

Does Situation Type Moderate the Relationship Between Maternal Attention-Deficit/Hyperactivity Disorder (ADHD) Symptoms and Observed Parenting?

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Abstract

Previous research has found associations between parental attention-deficit/hyperactivity disorder (ADHD) symptoms and maladaptive parenting. In contrast, some suggest a “similarity-fit hypothesis,” in which equal levels of ADHD symptoms between parents and children may be associated with a shared behavioral tempo, which may result in a better “fit.” However, this theory has only been tested in a free-play situation (Psychogiou et al., 2008a). This study tested the “similarity-fit hypothesis” using two samples of children with ADHD and their mothers across two tasks to examine the extent situational context is associated with ineffective parenting. Mother-child dyads were observed in an unstructured free-play task and a structured homework task in two studies of parent-child interactions consisting of a total of 175 elementary-aged children with DSM-IV ADHD. A significant main effect for situation type on positive parenting and ineffective commands was found in Study 2. Mothers displayed higher rates of positive parenting and ineffective commands in the homework task compared to the free-play task. A trend-level interaction (Situation Type x Maternal ADHD symptoms) was found in Study 1. Probing the interaction revealed that higher levels of maternal ADHD symptoms predicted higher levels of ineffective commands in the homework task, but not in the free-play task. Although, our results were both consistent and inconsistent with the literature examining families where ADHD is present in children and parents, our study’s findings may contribute to the limited literature using observational measures to examine associations between maternal ADHD symptoms and parenting. Our results suggest the challenging nature of the structured homework task may tax a mother’s core symptoms of ADHD, which contrasts with the “similarity-fit hypothesis.” Further research testing the “similarity-fit hypothesis” is needed to determine the extent situational context impacts the relationship between maternal ADHD symptoms and parenting.

Keywords: Attention-deficit/hyperactivity disorder, observed parenting, parental ADHD

Introduction

Attention deficit/hyperactivity disorder (ADHD) has an estimated prevalence of 3-16% among school-aged youth (Brown et al., 2001; Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition – Text Revision (DSM-IV-TR); 2000; Faraone, Sergeant, Gillberg, & Biederman, 2003; Froehlich et al., 2007; Goldman, Genel, Bezman, & Slanetz, 1998; Lavigne, LeBailly, Hopkins, Gouze, & Binns, 2009; Polanczyk, de Lima, Horta, Biederman, & Rohde, 2007). DSM-IV-TR criteria for ADHD includes developmentally incongruent symptoms of symptoms of hyperactivity, impulsivity, and inattention present before age 7, coupled with impairment in functioning spanned across multiple settings, such as school, home, and work (DSM-IV-TR, 2000). One significant area of impairment for children with ADHD is negative parent-child interactions, including higher rates of maternal criticism and child deviant behavior and noncompliance, when compared to families of children without ADHD (Barkley, Anastopoulos, Guevremont, & Fletcher, 1992; Cunningham & Barkley, 1979; DuPaul, McGoey, Eckert, & VanBrakle, 2001; Mash & Johnston, 1982; Psychogiou, Daley, Thompson, & Sonuga-Barke, 2007b). These negative factors associated with families of children with ADHD highlight the significance of studying this population.

ADHD is also a highly heritable disorder, with a heritability rate estimated to be .76 (Faraone et al., 2005). Along with its high heritability rate, ADHD is a chronic disorder that persists well into adulthood, despite changes in symptom manifestation (Barkley, Fischer, Smallish, & Fletcher, 2002; Faraone et al., 2000, 2005). The ADHD diagnosis alone has also been found to increase the risk of ADHD in one’s own child (Biederman, Faraone, & Monuteaux, 2002). These

factors suggest that many families have both parents and children with ADHD. Consequently, maladaptive parenting is expected considering adults, especially mothers, with ADHD have significant difficulties with planning, remaining on task, attending to uninteresting tasks, and restlessness. These difficulties may be especially apparent in highly demanding situations, such as helping their child with homework (Prince & Wilens, 2000; Weiss, Hechtman, & Weiss, 2000).

Several studies provide support for an association between parental ADHD symptoms and reported maladaptive parenting. Banks, Ninowski, Mash and Semple (2008) found that mothers with higher ADHD symptoms reported less parenting efficacy (i.e., one's perception of their effectiveness as a parent), more parenting dissatisfaction, and more laxness and overreactivity towards their children. Even prenatally, mothers with higher ADHD symptoms reported having less positive expectations for their children, were less positive when evaluating their future parenting behaviors, and attended their prenatal checkups less regularly (Ninowski, Mash & Benzie, 2007). Chronis-Tuscano et al. (2008) found that for mothers of children with ADHD, mothers with higher ADHD symptoms reported lower levels of involvement and less positive parenting. In another study, mothers with a diagnosis of ADHD reported less monitoring of their child's behavior and less consistency in parenting and discipline, and had lower quality responses in a computerized problem solving task than mothers without ADHD (Murray & Johnston, 2006). Additionally, exposure to parental ADHD has been associated with more parent-reported family conflict and less family cohesion (Biederman et al., 2002). Psychogiou, Daley, Thompson, & Sonuga-Barke (2008b) also found a positive correlation between maternal ADHD symptoms and self-reported personal distress in parenting situations (e.g., "I tend to lose control during my child's emergencies") as measured on a subscale of the Interpersonal Reactivity Index (IRI) modified for parenting (Davis, 1983). In sum, there is considerable evidence that higher maternal ADHD symptoms are associated with maladaptive parenting (Banks et al., 2008; Biederman et al., 2002; Chronis-Tuscano et al., 2008; Murray & Johnston, 2006; Ninowski et al., 2007; Psychogiou et al., 2008a, 2008b, 2007a).

Studies that were not limited to parent self-report and included observations of parent-child interactions for families of children with ADHD have also found associations between higher parental ADHD symptoms and maladaptive parenting. In a study of children diagnosed with DSM-IV ADHD, less observed positive parenting and more commands given without an opportunity for a child to comply were related to higher levels of maternal symptoms of ADHD during a structured homework task (Chronis-Tuscano et al., 2008). In addition, maternal ADHD symptoms were positively correlated with negative parenting in a less structured free-play task in the same study (Chronis-Tuscano et al., 2008). In another observational study, Psychogiou, Daley, Thompson, and Sonuga-Barke (2008a) found a positive correlation between maternal ADHD symptoms and observed negative parenting, such as negative expressed emotion and negative communication, in a community sample of children.

In contrast, some claim there may be positive benefits for families in which both parent and child have higher ADHD symptoms. Psychogiou et al. (2008a) suggested a "similarity-fit hypothesis," in which elevated ADHD symptoms in mothers may be associated with increased understanding of their child's behavior and a shared behavioral tempo between the mothers and children which results in a better "fit." The "fit" is best, according to Psychogiou et al. (2008a), when both parent and child have equal levels of ADHD symptoms, either high or low. In a 2008 study by Psychogiou and colleagues, they found higher levels of self-reported positive involvement in families where both mothers and children had higher ADHD symptoms compared to families that were "mismatched" (i.e., lower maternal ADHD symptoms and higher child ADHD symptoms or vice versa). However, in a related study, when self-reported findings were tested observationally, maternal ADHD symptoms and observed positive and negative parenting were positively correlated in a 10-minute free-play at the child's home. In addition, a further test of the "similarity-fit hypothesis" was applied for fathers. Fathers with higher levels of ADHD symptoms reported more negative parenting, specifically poor monitoring, inconsistent discipline, and physical punishment (Psychogiou, Daley, Thompson, & Sonuga-Barke, 2007a). Thus, although there is modest yet mixed support for Psychogiou's "similarity-fit hypothesis" in mothers, there does not seem to be any empirical support for the "similarity-fit hypothesis" in fathers.

There are several possible reasons for these mixed findings regarding the "similarity-fit hypothesis." For instance, the two Psychogiou et al. studies (2007a, 2008a) that found support for the "similarity-fit hypothesis" did not focus on children diagnosed with ADHD based on DSM-IV-TR criteria. That is, the community samples in Psychogiou et al. (2008a) were entirely absent of diagnoses of ADHD and instead continuous levels of ADHD symptoms were examined in mothers and children. This is in contrast to Chronis-Tuscano et al. (2008) and Murray and Johnston (2006) where stringent criteria was applied in assuring a child diagnosis of ADHD. Thus, the Chronis-Tuscano et al. (2008) and Murray and Johnston (2006) studies better captured inherently impaired children with ADHD. Second, parenting observations in the Psychogiou et al. (2008a) study were conducted in the homes of the children in a 10-minute

free-play task. In contrast, in the Chronis-Tuscano et al. (2008) study, two tasks of varying structure (and thus different parenting demands) were incorporated in the research design. Third, two different coding systems were employed to code the observations in the Psychogiou et al. (2008a) and Chronis-Tuscano et al. (2008) observational studies, which also may account for differences in results. Fourth, symptoms of parental ADHD were assessed using different measures: the 93-item Conners Adult ADHD Rating Scale (CAARS) in Chronis-Tuscano et al. (2008) and the 18-item Adult ADHD Rating Scale (AARS) for mothers and fathers in the Psychogiou and colleagues studies (2008a, 2007a). Thus, the differences in measures alone may substantially account for discrepancies in findings for the association between maternal ADHD symptoms and parenting.

We tested the “similarity-fit hypothesis” suggested by Psychogiou et al. (2008a) in two samples. Specifically, we examined the differential associations between maternal ADHD symptomatology and observed parenting based on the amount of structure the parenting task requires. We hypothesized that structured situations (i.e., homework task) may be more difficult for a parent with higher symptoms of ADHD because structured tasks may tax their difficulties with sustained attention, planning, and organization. Research questions addressed in this study are:

First, are maternal ADHD symptoms associated with observed ineffective parenting? We expected, based on existing literature reviewed herein, that maternal ADHD symptoms would be associated with higher levels of observed negative parenting, higher levels of ineffective commands (e.g., those without an opportunity to comply), and lower levels of positive parenting (Chronis-Tuscano et al., 2008).

The second research question addresses whether the situational context is related to ineffective parenting. There is some evidence to suggest more generally that context does play a role in evoking negative parenting behaviors including less sensitivity in attempts to control child behavior, less involvement, less responsiveness, and less positive affect, notably in clean-up and problem solving situations, when compared to play situations (Deault, 2010; Johnston et al., 2002; Seipp & Johnston, 2005; Tripp, Schaughency, Langlands, Mouat, 2007). In Danforth and colleagues’ (1991) review of observational studies of parent-child interactions, overall variations in parenting were noted between structured tasks and unstructured play situations. Specifically, in structured tasks, more verbal exchanges and negativity from parents are found in observations of children with higher levels of hyperactivity. With that said, we hypothesized that mothers of children with ADHD would display greater parenting deficits, as measured by less effective commands, more negative parenting, and less positive parenting in a structured homework situation relative to an unstructured free-play situation.

Finally, and perhaps most importantly, we examined whether the associations between maternal ADHD symptoms and observed ineffective parenting vary by situation. It may be the case that mothers with ADHD will demonstrate greater parenting deficits in structured, relative to unstructured or free-play situations, because these high-demand tasks tax the core symptoms of ADHD for parent and child. Therefore, we hypothesized that mothers with higher levels of ADHD symptoms who have children with ADHD will exude greater parenting deficits in structured, relative to unstructured, situations. The findings of this study could benefit existing literature on families of children with ADHD, and may clarify inconsistencies in support of or against the “similarity-fit hypothesis.”

Methods

Participants

Our analyses were based on data drawn from two samples:

Study 1. The first study examined parent-child interactions for families of children with DSM-IV-TR ADHD. Seventy mother-child dyads were recruited from the Washington, D. C. metropolitan area. In order to be included in the study, children (1) had to meet full DSM-IV diagnostic criteria for an ADHD diagnosis based on parent and teacher behavior and symptom rating scales and structured interviews with parents; (2) had an estimated IQ above 70; (3) were between the ages of 6 and 10; and (4) resided with their biological mothers. More than half of the children (65.5%) in Study 1 were taking stimulant medications. However, to capture children’s uninhibited behavior, children were rated and observed while they were unmedicated.

Given the high heritability rate associated with ADHD (.76; Faraone et al., 2005), we expected mothers in this study to display ADHD symptomatology. However, no ADHD symptom cutoff was required for mothers. Additionally, we excluded mothers who were taking stimulant medication and for the presence of any Axis 1 disorder in mothers other than ADHD.

Eighty-three percent of observed parent-child interactions were included in our Study 1 analyses. Due to technical difficulties (i.e., recording errors), 17% of observed parent-child interactions were not included in our analyses.

Study 2. The second study is a study of 105 families of children with DSM-IV-TR ADHD with mothers with at least mildly elevated depressive symptoms (Beck Depression Inventory BDI-II) score ≥ 10 . Participants were also recruited from the Washington, D.C. metropolitan area. Children in Study 2 had to meet the same inclusion criteria as Study 1, with the exception of age. Children in Study 2 were between the ages of 6 and 12.

Similar to Study 1, more than half of the children in Study 2 were medicated (57.7%). However, children in Study 2 remained on their typical stable doses of medication for parent-child observations, due to changes in ethical standards. Parents were asked to rate their children's behavior on questionnaires based on their children's behavior when unmedicated.

Mothers were not selected for their ADHD symptomatology in either study. However, due to the high heritability, we expected that mothers of children with DSM-IV diagnosed ADHD would be likely to have higher levels of ADHD symptoms themselves. Regarding psychological co-morbidity, mothers in Study 2 were included if they had other psychological disorders that did not necessitate urgent treatment (thus, mothers with substance abuse, psychosis, or bipolar disorder were excluded).

Fifty-nine percent of observed parent-child interactions were included in our Study 2 analyses ($N = 62$). Forty-one percent of the observed interactions were not included, some due to recording errors and some due to the fact that coding is still in progress.

Procedures

Mothers of children with ADHD who expressed interest in participating in either study were deemed eligible from a telephone screen. Eligible participants were invited to attend a study visit that included a diagnostic assessment of child ADHD and observed parent-child interactions. All study procedures were approved by the university Institutional Review Board and all mothers provided their written informed consent. Mothers in both studies completed an adult rating scale of their own ADHD symptoms (CAARS). Participants were paid for their participation in the studies.

Parent-child interactions were completed in a room equipped with a one-way mirror for the researcher's viewing and video recording. For the 5-minute free-play task, mothers were instructed to follow their child's lead and play with the child's choice of toys provided (i.e., cars, Jenga). Following the free-play task, the parent and child engaged in a 10-minute "homework" task that consisted of a grade-appropriate math worksheet. Parents were instructed to provide as much assistance as needed for their child to complete the worksheet.

Measures

Conners Adult ADHD Rating Scale (CAARS). The CAARS is a reliable and valid 93-item measure of adult ADHD (Conners et al., 1999; Erhardt, Epstein, Conners, Parker, & Sitarenios, 1999). The CAARS includes items assessing hyperactivity, impulsivity, and inattention. Adults rate symptoms as happening "Not at all, never" to "Very much, very frequently" on a 4-point scale. It is an excellent self-report assessment tool of adult ADHD symptoms based on its good psychometric properties and inclusion of normative data.

Dyadic Parent-Child Interaction Coding System (DPICS). The observed parent-child interactions were coded using the Dyadic Parent-Child Interaction Coding System – Third Edition (DPICS-III). A composite of "positive parenting" (DPICS-PP) was calculated based on total frequency of praise and positive touch (i.e., gentle positive physical contact). A composite of "negative parenting" (DPICS-NP) was calculated based on total frequency of negative talk (including negatively worded commands and critical statements) and negative touch (i.e., physical restraint or redirection). The total frequency of "No Opportunity for Child to Comply" (DPICS-NOC; i.e., vague commands or commands given without an opportunity to comply within a five-second interval) was also calculated. These three categories of parenting were selected for their ability to quantify ineffective parenting (higher levels of negative parenting and ineffective commands and lower levels of positive parenting) and for their theoretical and empirical associations with parental ADHD. DPICS frequencies were pro-rated to account for the fact that parent-child interactions were observed for different amounts of time in the two situations (free-play: 5 minutes, homework: 10 minutes); play frequencies were doubled to allow for comparison.

DPICS training consisted of manual review, completion of the DPICS workbook (Eyberg, Duke, McDiarmid, Boggs, & Robinson, 2004), and group practice with sample parent-child interaction videos. Eight undergraduate coders were trained until they achieved 80% reliability on a criterion video. Ongoing weekly face-to-face meetings for coding practice and discussion were conducted to ensure coder reliability. Agreement between coders was assessed

throughout the studies based on periodic reliability checks. Thirty to 50 percent of the videos were coded by two raters for inter-rater reliability. Inter-observer reliability coefficients were 0.89 for DPICS-PP, 0.83 for DPICS-NP, and 0.86 DPICS-NOC in Study 1.

Results

Data Analysis

To examine the main aims of the study, analyses were conducted using generalized estimating equations (GEE) to examine main and interaction effects for each sample. GEE was appropriate for our studies based on its ability to account for nested and discrete data, such as parenting behaviors in two different situations, and subject-specific data, such as maternal ADHD symptoms (Ballinger, 2004; Zeger et al., 1988).

In each analysis, we first examined if the situation type and maternal ADHD symptoms each independently predicted our dependent variables (DPICS-NP, DPICS-NOC, and DPICS-PP), using an alpha level of $p < .05$. To examine if situation type moderated the relationship between maternal ADHD symptoms and observed parenting deficits, we examined the interaction of maternal ADHD symptoms and situation type in predicting observed parenting. Post-hoc testing was conducted to examine simple slopes and regions of significance when a significant interaction was found.

Generalized Estimating Equations

Positive Parenting

Study 1. There were no significant main effects for situation type or maternal ADHD symptoms or the interaction on DPICS-PP in Study 1 (Table 4).

Study 2. There was a main effect for situation type on DPICS-PP in Study 2. Mothers displayed more positive parenting in the homework task, relative to the free-play task (Table 4). There was no significant main effect for maternal ADHD symptoms on DPICS-PP, nor was there a significant situation type x maternal ADHD symptoms interaction.

Negative Parenting

Study 1. There were no significant main effects for situation type or maternal ADHD symptoms or the interaction on DPICS-NP in Study 1 (Table 5).

Study 2. There were no significant main effects for situation type or maternal ADHD symptoms or the interaction on DPICS-NP in Study 2 (Table 5).

Commands Without an Opportunity to Comply

Study 1. There was no significant main effect for situation type or maternal ADHD symptoms on DPICS-NOC; however, there was a trend-level interaction (Situation Type x Maternal ADHD symptoms) (Table 6). Probing the interaction revealed that a higher level of maternal ADHD symptoms (1 SD above the mean CAARS score compared to 1 SD below the mean) significantly predicted a higher level of ineffective commands in homework ($\beta = 0.20$, $SE = 0.82$, $p = .015$), but not in free-play ($\beta = -0.64$, $SE = 0.12$, $p = .581$).

Study 2. There was a main effect for situation type on DPICS-NOC in Study 2. Mothers displayed higher levels of DPICS-NOC in homework relative to the free-play situation (Table 6). There was no significant main effect for maternal ADHD symptoms on DPICS-NOC, nor was there a significant situation type x maternal ADHD symptom interaction.

Discussion

This study examined the independent and interactive relationships between situation type and maternal ADHD symptoms with observed parenting for parents of children with ADHD. No main effects for maternal ADHD symptoms were found for predicting ineffective parenting across the two situations. Although the absence of a main effect does not support existing literature suggesting parenting deficits associated with maternal ADHD symptoms, the current study was limited by the use of only a maternal self-report questionnaire of ADHD symptoms. Thus, commensurate with past studies finding an association between maternal ADHD symptoms and ineffective parenting, future research should incorporate clinical interviewing and attempt to attain samples of mothers diagnosed with ADHD and those presenting with clinical impairment related to ADHD symptoms. Predicting parenting *across* the two situations varying in structure may also have limited results for the main effect of maternal ADHD symptoms, however this was necessary given our interest in examining the interaction of maternal ADHD symptoms and situation type on parenting deficits.

Our results of more positive parenting in the homework task compared to the free-play task in Study 2 were also inconsistent with the literature typically finding more negative parenting in structured situations, particularly for children with ADHD. Future studies with larger samples should examine the influence of additional variables that may impact the parent-child interaction in families with children and adults with higher ADHD symptoms, such as child characteristics, medication status, and parental mental health (e.g., depressive symptoms) to help elucidate this finding. Future studies should also examine observed parenting in other structured parenting situations that are relevant such as clean-up.

Situation type was also significantly associated with ineffective commands in one of the two studies. Mothers of children with ADHD displaying more ineffective commands in structured situations compared to free-play is more consistent with the literature and supports the presence of situational differences in parenting (Danforth et al., 1991; Deault, 2001). Our findings suggest that mothers of children with DSM-IV ADHD direct their child's behavior ineffectively (i.e., repeating commands and issuing vague commands) in structured homework situations, relative to unstructured free-play situations.

We obtained preliminary support for the situation type moderating the relationship between maternal ADHD symptoms and parenting deficits, with a higher level of maternal ADHD symptoms predicting a higher level of ineffective commands in the structured homework task, but not in the unstructured free-play task. This finding suggests that structured situations may stress a mother's own attention problems in her interactions with her child with ADHD. This finding is contrary to the similarity-fit hypothesis, which suggests that there are parenting benefits when both a parent and child have higher levels of ADHD symptoms.

Overall, results were not consistent across the two studies. This may be due to numerous dissimilarities between samples. The two samples differed primarily in two ways: 1) children's medication status for observations and 2) the inclusion criteria for mothers. Previous research notes that parents of children who take medication for ADHD display higher rates of positive parenting (Danforth et al., 1991) which may have impacted our findings for Study 2. Unfortunately, our study lacked sufficient power to control for child's medication status. Depression is one of the most common comorbidities in adult women with ADHD and is very common among mothers of children with ADHD (Biederman et al., 1992, 1993, 2008; Chronis et al., 2003; Murphy & Barkley, 1996) and in Study 2 mothers had to have a BDI-II score ≥ 10 . However, controlling for maternal depression would have also significantly reduced our power for all analyses. In addition, past research has suggested that controlling for highly collinear variables, in this case depression, would remove the variance for our construct of interest, maternal ADHD symptoms (Miller & Chapman, 2001). Future studies with larger samples would allow for a thorough examination of the direct and interactive effects of maternal depression and ADHD.

This study highlights the importance of assessment of ADHD within families given the potential adverse developmental trajectories for children with ADHD. When parents and children share ADHD symptomatology, one's home environment may become disrupted and disorganized; thus, exacerbating the risk of negative outcomes for children with ADHD. In addition, the clinical literature could clearly benefit from more research on complex families in which both parent and child have ADHD. Additional research exploring these issues could have an impact for clinicians and therapists in practice and could inform efforts to treat these complex families.

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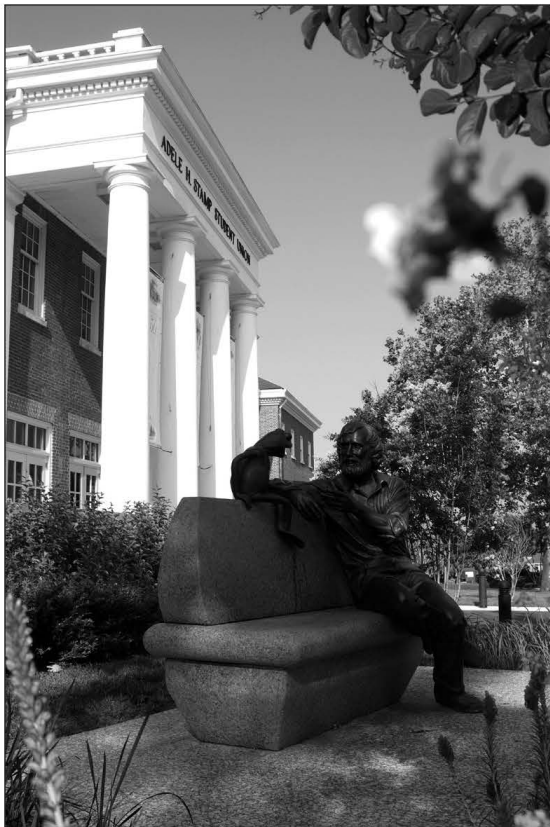


Table 1*Sample Characteristics* (n = 175)

Variable	Study 1 (n = 70)		Study 2 (n = 105)	
	M (SD)	% (n)	M (SD)	% (n)
Child characteristics				
Age (years)	8.06 (1.2)		8.79 (2.08)	
Sex (male)		71 (50)		67.3 (70)
Race/ethnicity				
Caucasian		36.2 (25)		39.8 (41)
African-American		40.6 (28)		30.1 (31)
Hispanic or Latino		4.3 (3)		4.9 (5)
Native American		1.4 (1)		--
Asian		--		1.0 (1)
Bi-racial		7.2 (5)		20.4 (21)
Other		1.4 (1)		3.9 (4)
Refused		8.7 (6)		--
ADHD Diagnosis				
Combined type		78.9 (55)		74.3 (78)
Inattentive type		15.5 (11)		22.9 (24)
Hyperactive/impulsive type		5.6 (4)		1.9 (2)
Not otherwise specified		--		1.0 (1)
Comorbidity				
Oppositional defiant disorder		47.9 (34)		28.6 (30)
Conduct disorder		19.7 (14)		19.0 (20)
Medication status				
On medication		65.8 (46)		57.7 (60)
Not on medication		34.2 (24)		42.3 (44)
Mother characteristics				
Age	38.60 (6.1)		39.95 (7.35)	
Average education level	3 ⁺ years of college, but did not receive a degree		3 ⁺ years of college, but did not receive degree	
Race/ethnicity				
Caucasian		45.6 (34)		51.9 (54)
African-American		45.6 (34)		28.8 (30)
Hispanic or Latino		7.4 (5)		3.8 (4)
Native American		--		1.0 (1)
Asian		--		1.9 (2)
Bi-racial		--		7.7 (8)
Other		1.5 (1)		4.8 (5)
BDI-II	9.01 (8.59)		22.73 (10.31)	

WISC Wechsler Intelligence Scale for Children, 4th ed., DBD Disruptive Behavior Disorders rating scale, ADHD Attention Deficit/Hyperactivity Disorder, ODD Oppositional Defiant Disorder, CD Conduct Disorder, BDI-II Beck Depression Inventory

Table 2*Maternal ADHD Symptoms*

	Study 1		Study 2	
	M	SD	M	SD
CAARS (Sum of item responses)				
DSM-IV Inattention	7.30	5.53	9.90	6.09
DSM-IV Hyperactive	6.25	4.50	8.42	5.29
DSM-ADHD Total	13.55	9.23	18.31	10.15
Inattention/memory	11.06	6.57	14.36	7.84
Hyperactivity/restlessness	9.13	5.79	12.07	7.09
Impulsive/emotional	8.72	5.32	13.10	5.97
Self-concept	5.32	3.91	8.74	4.42

CAARS individual item scale, 0=Not at all, 1=Just a little, 2=Pretty much, 3=Very much

DSM-IV Diagnostic and statistical manual, fourth edition, ADHD attention-deficit/hyperactivity disorder,

CAARS Conners adult ADHD rating scale

Table 3*Frequencies of Outcome Variables by Situation*

Situation	Study 1			Study 2		
	PP	NP	NOC	PP	NP	NOC
Play						
	9.98 (7.50)	8.61 (8.96)	6.85 (7.42)	3.20 (4.17)	5.10 (6.70)	6.23 (6.51)
	N = 57	N = 57	N = 54	N = 62	N = 61	N = 62
Homework						
	6.21 (8.09)	5.57 (4.34)	7.20 (6.12)	7.69 (9.46)	7.22 (6.80)	12.46 (12.30)
	N = 61	N = 57	N = 57	N = 61	N = 61	N = 61

PP Positive parenting; NP Negative parenting; NOC No Opportunity for Child to Comply

Table 4*DPICS-PP*

	Study 1			Study 2		
	β	SE	p	β	SE	p
Situation	-1.00	1.29	.441	2.45	1.03	.018**
Maternal ADHD	-0.02	0.07	.769	0.07	0.06	.294
Situation Type x Maternal ADHD	-0.06	0.07	.350	-0.01	0.05	.777

Beta (β) and standard error (SE) statistics using Type III sum of squares approach, two-tailed tests. DPICS-PP dyadic parent-child interaction coding system-positive parenting

** $p < .05$

Table 5*DPICS-NP*

	Study 1			Study 2		
	β	<i>SE</i>	<i>p</i>	β	<i>SE</i>	<i>p</i>
Situation	-0.85	1.00	.394	1.13	0.80	.159
Maternal ADHD	0.11	0.09	.217	0.04	0.07	.597
Situation Type x Maternal ADHD	-0.03	0.07	.658	-0.01	0.04	.859

Beta (β) and standard error (*SE*) statistics using the Type III sum of squares approach, two-tailed tests. *DPICS-NP* dyadic parent-child interaction coding system-negative parenting

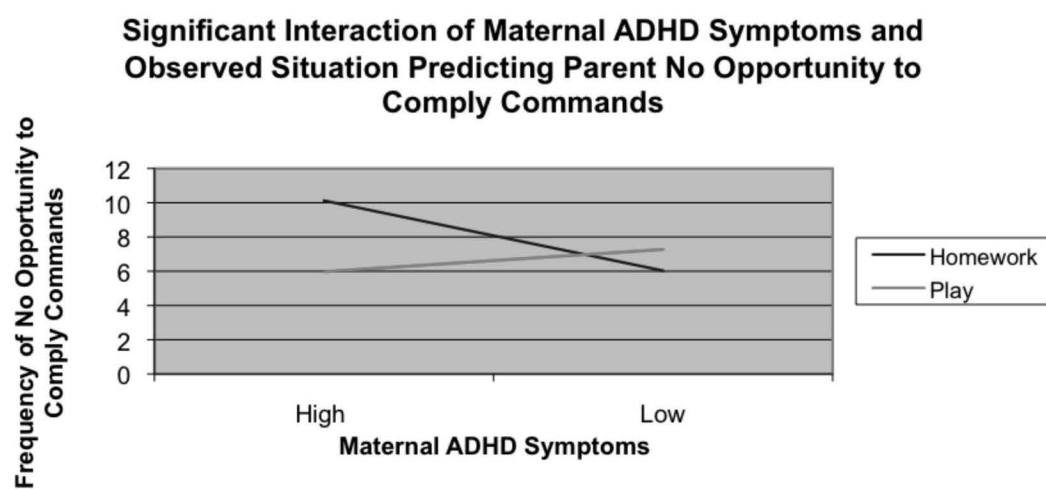
Table 6*DPICS-NOC*

	Study 1			Study 2		
	β	<i>SE</i>	<i>p</i>	β	<i>SE</i>	<i>p</i>
Situation	-1.71	1.31	.193	3.84	1.25	.002**
Maternal ADHD	0.07	0.07	.321	0.15	0.11	.163
Situation Type x Maternal ADHD	0.13	0.07	.071*	-0.04	0.06	.508

Beta (β) and standard error (*SE*) statistics using the Type III sum of squares approach, two-tailed tests. *DPICS-NOC* dyadic parent-child interaction coding system-no opportunity to comply

* $p < .10$

** $p < .05$

Figure 1.

Maternal ADHD Symptoms x Observed Situation Predicting Parent No Opportunity to Comply Commands.