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ORIGINAL PAPER

Parenting Children with ADHD: Associations with Parental Depression, Parental ADHD, and Child Behavior Problems

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Abstract

The current study systematically tested the incremental and interactive associations of parental depression, parental attention-deficit/hyperactivity disorder (ADHD), and child behavior problems, as related to parenting in families of children with ADHD. Participants were 213 children with ADHD (age *M(SD)* = 8.58(1.55); 69% male), who each took part in the study with one parent (age *M(SD)* = 41.13(6.03); 10% male). Parents self-reported their own depressive and ADHD symptoms. Positive (e.g., being involved, praising the child) and negative (e.g., being over-reactive, criticizing the child) parenting behaviors were self-reported by parents and observed in an interaction task with the child. Children's oppositional defiant disorder (ODD) and ADHD behavior problems were reported by parents and teachers. Results revealed that parental depressive symptoms were associated with more self-reported negative and less self-reported positive parenting after adjusting for parental ADHD symptoms and child behavior problems. Parental ADHD symptoms were associated with more self-reported negative parenting after adjusting for child behavior problems, but not incrementally over parental depressive symptoms. An interaction effect was found, where parental ADHD symptoms were associated with more self-reported negative parenting when depressive symptoms were low. Parental psychopathology was not associated with observations of parenting. Regarding child behavior problems, only child ODD behavior was associated with more self-reported negative parenting, and no interactions between parent and child psychopathology were associated with parenting behavior. Future research, assessment, and treatment of families with children with ADHD should consider both types of parental psychopathology, and their potential interaction, alongside the contribution of child ODD behavior.

Keywords ADHD · Depression · Parenting · School-age children · Family functioning

Introduction

Many families of children with attention-deficit/hyperactivity disorder (ADHD) experience difficulties in family functioning (Johnston & Chronis-Tuscano, 2015). Parents of children with ADHD tend to engage in less positive parenting, such as being involved or providing warmth, relative to parents of typically developing children (Ellis & Nigg, 2009; Johnston & Mash, 2001). They may also engage in more negative parenting, such as being over-reactive and critical, or providing inconsistent discipline and structure (Ellis & Nigg, 2009; Johnston & Mash, 2001). Because parenting behaviors can influence the long-term adjustment of children with ADHD (Johnston et al., 2012), understanding the factors that impact parenting, and how these factors may interact, is clinically important.

The current study is motivated by the developmental-transactional model which emphasizes the contribution of both parent and child characteristics, and their interplay, to understand functioning in families of children with ADHD

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(Johnston & Chronis-Tuscano, 2015). Although much research has examined parent and child factors related to parenting, this cross-sectional study is unique in its systematic approach to testing parent factors (depression and ADHD) and child factors (behavior problems), incrementally and interactively, in their associations with parenting in 213 families of children with ADHD. Our aim is to generate a more complete picture of the associations between child behavior, parent psychopathology, and parenting in a well-characterized clinical sample by examining step-by-step how each factor, and their interactions, are associated with self-reported and observed parenting behavior. With this approach, we are better able to compare findings with previous research which varies in whether other factors are considered when testing associations between one parental psychopathology and parenting. Further, examining interactions between parental depression and ADHD with one another and with child behavior is an understudied area, and greater understanding of their interplay may allow for more nuanced clinical recommendations.

Parental Psychopathology

Parental psychopathology is a relevant factor for understanding parenting behaviors in families of children with ADHD. Depression is often elevated in parents who have a child with ADHD (Chronis et al., 2003; Johnston & Mash, 2001). In addition, ADHD is highly heritable; between 25–50% of families of children with ADHD have at least one parent with clinically significant ADHD symptoms (Chronis et al., 2003; Johnston et al., 2012). Although depression and ADHD frequently co-occur in adults (Chronis et al., 2003; McIntosh et al., 2009), these two psychopathologies are distinct. Depression is characterized by sad mood and loss of pleasure in previously enjoyed activities, where symptoms are largely tied to depressive episodes. ADHD symptoms involve difficulties with attention, and hyperactivity-impulsivity, that occur consistently and across settings (American Psychiatric Association, 2013). Therefore, examining the incremental and interactive contributions of both parental depression and ADHD is helpful to better understand parental mental health and parenting in these families. As reviewed below, when examined individually, parental depression and ADHD each tend to be associated with more negative and less positive parenting behaviors. However, largely missing in the literature are tests of the associations of parental depression relative to ADHD, incrementally and interactively, and in combination with child behavior problems, as related to parenting; to our knowledge, no study to date has taken a systematic approach to such tests.

Parental Depression and Parenting

Theory and empirical literature support the premise that parental depression is associated with parenting. However, the unique associations between parental depression and parenting after accounting for parental ADHD and child behavior problems, as well as the interactions between these factors, have never been tested, including in samples of families of children with ADHD.

Parents with low mood and loss of interest in enjoyable activities may have difficulties engaging with their children in positive ways. They may be more irritable and emotionally reactive, leading to harsh parenting. Because of the associated difficulties with concentrating and decision making, it is possible that these parents are less structured in their parenting. These ideas are supported by robust meta-analytic results finding parental depressive symptoms to be associated with less positive and more negative parenting (not restricted to child ADHD samples; Cheung & Theule, 2019; Lovejoy et al., 2000). In the few studies that specifically examine families of children with ADHD, parental depression also appears to be associated with less positive and more negative parenting. One study found parental depressive symptoms were associated with less observed parental responsiveness after adjusting for child behavior and parents' childhood ADHD symptoms (Johnston et al., 2002, $n = 136$). Another study found parental depression-related negative distortions of child behavior were associated with less observed warmth in parent–child interactions after adjusting for child behavior problems (Chi & Hinshaw, 2002, $n = 96$). However, neither study considered parents' *current* ADHD symptoms. Regarding negative parenting, several studies using self-report and observational measures of parenting indicate that parental depressive symptoms are associated with more negative responses to children and less structure (Chi & Hinshaw, 2002; Gerdes et al., 2007, $n = 96$; Thomas et al., 2015, $n = 82$, although see Johnston et al., 2004, who did not find this). None of these studies considered parental ADHD symptoms, and only two considered child behaviors (Chi & Hinshaw, 2002; Thomas et al., 2015).

In summary, despite relatively consistent associations between parental depressive symptoms and less positive and more negative parenting in the literature, none of these studies accounted for parental ADHD, few considered child behavior problems, and none examined the interaction between parental depression and ADHD. Given the likelihood of ADHD symptoms in parents of children with ADHD, and the relevance of child behavior problems in this population, this may be an oversight. The current study systematically tests whether associations between parental depressive symptoms and parenting exist at the bivariate level, and then whether they persist after adjusting for these

relevant factors. If parental depressive symptoms are consistently associated with parenting, this would potentially strengthen conclusions about the role of parental depression in parenting in these families.

Parental ADHD and Parenting

There are theoretical reasons why parental ADHD symptoms would be associated with parenting, and this is generally found in the existing literature. In contrast to the research on parental depression in families of children with ADHD, research on parental ADHD in these families more often considers parental depression and/or child behavior problems. However, this has resulted in a literature where it can be difficult to compare findings across studies, because one study will not adjust for parental depression or child behavior problems while another will do so, but without reporting the unadjusted results.

The inattentive symptoms of ADHD, when present in adults, may interfere with being positive with children or confer difficulty with providing structure. Impulsivity may lead to reactive, harsh parenting. The empirical literature tends to find small to null associations between parental ADHD symptoms and less positive parenting. In a meta-analysis by Park et al. (2017; although reviewed studies did not require children to have ADHD), they concluded that such associations existed but were small in magnitude. On the other hand, in samples of children with ADHD, most studies report no association between parental ADHD and positive parenting either without covariates (Woods et al., 2019, $n = 79$) or after accounting for parental depression and child behavior (Murray & Johnston, 2006, $n = 60$; Wymbs et al., 2015, $n = 90$). Another study, (Chronis-Tuscano et al., 2008, $n = 70$) found that the relationship between maternal ADHD and less observed positive parenting became non-significant after adjusting for child oppositional defiant disorder (ODD). However, Chronis-Tuscano et al. (2008) also found maternal ADHD to be associated with less self-reported involvement and positive parenting, although maternal depression and child ODD were not correlated with these constructs and therefore not included in analyses.

The meta-analysis by Park et al. (2017) reported more robust associations between parental ADHD and more negative parenting, compared to what was found for positive parenting, again not limited to families of children with ADHD. In the literature about families of children with ADHD, there is also more consistency in the finding that parental ADHD is associated with negative parenting, either without accounting for parent depression and child behaviors (Johnston et al., 2004, $n = 42$), or including these covariates (Murray & Johnston, 2006; Wymbs et al., 2015). Again, Chronis-Tuscano et al. (2008) had some varied findings. They found that parental ADHD was associated with more negative parenting in an observed free play task after adjusting for child ODD and concluded this was not accounted for by parental depression. They further found that parental ADHD was associated with greater inconsistent discipline, but not after accounting for parental depression.

Overall, the literature suggests that parental ADHD is associated with more negative parenting (these associations are more inconsistent with less positive parenting), and these associations sometimes hold after accounting for parental depression and/or child behavior problems. Through the approach in the current study, we aim to advance this literature by systematically examining the associations between parental ADHD and depression, and child behavior problems, with parenting. The goal is to generate a more complete understanding of whether each parental psychopathology is associated with parenting at the bivariate level, and then after the other parent and child factors are individually introduced, in our sample. This may help to integrate existing literature on this topic which has taken varied approaches to whether other factors are statistically adjusted.

Interaction Effects between Parental ADHD and Depression

A unique contribution of our study is to examine whether the two types of psychopathology are related to parenting in an interactive manner, which has not been done in the literature to date. In the Park et al. (2017) meta-analysis, parental depression did not moderate the strength of the associations between parental ADHD and parenting, but the inclusion criteria did not require children to have ADHD. Among families with children with ADHD, only one study has examined the interactive effects of parental ADHD and depression on parenting; this study tested the interaction between one parent's symptom levels (ADHD or depression), the other parent's symptom levels (ADHD or depression), and child ADHD/ODD (Wymbs et al., 2017). When one parent had low ADHD or depressive symptoms but the other parent had elevated symptoms, this was associated with more negative and less positive parenting when the child displayed ADHD/ODD behaviors. The authors postulate that parents who are mismatched in their levels of psychopathology may take different approaches to managing child behavior problems, which exacerbates parenting difficulties. Finally, Woods et al. (2019) tested whether the interaction of parental ADHD and emotion regulation (within the same parent) contributed to parenting in families of children with ADHD, similar to the approach in the current study, and did not find effects.

The developmental-transactional model (which would suggest that factors may relate to parenting in complex and

interactive ways), as well as the findings from Wymbs et al. (2017), raise the possibility that parental ADHD and depression within the same parent might interact. However, the differences in the methodology between Wymbs et al. (2017) and the current study make a directional prediction difficult. While a mismatch between two parents in levels of psychopathology (e.g., one high, one low) might be associated with parenting difficulties (Wymbs et al., 2017), this may not be the case if the symptoms are within the same parent. It is possible that parents with high levels of one psychopathology (ADHD or depression) but not the other may better compensate for the difficulties that the one psychopathology creates in parenting. However, if parents have symptoms of both psychopathologies, this ability to compensate may be decreased, resulting in the combination of high parental ADHD and depressive symptoms negatively impacting parenting behavior over and above the additive effects of the psychopathologies individually. In sum, although the limited existing research makes the directionality of any potential interaction effect unclear, this interaction is understudied and important to examine.

Child Behavior Problems

Among families of children with ADHD, two relevant child factors that could affect parenting are the severity of children's ADHD and ODD symptoms. Both behavior problems in children are stressful for parents and may elicit poor parenting (Johnston & Mash, 2001; Modesto-Lowe et al., 2008). Child ADHD and ODD overlap in some symptoms and are highly comorbid, however, they are unique in their conceptualizations and treatment implications (American Psychiatric Association 2013). Some research suggests that parenting difficulties are more likely to occur in response to children's ODD as opposed to ADHD behaviors (Deault, 2010; Johnston et al., 2012), potentially making both important to understanding parenting. Nonetheless, previous research examining parenting in families of children with ADHD has inconsistently accounted for both child ADHD and ODD behaviors. In the current study, we take a systematic approach with the goal of clarifying the associations between parental psychopathology and parenting that exist both without, and then with, consideration of child behavior problems.

Interaction between Parent Psychopathology and Child Behavior

Potentially, the associations between parent psychopathology and parenting may differ depending on the level of child behavior problems. Although child ODD did not moderate associations between parental ADHD and parenting in the Park et al. (2017) meta-analysis, the combination of high ADHD symptoms in parents and children has been found to exacerbate parenting difficulties in studies focused on families of children with ADHD (Johnston et al., 2012). In Wymbs et al. (2015, 2017), parents with elevated depressive or ADHD symptoms showed more negative parenting than those with low symptoms when interacting with a child exhibiting high ADHD/ODD behavior, as opposed to when interacting with a child with typical behavior. Perhaps the stress of managing a child with behavior problems is incrementally more difficult to handle when parents have their own psychopathology. On the other hand, the similarity-fit hypothesis (Psychogiou et al., 2008) posits that parental ADHD when children also have ADHD may be beneficial for parenting, as similarity leads to parental empathy and understanding. These interaction effects between parental psychopathology and child behavior problems merit continued examination.

The Current Study

In a sample of families of children with ADHD, we systematically investigated the incremental and interactive associations between parental factors (parental depressive and ADHD symptoms) and child factors (child ADHD and ODD behaviors) with self-reported and observed parenting behaviors. Given the gaps and varied approaches taken in the literature about parental psychopathology and parenting in families of children with ADHD, our aim was to examine: (1) the bivariate relationships between parent psychopathologies and child behaviors with parenting, (2) these associations after accounting for other variables, and (3) potential interactive effects between the two parental psychopathologies with one another and with child behavior. We expected that child behavior problems would be associated with more negative and less positive parenting. We hypothesized that parental depression would be incrementally associated with more negative and less positive parenting after accounting for child behavior problems and parental ADHD symptoms, given the largely robust associations in the literature, despite the lack of consideration of parental ADHD in existing studies. We hypothesized that parental ADHD would be incrementally associated with more negative and less positive parenting after accounting for child behavior, but would only remain associated with more negative parenting, not less positive parenting, after accounting for parental depression. This is because the association between parental ADHD and positive parenting is inconsistent in the literature, particularly after accounting for parental depression (Chronis-Tuscano et al., 2008; Murray & Johnston, 2006; Woods et al., 2019; Wymbs et al., 2015). Finally, we explored

interaction effects between (a) parental ADHD and depression, and (b) parental psychopathology and child behavior problems, as related to parenting. We tentatively speculated that high parental ADHD and parental depressive symptoms, as well as high parental psychopathology and child behavior problems, would interact to exacerbate parenting difficulties.

Method

Participants

Participants were 213 families of children with ADHD (age 6–11, *M(SD)* = 8.58(1.55); 69% male), taking part in a clinical trial examining interventions to address children's social problems; all measures for the current cross-sectional study were collected prior to randomization to intervention condition. Children participated with one parent (age *M (SD)* = 41.13(6.03); 10% male), who was either the parent the child lived with at least 50% of the time or, for two-parent families, the parent most involved in the child's social life. Data were collected from two sites in Canada, Vancouver and Ottawa/Gatineau, and contain English and French speaking participants. Participants were recruited through schools, hospital clinics, and practitioners at both sites. See Table 1.

All children were diagnosed with ADHD according to DSM-5 criteria (American Psychiatric Association, 2013). In a screener, parents and teachers rated children on the nine symptoms of inattention and the nine symptoms of hyperactivity/impulsivity on the Child Symptom Inventory (CSI; Gadow & Sprafkin, 2002). If a child had a minimum of four symptoms of inattention and/or four symptoms of hyperactivity/impulsivity endorsed by both parent and teacher (as "often" or "very often" on the CSI items), the family was invited to the lab to confirm study eligibility. For some children (10%, all with an existing ADHD diagnosis from a professional), we relied only on parent report of child ADHD symptoms during screening because the child was medicated during all school hours ($n = 16$) or the parent endorsed symptoms at school and explained why the teacher was not an appropriate informant for the child's symptoms ($n = 5$). In all cases, to meet inclusion criteria, children had at least six items of inattention and/or hyperactivity/impulsivity endorsed by the parent on the Kiddie-Schedule for Affective Disorders and Schizophrenia (K-SADS; Axelson et al., 2009) administered during the lab visit, or by the teacher on the CSI, using the "or" algorithm (Lahey et al., 1994). As the larger study focused on interventions for social difficulties, children also needed to demonstrate some peer problems. Most children had a score of 3 (corresponding to 1 *SD* above the mean) on the Strengths and Difficulties Questionnaire Peer Problems subscale (SDQ; Goodman, 1997) as reported by both parent and teacher. When either the parent or teacher did not endorse a 3 (14.3% of participants), the child received a score of 3 on this subscale when using the "or" algorithm. Exclusion criteria included a Full-Scale IQ below 75 estimated using the Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 2011) or a short form of the Wechsler Intelligence Scale for Children (WISC-IV; Wechsler, 2003), autism spectrum disorder, or serious condition needing immediate intervention (e.g., psychosis). Medication to address ADHD, and common comorbidities with ADHD (e.g., ODD, depressive and anxiety disorders, learning disorders) were not exclusionary.

Table 1 Participant demographics and descriptive statistics of study variables

Demographics	*M (SD)* or %
Parent Age[a]	41.13 (6.03)
Parent Gender (male)	10%
Child Age	8.58 (1.55)
Child Gender (male)	69%
Medicated	58%
Ethnicity[a]	
White	75%
Asian	6%
Other	19%
Primary Language	
French	51%
English	43%
Other	6%

Study Variables	*M (SD)*	Range
Child ODD Symptoms	63.24 (7.29)	50.00–80.00
Child ADHD Symptoms	34.03 (7.73)	13.50–51.00
Parental Depressive Symptoms	9.53 (8.62)	0-38.00
Parental ADHD Symptoms[a]	12.06 (9.67)	0–49.00
APQ Involvement	2.94 (0.47)	1.33–4.00
APQ Positive Parenting[a]	3.27 (0.51)	1.17–4.00
APQ Inconsistent Discipline[a]	1.45 (0.61)	0–3.17
PS Laxness	2.61 (0.86)	1.00–5.00
PS Over-Reactivity	3.03 (0.81)	1.20–5.30
EAS Criticism	1.09 (1.99)	0–14.00
EAS Physical Control[a]	1.48 (2.33)	0–19.50
EAS Praise[a]	2.15 (3.26)	0–29.50
EAS Engagement	7.65 (1.02)	2.00–9.00

ODD oppositional defiant disorder, *ADHD* attention-deficit/hyperactivity disorder, *APQ* Alabama Parenting Questionnaire, *PS* Parenting Scale, *EAS* Etch-A-Sketch Task

[a]Indicates significant difference between sites

Procedure

Study procedures were approved by review boards at both sites. Written consent was obtained from parents and assent was obtained from children. At the lab visit, parents were administered the K-SADS and completed self-report measures about their psychopathology symptoms and their parenting behaviors, and child behavior problems. Children were administered the WASI/WISC-IV. The parent and child also participated in an interaction, the Etch-A-Sketch task, described below. Teachers completed questionnaires about the child's behavior by mail.

Measures

Parental depressive symptoms

Parents completed the Beck Depression Inventory-II (BDI-II; Beck et al., 1996) to rate their depressive symptoms over the last 2 weeks. The 21 items reflect the criteria for depressive disorders in the DSM-IV. Parents answered each item on a four-point scale (0 to 3) with higher scores indicating greater symptomatology. The BDI-II is a normed measure. Convergent, discriminant, and criterion validity are established (Beck et al., 1996). Internal consistency in the current sample was 0.92.

Parental ADHD symptoms

Parents completed the Current Symptoms Scale (CSS; Barkley & Murphy, 2006), a normed measure with 18 items corresponding to the DSM-IV-TR symptoms of ADHD. Parents rated their symptoms over the past 6 months on a four-point scale (0 = *rarely or never* to 3 = *very often*) with a higher score indicating that symptoms occur more often. The CSS has good reliability and construct validity (Gomez, 2011). Internal consistency in this sample was 0.93. The correlation between parental inattention and hyperactivity/impulsivity symptoms was $r(197) = 0.73$, $p < 0.001$; therefore, the total symptom severity score was used.

Child behavior problems

Parents and teachers completed the CSI (Gadow & Sprafkin, 2002) to indicate child ADHD symptoms. Although all children met criteria for ADHD, some variability existed in symptom severity. The correlation between parent and teacher reports was $r(209) = 0.20$, $p = 0.003$, so a composite of the two informants scores was created. Although this correlation is low in magnitude, we combined informants to increase confidence in the level of ADHD behaviors across contexts and reduce concerns about shared rater variance.

Parents and teachers also completed the Oppositional Defiant Problems subscale on the Child Behavior Checklist (CBCL) and Teacher Report Form (TRF), respectively, to assess the extent to which the child argues, has a temper, and is defiant (Achenbach & Rescorla, 2001). The CBCL and TRF are standardized, normed measures of school-age children's problem behaviors. Parents and teachers rate whether each behavior is 0 = *not true*, 1 = *sometimes true*, or 2 = *very true* of the child. The CBCL and TRF are widely-used and have established reliability and validity. A composite of the parent and teacher reported *T*-scores for the five-item subscale was used as the parent and teacher report were significantly correlated, $r(191) = 0.47$, $p < 0.001$.

Self-reported parenting behavior

Parents completed two widely-used self-report measures about their parenting of the child in the study. First, the Alabama Parenting Questionnaire (Shelton et al., 1996) assesses parenting practices on four subscales: Involvement, Positive Parenting, Poor Monitoring/Supervision, and Inconsistent Discipline. Additional items pertain to other discipline practices (which are not typically considered to be a subscale in the literature), and to corporal punishment (which we did not administer). Items are rated on a five-point metric from 0 = *Never* to 4 = *Always*. Internal consistency of the subscales has been reported as moderate to high in previous research: Involvement = 0.80, Positive Parenting = 0.80, Inconsistent Discipline = 0.67, and Poor Monitoring/Supervision = 0.67 (Shelton et al., 1996). Hurley et al. (2014) also report acceptable reliability, validity, and factor structure for this measure. In our sample, internal consistency was: Involvement = 0.63, Positive Parenting = 0.79, Inconsistent Discipline = 0.66, and Poor Monitoring/Supervision = 0.47 (which we elected to not use because of the low internal consistency). Second, parents also completed the Over-Reactive and the Laxness subscales from the Parenting Scale (Arnold et al., 1993). Harvey et al. (2001) reported factor analytic evidence for these two subscales among children with and without ADHD. Parents are presented with scenarios (e.g., When my child misbehaves…) with two possible responses (e.g., I do something about it right away or I do something about it later) and indicate which response is more like them on a seven-point scale. This scale has demonstrated adequate reliability, factor structure, and validity in previous research (Hurley et al., 2014). In this sample, internal consistency was: Over-Reactive = 0.70 and Laxness = 0.75.

Observed parenting behavior

The parent and the child in the study participated in an observational task where they were given a picture to copy with an Etch-A-Sketch (Hay & Pawlby, 2003; Stevenson-

Hinde & Shouldice, 1995). This task required cooperation between the parent and child; only the parent controlled the left knob (drawing horizontal lines) and only the child controlled the right knob (drawing vertical lines). The parent and child were allowed up to 10 minutes to complete the task. In previous research, a factor analysis found parent behaviors coded from this observational measure to associate with other self-report and observational measures of parenting (Unternaehrer et al., 2019). The interaction was recorded and then scored by two trained, independent coders. Inter-rater reliability was assessed using intraclass correlation coefficients (ICC; Shrout & Fleiss, 1979). Final scores on each dimension (described below) represent an average of the scores from the two coders.

We followed a similar scoring convention used for this task in previous research (e.g., Hay & Pawlby, 2003; Stevenson-Hinde & Shouldice, 1995). Parent approval (ICC = 0.97) indicates the raw number of times that the parent encourages or praises the child's action. Parent engagement (ICC = 0.89) assesses the extent to which the parent engages and collaborates with the child, rated on a global scale from 1 = *Avoidance* to 9 = *Constant active engagement*. Physical control of the child (ICC = 0.96) represents the raw number of times the parent exerts physical control by restraining the child's actions or interfering with the child's knob. Finally, parental criticism (ICC = 0.96) represents the raw number of times the parent makes a negative comment about the child or the child's actions.

Data Analytic Plan

Missing data on either predictor or criterion variables affected 21 participants. We used Mplus version 8 (Muthén & Muthén, 2017) with Full Information Maximum Likelihood estimation to account for missing data in all analyses. Notably, there were no significant differences between participants who had complete data relative to those with missing data on any demographic measure. Little's missing completely at random test also indicated that data were missing completely at random (Little & Rubin, 2002).

To reduce the number of criterion variables, we conducted principal component analysis (PCA) with varimax rotation on the nine parenting variables from the self-report measures and the Etch-A-Sketch task. Examination of fit statistics revealed that a four-factor solution was optimal [χ^2 (6) = 60.37, $p = 0.383$; RMSEA = 0.017 (90% CI = 0.000–0.092)]. Factor loadings are displayed in Table 2, suggesting that factor 1 represented self-reported negative parenting, factor 2 represented self-reported positive parenting, factor 3 represented observed negative parenting, and factor 4 represented observed positive parenting. The observed behaviors loaded on different factors from the self-reported behaviors, perhaps due to method variance. Four composites were created by taking the mean of the standardized variables that loaded on each of the factors (DiStefano et al., 2009). As observed parent engagement loaded negatively on the observed negative parenting factor, it was reverse coded. Only observed parent praise loaded on the observed positive parenting factor, so the standardized variable was used in analyses to represent observed positive parenting. Higher scores on the composite indicate more of the corresponding behavior.

To test our primary hypotheses, we standardized all continuous variables to center them. We first calculated the bivariate correlations between each parent factor (parental depression and ADHD), child factor (child ODD and ADHD behaviors), and parenting (composite

Table 2 Principal component analysis of parenting variables

Variable	Self-reported Negative Parenting	Self-reported Positive Parenting	Observed Negative Parenting	Observed Positive Parenting
APQ Inconsistent Discipline	**−0.86**	0.02	−0.08	0.09
PS Over Reactivity	**−0.54**	−0.21	−0.03	0.07
PS Laxness	**−0.69**	−0.26	0.11	0.04
APQ Involvement	0.20	**0.67**	−0.03	0.07
APQ Positive Parenting	0.12	**0.72**	−0.06	0.04
EAS Criticism	0.03	−0.14	**0.61**	−0.26
EAS Physical Control	0.04	0.01	**0.51**	0.08
EAS Engagement	0.13	−0.01	**−0.42**	−0.38
EAS Praise	0.08	−0.07	0.04	**−0.71**

Bold faced values represent factor loadings that belong to each extracted factor. Factor loadings are after rotation

APQ Alabama Parenting Questionnaire, *PS* Parenting Scale, *EAS* Etch-A-Sketch Task

scores of self-reported positive, self-reported negative, observed positive, and observed negative parenting). Next, hierarchical multiple regression analyses were conducted with the four composite scores of parenting as the criterion variables. Child ODD and ADHD behaviors were entered together in Step 1 of all regressions. Two sets of regressions were then conducted, one with parental depressive symptoms entered in Step 2 and parental ADHD symptoms in Step 3, and one with parental ADHD symptoms entered in Step 2 and parental depressive symptoms in Step 3. This allowed us to test the incremental effects of each parental psychopathology, after accounting for first child behaviors and then the other psychopathology.

For our exploratory analyses, first we added the interaction term reflecting parental ADHD symptoms x parental depressive symptoms to Step 4 in the previous regressions. This tested whether there were interaction effects between the two types of parental psychopathologies on the criterion variables of parenting. Second, we conducted additional regressions to test the interactions between parental psychopathologies (depression and ADHD) and child behavior problems (ADHD and ODD) as related to parenting. One parent and one child psychopathology (Step 1), as well as the interaction between the two (Step 2), were entered, and four models were conducted for each combination (one for each parenting criterion variable).

Results

Descriptive Statistics and Bivariate Correlations

Descriptive statistics of demographic and study variables are in Table 1. All were normally distributed with skewness and kurtosis less than +/− 2. Table 3 contains the bivariate correlations between study variables. Child ADHD and ODD behaviors were correlated, as were parental depressive and ADHD symptoms. Self-reported positive and negative parenting were negatively correlated with one another, but neither observed positive or negative parenting correlated with other parenting measures. Child ODD behaviors were associated with more self-reported negative parenting behaviors only, and child ADHD behaviors were not associated with any parenting measure. Parental depressive and parental ADHD symptoms each correlated with more self-reported negative parenting, while only parental depressive symptoms correlated with less self-reported positive parenting at the bivariate level. Neither parental psychopathology correlated with observed parenting.

Child Behavior Problems and Parenting Behavior

Table 4 contains these analyses. Child ODD behaviors were associated with more self-reported negative parenting, after accounting for child ADHD symptoms (which was not significant). The overall R^2 associated with both child behavior problems at this step was significant, although small. Neither child ODD or ADHD behaviors was associated with any other parenting variable, nor was the overall R^2 for the step containing both child behaviors significant. Only after parental psychopathology was added to the model, and not on the bivariate level, was there a significant association between more child ADHD symptom severity and *less* self-reported negative parenting.

Parental Psychopathology and Parenting Behavior

These analyses are also presented in Table 4. After accounting for child behavior problems, parental depressive symptoms and parental ADHD symptoms were each associated with more self-reported negative parenting behavior in separate regressions. In both cases, the addition of the parental psychopathology was associated with a small yet significant ΔR^2. Parental

Table 3 Bivariate correlation matrix of study variables

	1	2	3	4	5	6	7
1. Child ODD Symptoms	–						
2. Child ADHD Symptoms	0.38**	–					
3. Parental Depressive Symptoms	0.16*	0.09	–				
4. Parental ADHD Symptoms	0.07	0.07	0.55**	–			
5. Self-reported Negative Parenting	0.17*	−0.05	0.18**	0.28**	–		
6. Self-reported Positive Parenting	−0.01	0.09	−0.02	−0.17*	−0.28**	–	
7. Observed Negative Parenting	0.11	0.04	−0.08	−0.11	−0.03	−0.11	–
8. Observed Positive Parenting	0.08	0.08	−0.01	0.13	−0.12	−0.09	0.08

ODD oppositional defiant disorder, *ADHD* attention-deficit/hyperactivity disorder

*$p < 0.05$; **$p < 0.01$

Table 4 Parent and child factors as associated with parenting behaviors

	Self-reported Negative Parenting			Self-reported Positive Parenting			Observed Negative Parenting			Observed Positive Parenting		
	ΔR^2	β	*p*	ΔR^2	β	*p*	ΔR^2	β	*p*	ΔR^2	β	*p*
Step 1	**0.05**			0.01			0.01			0.01		
Child ADHD		−0.14	0.058		0.11	0.136		0.00	0.994		0.06	0.436
Child ODD		**0.23**	**0.002**		−0.05	0.508		0.11	0.143		0.06	0.404
Step 2: Parental Depression only	**0.07**			**0.03**			0.01			0.01		
Child ADHD		**−0.15**	**0.039**		0.12	0.117		0.00	0.965		0.05	0.460
Child ODD		**0.19**	**0.010**		−0.02	0.754		0.13	0.090		0.05	0.547
Parental Depression		**0.26**	**<0.001**		**−0.17**	**0.013**		−0.12	0.094		0.11	0.105
Step 2: Parental ADHD only	**0.03**			0.00			0.01			0.00		
Child ADHD		**−0.15**	**0.044**		0.10	0.136		0.00	0.954		0.06	0.432
Child ODD		**0.22**	**0.003**		−0.04	0.519		0.11	0.127		0.06	0.398
Parental ADHD		**0.17**	**0.011**		−0.02	0.799		−0.09	0.226		−0.01	0.851
Step 3	**0.04**[a]			**0.04**[a]			0.01[a]			**0.02**[a]		
Child ADHD	0.00[b]	**−0.15**	**0.037**	0.01[b]	0.11	0.121	0.00[b]	0.01	0.938	0.01[b]	0.06	0.441
Child ODD		**0.19**	**0.010**		−0.02	0.795		0.13	0.091		0.04	0.578
Parental ADHD		0.04	0.599		0.11	0.182		−0.03	0.693		−0.11	0.188
Parental Depression		**0.24**	**0.003**		**−0.24**	**0.004**		−0.10	0.262		**0.17**	**0.034**
Step 4	**0.03**			0.01			0.00			0.01		
Child ADHD		**−0.16**	**0.022**		0.12	0.101		0.01	0.948		0.05	0.493
Child ODD		**0.19**	**0.009**		−0.02	0.790		0.13	0.091		0.04	0.569
Parental ADHD		0.09	0.293		0.09	0.302		−0.03	0.730		−0.09	0.309
Parental Depression		**0.33**	**<0.001**		**−0.29**	**0.001**		−0.09	0.340		**0.23**	**0.011**
Parental ADHD X Depression		**−0.22**	**0.005**		0.12	0.142		−0.02	0.833		−0.12	0.143

Significant associations are bolded. ODD, ADHD, and depression refer to symptom levels. Site did not moderate the associations between parent psychopathology and parenting behavior

ODD oppositional defiant disorder, *ADHD* attention-deficit/hyperactivity disorder

[a] ΔR^2 when parental depression is added to step 3

[b] ΔR^2 when parental ADHD is added to step 3

depressive symptoms were still associated with self-reported negative parenting after adjusting for parental ADHD symptoms, with another small but significant ΔR^2. By contrast, after adjusting for depressive symptoms, parental ADHD symptoms were no longer associated with self-reported negative parenting and did not account for additional variability.

Parental depressive symptoms were also associated with less self-reported positive parenting behavior after accounting for child behavior problems, with a significant but small ΔR^2. This also held after adjusting for parental ADHD symptoms. Parental ADHD symptoms were not associated with self-reported positive parenting behavior.

Although this was not the case at the bivariate level, parental depressive symptoms were associated with *more* observed positive parenting behavior with a small yet significant ΔR^2, but only after adjusting for child behavior problems and parental ADHD symptoms (Table 4). Parental ADHD symptoms were not associated with observed parenting after adjusting for child behavior problems and parental depressive symptoms.

Interactions between Parental Depressive Symptoms, Parental ADHD Symptoms, and Child Behaviors

Table 4 shows a significant interaction effect between parental depressive and parental ADHD symptoms for self-reported negative parenting, with the interaction accounting for small additional variability. Probing of the interaction was done in the manner recommended by Holmbeck (2002) and a graph of this interaction can be found in the Supplementary Material. An association between parental ADHD symptoms and more self-reported negative parenting was present for parents with low depressive symptoms (1 *SD* below the mean; $\beta = 0.23$, $p = 0.033$). No association existed between parental ADHD and self-reported negative parenting for parents with high depressive symptoms (1 *SD*

above the mean; $\beta = -0.07$, $p = 0.436$). None of the interactions between symptoms of child ADHD and parental ADHD, child ADHD and parental depression, child ODD and parental ADHD, and child ODD and parental depression, were significant.

Robustness Checks

There were some differences in study variables across the two sites, which are noted in Table 1. Because of this, we reconducted analyses adjusting for site, but this did not change any findings. In addition, the sample of parents consisted of 10% fathers. Reconducting analyses with the fathers removed did not change any of the results. Finally, instead of using a parent and teacher composite of children's ADHD and ODD behaviors, we reconducted analyses with either only parent or only teacher report of behaviors. When using only parent report, child ADHD behaviors became significantly associated with more self-reported positive parenting at Step 1 (after adjusting for child ODD behaviors). When using only teacher report, child ODD behaviors were no longer associated with self-reported negative parenting. There were no other changes in the associations between child behavior problems and parenting behaviors at Step 1, or between parental psychopathology and parenting behaviors at Steps 2–4.

Discussion

This study took a systematic approach to examining the incremental and interactive associations between parental depressive and ADHD symptoms, as well as child behavior problems, with parenting behavior among 213 families of children with ADHD. At the bivariate level, child ODD behaviors, parental depression, and parental ADHD, were each correlated with more self-reported negative parenting; parental depression also correlated with less self-reported positive parenting. In models accounting for child behavior problems, parental depressive symptoms were associated with more self-reported negative and less self-reported positive parenting, regardless of whether we accounted for parental ADHD symptoms. Parental ADHD symptoms were associated with more self-reported negative parenting, but this association did not remain when parental depressive symptoms were in the model. The effect sizes for these associations were small, although they are similar to the average effect sizes of associations found between parent psychopathologies and parenting in the literature (see Park et al., 2017). Child ODD symptoms were associated with more self-reported negative parenting after adjusting for child ADHD symptoms, but not with other parenting variables. Regarding interaction effects, the association between parental ADHD symptoms and more self-reported negative parenting was present only for parents with low depressive symptoms. No interaction effects were found between parental psychopathology and child behavior problems.

Associations between Parental Psychopathology and Self-Reported Parenting

In our sample, parental depressive symptoms were consistently associated with less self-reported positive parenting at the bivariate level and after adjusting for child behavior problems and parental ADHD symptoms, with small effect sizes. Our finding is consistent with the small existing literature about parental depression and parenting in families of children with ADHD; however these previous studies did not account for current parental ADHD symptoms (Chi & Hinshaw, 2002; Johnston et al., 2002). Therefore, our results provide more rigorous support for an association between parental depression and less positive parenting in families of children with ADHD. The core symptoms of depression, including low positive affect, loss of interest in enjoyable activities, and low energy, may interfere with parents engaging positively with their children. These same symptoms are not present in ADHD, which may explain the potentially unique association between parental depression and less positive parenting.

Parental ADHD symptoms were not associated with self-reported positive parenting behavior in any analyses: at the bivariate level, after adjusting for child behavior problems, and with or without adjusting for parental depressive symptoms. The existing literature contains a preponderance of studies finding no association between parental ADHD and positive parenting (Chronis-Tuscano et al., 2008; Murray & Johnston, 2006; Woods et al., 2019; Wymbs et al., 2015), although others do find an association (Chronis-Tuscano et al., 2008). Our results may support this lack of association, and suggest that this is not due to inconsistent consideration of other parent or child factors. We considered the possibility that parents with ADHD overestimate their positive parenting (Lui et al., 2013), which could explain the lack of association between parental ADHD and less self-reported positive parenting in our sample. Though, there were also no associations between parental ADHD and observed positive parenting.

Parental depressive symptoms were also consistently associated with more self-reported negative parenting at the bivariate level, after adjusting for child ADHD and ODD behaviors, and after adjusting for parental ADHD. Parental ADHD symptoms were associated with more self-reported negative parenting at the bivariate level and after adjusting for child behaviors, but this association became non-significant after adjusting for parental depressive symptoms. Parental depression has been linked to over-reactive and

unstructured parenting in a few samples of children with ADHD (Chi & Hinshaw, 2002; Gerdes et al., 2007; Thomas et al., 2015), however, no study to date has accounted for current symptoms of parental ADHD. Our study therefore provides more support for the idea that symptoms of depression such as low mood, irritability, and indecisiveness may be related to difficulties remaining calm and consistent in parenting. By contrast, the research on parental ADHD and negative parenting (whether over-reactive or inconsistent parenting), has yielded mixed results, with studies find an association for some variables, but not others, after adjusting for parental depressive symptoms (Chronis-Tuscano et al., 2008; Murray & Johnston, 2006). Our study results suggest that the associations between parental ADHD and negative parenting could be attributable to the level of parental depressive symptoms. Indeed, this is what we found when looking at the interaction of parental ADHD and depressive symptoms. Parental ADHD symptoms were associated with more self-reported negative parenting when depression was low but not when depression was high.

Although this speculation is post-hoc and implies directionality (which we cannot confirm, given our cross-sectional design), perhaps our results suggest different processes contributing to the association between parental depression and negative parenting versus parental ADHD and negative parenting. The irritability, low mood, pessimism, and fatigue associated with depression may result in parents finding children's behaviors to be more exhausting than a parent without depression would perceive them to be (Geller & Johnston, 1995). This negative cognitive and emotional style potentially colors parents' perceptions of all interactions and may result in parents being over-reactive and unable to provide appropriate structure. Alternatively, the process through which this might occur for parents with ADHD may relate to parents' difficulty regulating their emotions in the heat of the moment during specific, taxing situations. Indeed, research has found that the link between maternal ADHD symptoms and harsh parenting may be partially mediated by emotion regulation difficulties (Mazursky-Horowitz et al., 2015).

The process through which depression affects negative parenting may possibly be more influential than the process for ADHD, as suggested by our finding that parental depression (but not ADHD) was incrementally associated with negative parenting after accounting for the other psychopathology. That is, perhaps, when parents struggle with both depression and ADHD, it is the depression that most impacts parenting behaviors, but parents with only ADHD symptoms may also show more negative parenting for different reasons. This finding emphasizes the potential for different pathways through which ADHD and depressive symptoms may affect parenting.

Observed versus Self-Reported Parenting Behavior

Overall, neither parental ADHD nor depressive symptoms were associated with observed parenting behavior, at the bivariate level or in our regression analyses. Only after adjusting for parental ADHD and child behavior problems (and not without both these factors), parental depressive symptoms were associated with *more* observed positive parenting, which in our study, reflected the amount of praise the parent provided to the child. Notably, this was in the opposite direction of the association between parental depressive symptoms and less self-reported positive parenting. We hesitate to make much of this result; however, a possibility is that parents with depressive symptoms may perceive their behaviors as worse than their actual parenting practices. Given the well-documented cognitive biases in depression, these parents may have a distorted negative view of their own parenting that appears on self-report questionnaires but not observations, similar to what was found by Chi & Hinshaw (2002), which may explain our contradictory findings. Our result could also potentially indicate that parents with depression attempt to compensate for their symptoms by giving more praise during the time-limited observation, but are not able to consistently remain positive (a broader construct involving warmth and engagement) day-to-day.

Research that examines the effect of parent psychopathologies on parenting behaviors has increasingly included observational methods and reported some associations, particularly for depressive symptoms (see, for example, Chi & Hinshaw, 2002; Chronis-Tuscano et al., 2008; Johnston et al., 2002). One explanation for our lack of findings, even at the bivariate level, may simply be that ADHD and depressive symptoms are not associated with observed parenting behaviors in the Etch-A-Sketch task in this sample. This possibly relates to another interesting result: our observed and self-reported parenting variables were unrelated. The variables did not load together in our factor analysis, and bivariate correlations between the observed and self-reported composite scores indicated no relationship. Even though the Etch-A-Sketch task is commonly used in research to examine parenting behavior (Hay & Pawlby, 2003; Stevenson-Hinde & Shouldice, 1995; Unternaehrer et al., 2019), perhaps it was too novel and fun, or not sufficiently realistic or long enough, to elicit children's typical behavior and their parents' typical responses. This concern may particularly be relevant for families of children with ADHD, with whom, to our knowledge, the Etch-A-Sketch task has never been used. By contrast, parental self-report on the questionnaires may better reflect parents' actual practices over a variety of real-life situations with their children. The circumstances under which observed and self-reported parenting measures converge, versus do not converge, should be further examined.

Child Behavior Problems and Parenting

In our sample, child ODD symptom severity was only associated with self-reported negative parenting behavior, and child ADHD symptom severity was not associated with any parenting variable. Parenting difficulties are more likely to occur in response to child ODD behaviors, relative to ADHD behaviors (Deault, 2010; Johnston et al., 2012), and in this way our findings align with past research. However, child ODD symptoms were only associated with one out of our four parenting variables, which is surprising. This may reflect the higher functioning parents in our sample or it could suggest that our observational tasks were not sufficiently taxing. In terms of our lack of findings for child ADHD behavior, all children met diagnostic criteria for ADHD, so perhaps restriction of range led to the lack of association between child ADHD symptoms and parenting behaviors. Interestingly, child ADHD symptoms were associated with *less* negative parenting behavior, but only after parental ADHD (and child ODD) were entered in the regression. This may be an example of a suppression effect. That is, after accounting for the variance in parenting attributed to child ODD and parental psychopathology (all of which are associated with more self-reported negative parenting), child ADHD symptoms in and of themselves correlate with less negative parenting. Potentially, this underscores the relative importance of parental psychopathology and child ODD for negative parenting, over child ADHD. Or, perhaps we obtained these results because all children in our sample have ADHD diagnoses, so parents have a certain understanding and acceptance of their child's ADHD behaviors (which they may not have about their child's ODD behaviors, or about their own psychopathology). Such acceptance may increase parental tolerance and reduce harshness.

We also did not find interaction effects between parental psychopathology and child behavior problems in their associations with parenting. The similarity-fit hypothesis posits that when parents and children are both high on ADHD symptoms, this should lead to more positive and less negative parenting (Psychogiou et al., 2008). The similarity-misfit hypothesis posits the opposite: parents and children both high on ADHD symptoms would result in more negative and less positive parenting. We did not find support for either hypothesis, or for any type of parent psychopathology or child behavior problem combination. There could be a few reasons for this. One could be that our measures of child behavior problems, especially ADHD symptoms, were not well-associated with our parenting variables, so this weakened the tests of interaction effects. Another idea, although speculative, is that situational factors may influence whether similarity-fit is elicited. Perhaps the impulsivity and hyperactivity symptoms of ADHD (and the associated emotion regulation difficulties) result in parents being less positive and more over-reactive to their children in structured situations that require child compliance. By contrast, in unstructured situations where the focus is on fun, perhaps parents with elevated symptoms of ADHD are more attuned with their child and able to engage more positively than parents without symptoms of ADHD. The research thus far on similarity-fit has not taken context (structured versus unstructured) into account.

Strengths and Limitations

This study systematically investigated the incremental and interactive contributions of parental depressive and ADHD symptoms, and child behaviors, to parenting in families of children with ADHD. Through such an analytic approach, we aimed to gain a more comprehensive picture of how these parent and child factors are related to parenting (e.g., at the bivariate level, after adjusting for other factors, in interaction). Although few findings occurred in the observational data, another strength was the inclusion of self-report and observational measures of parenting behavior. Future research should examine relationships between observational and self-report measures, and continue to use observational measures of parenting to tease apart if associations are potentially attributable to parents' self-perceptions. Other strengths include the use of parent and teacher report of child behavior, thorough diagnostic procedures to determine that the children had ADHD, and a larger sample relative to previous studies.

There are a number of limitations to this study. Our findings were obtained on measures that were completed by parents, therefore, the associations between parent psychopathology and parenting behavior might be attributable to shared rater and method variance. Further, although we propose that parental psychopathology and child behavior influence parenting, the cross-sectional study design prevents any conclusions about the directionality of these findings. As we were unable to examine relationships between these variables over time, we could not examine the transactional aspect of the developmental-transactional model that motivated this study. To further examine this model, longitudinal data that allows for the examination of the bidirectional relationship between parent and child factors over time is necessary. We also relied on composite scores of parenting to reduce the number of analyses conducted, but this may obscure potentially different patterns across parenting variables.

Regarding our sample, parents were treatment-seeking and willing to participate in research; therefore, they may have better parenting practices and lower psychopathology compared to the general population of parents of children with ADHD. However, treatment was provided in community clinics to reduce barriers to attending and we included parents who dropped out after initial data

collection but before treatment began. Comparable to the 7% of mothers of children with ADHD who reported a current mood disorder in Chronis et al. (2003), in our sample 23 parents (11%) reported depressive symptoms at a level of moderate or higher on the BDI-II. By contrast, 25 parents (12%) reported significantly elevated ADHD symptoms, defined as symptoms >1.5 *SD* above the mean for their age group in the norming sample on the CSS (Barkley & Murphy, 2006). This is lower than what was found by Takeda et al. (2010), where 23% of fathers and 27% of mothers of children with ADHD had significant ADHD symptoms. An additional consideration is the high correlation between parental depression and ADHD, in this sample and generally. This makes examining the unique association of each psychopathology more difficult and is a limitation of our current analytic approach. Nonetheless, the distinct conceptualizations and treatment implications for each psychopathology, as well as their relevance to this population, make examining each an important undertaking.

The sample was primarily White, although the two-site design of this study provided diversity in terms of French- and English-speaking participants from distinct cultural contexts. Our sample was also comprised of mostly mothers, and these findings may not generalize to how fathers' psychopathology is associated with parenting. Lastly, only one parent was examined in this study; the other parent may have psychopathology that also contributes to the parenting interactions between the parent in the study and the child, as highlighted by Wymbs et al. (2017).

Clinical Implications

Our results underscore the importance of considering a tailored approach in assessment and intervention to support parenting in families of children with ADHD. Only considering the influence of the child's behavior, or considering one parental psychopathology, may provide an incomplete clinical picture of family functioning. In the current sample, results suggest that parental depression may be more concerning for parenting than parental ADHD, given the robustness of the associations which persisted after adjusting for ADHD. Therefore, measuring depression in parents of children with ADHD may be important to understand potential sources of difficulties in parenting, whereas assessing only for parental ADHD may obscure clinicians' ability to help parents. However, parental ADHD was associated with negative parenting for parents low in depression, so ignoring ADHD symptoms in parents would also be an oversight.

The small effect sizes obtained and the cross-sectional, correlational nature of this study warrant caution in the interpretation of these findings for intervention. However, for a parent presenting with depressive and ADHD symptoms, a clinician might consider whether the depressive symptoms are having a greater impact on parenting than the ADHD symptoms and whether depression should therefore be prioritized as a treatment target. Behavioral parent training is a common and empirically supported intervention for families of children with ADHD (Evans et al., 2018), whereby parents are coached to increase positive and reduce negative parenting to support their child's adjustment. Results from this study could be useful for the design and modification of behavioral parent training programs to incorporate content addressing parental psychopathology (Chronis-Tuscano et al., 2013).

Conclusion

Parents of children with ADHD have the tough task of parenting children with difficult to manage behaviors. On top of this difficulty, parents of children with ADHD have an elevated likelihood of their own depressive and/or ADHD symptoms, which may also influence their parenting. Our findings indicate that parental depressive symptoms, in particular, were associated with both less positive and more negative parenting as reported by parents (but not on observations), while parental ADHD symptoms appeared to be linked to more self-reported negative parenting only when parents also reported low depressive symptoms. Future research and clinical work in this population should consider the potentially complex contributions of child ODD behavior problems, parental depression, and parental ADHD to understanding parenting in families of children with ADHD.

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Compliance with Ethical Standards

Conflict of Interest The authors declare no competing interests.

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