 scale.

Organization

This rating scale measures the quality of the plot and the complexity of the story:

1. Series of unrelated events, no cause and effect, disjointed.
2. Some cause and effect; series of loosely related events.
3. Cause and effect, organized in a temporal sequence, but no overall integrated plot.
4. More cause and effect, close to an integrated plot.
5. Integrated plot with beginning, middle and end.

Imagination

This rating scaled measures the novelty and uniqueness of the play and the ability to pretend and use fantasy. Ability to transform the blocks and pretend with them.

1. No symbolism or transformations, no fantasy.
2. One or two instances of simple transformations. No novel events. Very few fantasy events in the story.
3. Three or more transformations. Some fantasy and pretend events, such as "Let's play house." Some variety of events. No novel events or events removed from daily experience.
4. Many transformations. Variety of events. Some novel fantasy events. Some fantasy with unusual twists or removed from daily experience such as living in a castle or building a space ship. Other characters in addition to the two puppets are included in the story.
5. Many transformations and many fantasy themes. Novelty of ideas is evident. Fantasy has new twists and often has elements outside of daily experience.

Comfort

A global rating for the child's comfort in play measures the involvement of the child in the play and the enjoyment of the play. The lower end of the scale rates comfort more than enjoyment and the higher end of the scale weighs pleasure and involvement.

1. Reticent; distressed. Stops and starts.
2. Some reticence and stiffness.
3. OK but not enjoying and involved. Continues to play.
4. Comfortable and involved.
5. Very comfortable, involved and enjoying the play.

Questionnaire for Parents (PBI-30)

What Raising My Child is Like

Parents have different ways of trying to raise their children. We would like you to describe some of the ways you handle this child in trying to raise him or her. Please read each statement on the following pages and circle the answer that most closely describes the way you act towards this child. **Please answer each question as honestly and as accurately as you can.**

If you think that the statement describes a parent **NOT LIKE** yourself, circle **NL.**

If you think that the statement describes a parent **SOMEWHAT LIKE** yourself, circle **SL**.

If you think that the statement describes a parent **A LOT LIKE** yourself, circle **L**.

I AM A PARENT WHO…

1). . .makes my child feel better after talking over his or her worries with him or her	NL	SL	L
2). . .tells my child all the things I have done for him or her.	NL	SL	L
3). . .believes in having a lot of rules and sticking with them.	NL	SL	L
4). . .smiles at my child very often.	NL	SL	L
5). . .says to my child if he or she really cared for me, they would not do things that cause me to worry.	NL	SL	L
6). . .insists that my child must do exactly as he or she is told.	NL	SL	L
7). . .is able to make my child feel better when he or she is upset.	NL	SL	L
8). . .is always telling my child how he or she should behave.	NL	SL	L
9). . .is very strict with my child.	NL	SL	L
10). .enjoys doing things with my child.	NL	SL	L
11). .would like to be able to tell my child what to do all the time.	NL	SL	L
12)… gives hard punishment.	NL	SL	L
13).. .cheers my child up when he or she is sad.	NL	SL	L
14).. .wants to control whatever my child does.	NL	SL	L
15). ..is easy with my child	NL	SL	L
16). ..gives my child a lot of care and attention.	NL	SL	L
17). .is always trying to change my child.	NL	SL	L
18).. .lets my child off easy when he or she does something wrong.	NL	SL	L
19). ..makes my child feel like he or she is the most important person in my life.	NL	SL	L
20). .. only keeps rules when it suits me.	NL	SL	L
21) … gives as much freedom as my child wants.	NL	SL	L
22) … believes in showing love for my child.	NL	SL	L
23) … is less friendly with my child, if they do not see things my way.	NL	SL	L

24) … lets my child go places without asking.	NL	SL	L
25) … often praises my child.	NL	SL	L
26) … will avoid looking at my child when they have disappointed me.	NL	SL	L
27) … lets my child go out any evening they want.	NL	SL	L
28) … is easy to talk to.	NL	SL	L
29) … if my child hurts my feelings, I stop talking to them until they please me again.	NL	SL	L
30) … lets my child do anything they want.	NL	SL	L

Activities with my Child

Please list below all the activities you engage in with your child on a regular basis, at least once per month. Activities should involve mutual engagement of you and your child, such as playing a game, rather than a child-only activity such as soccer practice (unless you are a coach). Activities can involve other people (i.e. your family), as long as both you and your child are present.

Examples include: Playing outside; Running errands; Playing a family game; Watching a movie; Helping with homework; Family party; et cetera.

For each activity, please indicate with a check mark how often you and your child engage in the activity and how enjoyable you find the activity when your child is present.

	Frequency			**Enjoyable**		
Activity	Daily	Weekly	Monthly	Very much	Somewhat	Not at all

Please help us improve our intervention program by answering some questions about the Coaching Play study. We are interested in your honest opinions, whether they are positive or negative. *Please answer all of the questions.* We also welcome your comments and suggestions. Thank you very much, we appreciate your help.

1. How would you rate the quality of the program?

4	3	2	1
Excellent	Good	Fair	Poor

2. Did you get the kind of help you wanted?

1	2	3	4
No, definitely not	No, not really	Yes, generally	Yes, definitely

3. To what extent has our program met your needs?

4	3	2	1
Almost all of my needs have been met	Most of my needs have been met	Only a few of my needs have been met	None of my needs have been met

4. If a friend were in need of similar help, would you recommend our program to him/her?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

5. How satisfied are you with the help you received?

1	2	3	4
Quite dissatisfied	Indifferent or mildly dissatisfied	Mostly satisfied	Very satisfied

6. Has the program helped you to deal more effectively with your problems?

4	3	2	1
Yes, they helped a great deal	Yes, they helped somewhat	No, they didn't really help	No, they seemed to make things worse

7. In an overall, general sense, how satisfied are you with the program?

4	3	2	1
Very satisfied	Mostly satisfied	Indifferent or mildly dissatisfied	Quite dissatisfied

8. If you were to seek help again, would you come back to our program?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

Comments:

Acceptability Survey

Please rate the following aspects of this study on a scale from 1 (Strongly Disagree) to 4 (Strongly Agree).

	Strongly Disagree (1)	*Disagree (2)*	*Agree (3)*	*Strongly Agree (4)*
I enjoyed participating in the program.	1	2	3	4
My child enjoyed participating in the program.	1	2	3	4
My relationship with my child has changed for the better.	1	2	3	4
My child's behavior has changed for the better.	1	2	3	4
My behavior has changed for the better.	1	2	3	4

What, if anything, has changed in your relationship with your child?

Were there any barriers to participation that made it difficult?

Have you noticed any other changes in your child after the program (e.g. relationships with siblings/peers; behavior at home/school)?

Additional Comments/Feedback:

Building Relationships through Play: Overview

Background: This intervention program is about the relationships between children with ADHD and their parents. Parents of children with ADHD often describe strained relationships with their children. Many feel that they have to manage their children's behavior so often that it is difficult to enjoy time with their child. These sentiments have been demonstrated in research, which has shown that on average, parents of children with ADHD experience more stress and less positive relationships with their children than parents of children without ADHD.

Pretend Play: Pretend play happens when children playfully treat something as if it were something else. For example, a block may become a car or a TV. When children pretend, they develop imagination, fantasy, and emotion. Pretend play research has linked play skills to creativity, emotional control and awareness, mood, and even academic achievement. Pretend play is an enjoyable activity that parents and children can enjoy together.

Goal: The goal of this program is to teach parents about using playtime with their child to improve relationship quality.

Your Role: As part of the play intervention, you will participate in three, 30-minute sessions with your child and the program coordinator. During each session, you and your child will use a variety of toys provided to make up stories together. The program coordinator will work with you to create an experience of connectedness with your child. You will also learn new ideas about how to promote the development of your child's pretend play skills.

During each session, the coordinator will provide "story stems" for your child to begin to play. Examples include, "A story about a boy and mom/dad who go to outer space" and "A story about a boy who feels mad because he doesn't want to do his homework". The coordinator will begin the first session by playing out a few story stems as you observe, and you will transition into playing one-on-one with your child as the sessions progress.

For the three weeks between sessions, we will ask you to set aside special playtime at home with you and your child. We ask for two, 20-minute play times during each week between your sessions at Case Western. During these playtimes at home, we will ask you and your child to play one-on-one with your child's own toys, practicing the playtime skills you learn during your sessions.

PARENT-CHILD INTERVENTION MANUAL

Introduction to Intervention:

Session One: "My name is ___ and I am here to learn about how parents and kids play together. We have some toys to play with (show bag). When we meet, we will be making up stories about different things. First, you and I will make up some stories, and then you and your (mom/dad) will make up some stories."

Beginning of Sessions: "We are going to make up different stories using the toys on the table. We will make up a story and play it out with the toys. I'm going to play with you. Make the stories have a beginning, middle and an end and use lots of feelings in the story, like happy, sad, or angry. First we are going to make up a story about…"

Story Stems:

- Session 1:
  - A boy and mom/dad who go to the zoo
  - A boy who gets ready for school
  - A happy story about a boy who is going to a birthday party
  - A sad story about a boy whose pet runs away
  - Child's choice
- Session 2:
  - Having super powers
  - A boy who forgot to clean his room, but his mom/dad wants him to
  - A boy and a mom/dad who go on an adventure
  - A boy and mom/dad who want to go to the park, but it's raining and they have to stay home
  - Child's choice
- Session 3:
  - A boy and mom/dad who are going to the movies
  - A mad story about a boy who doesn't want to do his homework
  - A boy and mom/dad who go to outer space
  - A story about a boy who is upset because he can't find his favorite toy
  - Child's choice

Session 1:

- Review treatment rationale with parent (why pretend play makes a difference) (5 min)
  - Ask about the family, who lives at home
  - Ask parent what they'd like to improve about their relationship with the child
  - "Lots of parents describe that they spend so much time managing their child's behavior that their relationship with their child suffers and starts to feel more negative than positive. In children with ADHD, we can't take away the behavior management piece (e.g. reminders, corrections) because it's necessary, but we can introduce more positivity into the day.

That's what we're doing here, using something that's fun (play) to create a positive time in the day to connect with your child, without any of the reminders and corrections that go on during the rest of the day."

- Teach parent the prompts/Review prompts and elements from parent handout (5 min)
    - Review 3 main components: praise, enjoyment, engagement
- 2-5 story stems: Parent observes first half and participates in second half (30 min)
    - Researcher does first 2 stories, parent participates along with researcher for last 1-2 stories
- 5-minute review with parent, discussing session and giving feedback (5 min)
    - Structure: what went well, what you think you'd like to work on (ask parent to identify these elements, then provide your own observations/suggestions)
    - Assign homework, ask parent what toys they have available to use at home

Session 2:

- 5-minute review with parent, discussing homework from previous week and reminding what we're working on in the current session
- 2-5 story stems
- 5-minute review with parent, discussing session and giving feedback
    - Structure: what went well, what you think you'd like to work on

Session 3:

- 5-minute review with parent, discussing homework from previous week and reminding what we're working on in the current session
- 2-5 story stems
- Examiner observes and coaches parent, no participation in play unless necessary
- 5-minute review with parent, discussing session and giving feedback
    - Structure: what went well, what you think you'd like to work on

In-Session Fidelity Checklist

☐	*Model imagination/pretend
☐	*Model affect expression
☐	Praise child's play
☐	*Express enjoyment in play

*Note: In Session 3, parent should complete these actions.

Example Prompts/Reinforcement/Modeling

Praise
What a creative idea
That was cool how you used ___ to be something else
That was a really good story
I love how you ___

Enjoyment
It is so much fun playing with you
I love spending time together with you
Express positive affect: smiling, laughing

Engagement/Interaction
Modeling pretend (e.g. "We could use this block as the birthday present")
What happens first?
What happens next?
Summarizing story at various points
I can tell she is feeling (emotion) because she is (behavior).
Labeling feelings
Model affect and imagination
Can I play too?
Who should I be?

Toys for Intervention

- Male and female dolls
- Aggressive and non-aggressive animals (plastic and stuffed)
- Vehicles (car, jet ski, skis, skateboard, red wagon)
- Building blocks (wooden and Lego's)
- Props that go with dolls (instruments, books, hats, wigs, shoes)
- Prompt-specific toys: bedroom set, school desk/books

ID _____

In-Session Fidelity Checklist

Session 1:

☐	Model imagination/pretend
☐	Model affect expression
☐	Praise child's play
☐	Express enjoyment in play

Session 2:

☐	Model imagination/pretend
☐	Model affect expression
☐	Praise child's play
☐	Express enjoyment in play

Session 3:

☐	*Model imagination/pretend
☐	*Model affect expression
☐	Praise child's play
☐	*Express enjoyment in play

*Note: Parent should complete these actions.

Home Play Sessions

Instructions: Before our next meeting, please practice pretend play at home with your child. Please dedicate two, 20-minute play times for you and your child to play *one-on-one*, with minimal distractions. As a reminder, pretend play is non-electronic in nature and does not apply to structured games such as board games or puzzles. Good pretend play toys might include dolls, animals, cars, or Lego's. The most important thing is that you and your child have fun together!

Once the toys are out and your play time has begun, prompt your child to make up a story using the toys. Remember to let him direct the play, and follow his lead. If you have trouble getting started, feel free to use the prompts below. After each session, record the date you completed it and describe something positive from your interaction with your child.

"A story about a boy who lives in a castle"
"A story about a boy who has magic powers"
"A story about a boy who can talk to animals"

	Date	**Positive observation**
Play Time #1		
Play Time #2		

Questions/Comments:

Appendix E: Baseline Correlations with Play Scale Variables

	PCRI Involvement	PCRI Communication	PCRI Limit Setting	PCRI Autonomy	PRPBI Warmth/ Acceptance	PRPBI Psychological Control	PRPBI Behavioral Control	Relationship Quality rating	Daily Conversation rating
APS Organization	-.12	.12	-.10	.07	-.06	.22	.22	-.26	-.14
APS Imagination	-.22	-.02	-.21	.15	-.16	.13	.20	-.44*	.02
APS Comfort	-.20	-.20	-.09	.07	-.25	.13	.29	-.32	.22
APS Frequency of Affect	-.05	.05	-.01	.06	-.10	.00	.30	-.01	-.02
APS Variety of Affect	-.03	.15	-.25	.13	-.20	.28	.22	-.52**	.09
APS Positive Affect	-.24	.06	-.17	-.01	-.15	.25	.15	-.41*	.23
APS Negative Affect	-.31	-.19	.17	.31	-.14	-.20	.26	.04	.06

	Total Number of Activities	Average Frequency of Activities	Average Enjoyableness of Activities	SAICA Relationship with Mother	SAICA Problems with Parents	Tangram Negativity	Tangram Involvement	Free Play Negativity	Free Play Involvement
APS Organization	-.19	.48*	.05	.08	.43*	.08	-.30	.06	-.14
APS Imagination	-.07	.36	.26	-.05	.41*	-.14	-.16	.01	-.10
APS Comfort	.00	-.08	.22	-.26	.18	-.15	.22	-.23	.07
APS Frequency of Affect	-.02	.04	.02	.00	-.05	-.25	.15	-.33	-.09
APS Variety of Affect	.13	-.10	.38	-.15	.18	-.27	-.08	-.18	-.09
APS Positive Affect	-.09	.30	.29	.08	.27	-.33	-.13	-.24	-.15
APS Negative Affect	.03	-.08	-.09	-.18	-.22	.14	.24	-.22	-.14

* $p < .05$, ** $p < .01$

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