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The Effects of Parent-Child Interaction Therapy on Parent Feeding Practices and Children's Problematic Mealtime Behaviors

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Many children are fussy or demanding about food, and managing these behaviors can be difficult and distressing for parents. Yet, no previous study had examined whether Parent-Child Interaction Therapy (PCIT), an interactive parenting support program that coaches caregivers while they interact with their young children, improves problematic mealtime behaviors and food-related parenting practices. In this study, 178 parents in Australia (M_{age} = 35.1 years, *SD* = 7.5 years; 93% female) of young children (M_{age} = 4.5 years, *SD* = 1.3, 76% male) completed up to two baseline surveys (prior to a waitlist, pre-PCIT) and a third survey after PCIT. The surveys included measures of their parenting practices in general and related to feeding and mealtimes, beliefs about eating, and children's mealtime behavior (e.g., food avoidance, mealtime aggression) and general externalizing symptoms. Using paired *t*-tests, no changes were found during baseline (pre-waitlist to pre-PCIT), but from pre- to post-PCIT, medium to large improvements were found in parent mealtime demandingness and responsiveness, aversion to mealtime, child eating behaviors, general parenting practices, and child externalizing behavior. However, positive mealtime environment did not improve and improvements in general parenting and behavior were larger than for eating-related parenting and child behavior. The findings suggest that PCIT can be effective for reducing most problematic mealtime behaviors and can improve multiple parental feeding practices.

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When children are picky about food or unregulated in their patterns of eating, mealtimes (and the sharing of food, in general) can be a setting for a great deal of disruptive behavior (Lewinsohn et al., 2005), family stress, and chaotic and coercive behavior by parents and children (Dahlsgaard & Bodie, 2019; Ramos-Paúl et al., 2014; Wolstenholme et al., 2020). While definitions vary across the literature (Cardona Cano et al., 2015), picky eating can be defined as a restricted intake of a variety of foods, whereby the child has a strong preference for familiar foods and is unwilling to try unfamiliar/new foods (i.e., food neophobia; Wolstenholme et al., 2020; Zohar et al., 2020). Children's picky eating is associated with many difficulties for families, including family and caregiver stress (Goh & Jacob, 2012; Ramos-Paúl et al., 2014), caregiver anxiety (Mascola et al., 2010), and negative child affect (Jacobi et al., 2003; Lafraire et al., 2016). Specifically, Ramos-Paúl et al. (2014) found that families rated mealtime-related stress higher for children with picky eating compared to other children. Additionally, families with picky eaters were more likely to have conflict during mealtimes. Child tantrums during mealtimes have been widely reported, consisting of crying, spitting and throwing food, and pushing food away, also called "food manipulation" behavior (Lewinsohn et al., 2005). Therefore, children's problematic mealtime behaviors (PMBs) include picky eating as well as challenging behaviors that increase mealtime stress.

PMBs are common, especially among young children (Wolstenholme et al., 2020). Prevalence rates of PMBs range from 14% to 50% for preschool aged children (Carruth et al., 2004; Dubois et al., 2007), and 7% to 22% in older children (Mascola et al., 2010; Micali et al., 2011). In a longitudinal study of children ages 1.5 to 6 years, 46% of participating children were identified as picky eaters, with the rate of picky eating reducing over time (27.6% at 3 years of age, reducing to 13.2% at 6 years of age; Cardona Cano et al., 2015).

Considering the number and variety of tasks that caregivers of young children manage every day, it is understandable that frequent PMBs would erode emotional stability during family mealtimes and increase caregiver distress. Specialized programs for picky eating and mealtime behavioral concerns are often designed for children with medical or developmental atypicality, and the programs occur in hospital settings despite much of the behavioral concerns occurring at mealtimes in the home (Dahlsgaard & Bodie, 2019). Thus, caregivers and allied health professionals often search for community and home-based support. One possibility to alleviate the burden on specialty services is to access more widely available parenting programs, as they may provide general skills for children and parents that can improve the feeding domain and mealtime disruptions. In this study, we investigated whether Parent-Child Interaction Therapy (PCIT), an interactive parenting support program that coaches parents while they interact with their children (McNeil & Hembree-Kigin, 2010; Niec et al., 2022), was associated with improvement in children's PMBs, as well as food-related parenting practices. At the same time, we measured children's general levels of externalizing behaviors and parents' positive and negative parenting practices to allow us to also determine improvements from pre- to post-PCIT in these more general behaviors of children and parents.

PCIT: Effectiveness and Addressing Children's Eating Behaviors

PCIT is a didactic parenting intervention, whereby a parent receives coaching as they interact with their child. A PCIT provider coaches the parent with the aim of increasing positive parent-child interactions and parenting skills through play (McNeil & Hembree-Kigin, 2010; Niec et al., 2022). PCIT providers usually observe these interactions via a one-way mirror and directly coach parents via an earpiece to use consistent positive parenting skills in response to child behavior and play, with some opportunities to coach parents through children's disruptive reactions to ending play or parents' directing the play. PCIT is divided into two phases of child-directed interaction (CDI) and parent-directed interaction (PDI). Parents successfully complete the program upon meeting mastery of the relevant skills for each PCIT phase, and generally complete the program within 15 sessions (1 × assessment session, 2 × didactic teaching sessions, and 12 × coaching sessions, aligning with a time-limited treatment model; Thomas & Zimmer-Gembeck, 2012). However, completion time can vary depending on skill uptake (refer to McNeil & Hembree-Kigin, 2010, for more details).

PCIT is an evidence-based parenting program. Over decades of research (see Campbell et al., 2023; Comer et al., 2013; Thomas et al., 2017,

for reviews), PCIT has been found to improve children's externalizing behaviors (e.g., Abrahamse et al., 2016; McCabe et al., 2012), improve parent-child relationships (e.g., Abrahamse et al., 2016; Thomas & Zimmer-Gembeck, 2012), reduce parent stress (Cooley et al., 2014), and result in parental improvements in emotion regulation (Zimmer-Gembeck et al., 2019). Evidence has been gathered using a variety of research designs, both in clinical (e.g., Thomas & Zimmer-Gembeck, 2012) and community settings (e.g., Abrahamse et al., 2016), and also through randomized controlled trials that include multiple measures and reports from parents plus observations (e.g., McCabe et al., 2012, Thomas & Zimmer-Gembeck, 2011, 2012).

We could not locate any study of the effects of PCIT without modifications (i.e., standard PCIT) on parent feeding practices and children's PMBs. However, a recent study investigated the effects of standard PCIT exclusively on child problematic eating behaviors like overeating (Lyons et al., 2022). Participating families were involved with child welfare services and were randomized to either PCIT or services-as-usual condition. Children who completed PCIT showed reductions in food responsiveness (i.e., tendency to eat when full in response to external stimuli such as sight or smell), speed of food consumption, and emotional overeating when compared to the services-as-usual condition. Standard PCIT was proposed to reduce child problematic eating behaviors, despite the intervention not directly focusing on coaching related to eating behaviors. In this study the aim was to fill a gap in the literature by exploring if standard PCIT improves children's disruptive mealtime behaviors, such as picky eating and food aggression. We also considered the effects of PCIT on parent feeding practices, which had not been examined in past research.

There have also been some modifications made to PCIT with the aim of obesity reduction. For example, PCIT-Health is one modified PCIT intervention that involved the addition of a third phase (i.e., CDI and PDI plus health-directed interaction; HDI). In HDI, parents received education and coaching to practice using positive mealtime parenting practices (refer to Domoff & Niec, 2018; Niec et al., 2022, for a complete description of PCIT-Health). Only one publication has focused on outcomes of PCIT-Health. In this study, a case example was described, which involved two parents and their 5-year-old son (Niec et al., 2022). Following the program, the parents self-reported more positive mealtime interactions and reductions in parental pressure to eat and disruptive behaviors. Further to this, an unpublished dissertation (Rybak, 2019) reported children were more likely to eat in a structured eating task following PCIT-modified "Do" skills rather than "Don't" skills, indicating that these modified-PCIT skills may be helpful in improving child picky eating. Nevertheless, it is possible PCIT does not require modification to improve children's PMBs and food-related parent practices. Such a view is consistent with calls to test whether programs impact on outcomes without modification before deciding to undertake significant enhancements or make substantial changes to programs that already have solid evidence of effectiveness for related outcomes (Wiltsey Stirman et al., 2019).

There were multiple reasons to expect that PCIT would be beneficial for parenting feedback practices and reducing children's PMBs. Through in-vivo coaching, standard PCIT encourages parents to consistently reinforce positive child behavior, use appropriate behavior management strategies to help downregulate children's disruptive behaviors, and foster more positive parent-child interactions (McNeil & Hembree-Kigin, 2010). Many of these skills are relevant across contexts and could easily generalize to mealtimes and PMBs in children. In addition, generalizing these skills to mealtimes may contribute to a settled and calmer environment (Lyons et al., 2022), thus likely decreasing child PMBs.

FOOD-RELATED PARENTING

There has been a great deal of research on how parenting practices or behaviors may play a role in children's PMBs (Balantekin et al., 2020; Blissett, 2011; Joyce & Zimmer-Gembeck, 2009; van der Horst & Sleddens, 2017). Overall, this literature shows that parents are able to have an impact on children's PMBs (for a systematic review see Wolstenholme et al., 2020), suggesting that parenting programs, because of their positive impacts on parent-child relationships and on many parenting practices (Sanders & Woolley, 2005), could be beneficial in helping parents to implement new strategies to improve their children's PMBs. Yet, there have been many approaches to the study of food-related parenting, especially that of parent feeding practices.

A focus on specific parenting practices has been extended to the feeding domain and includes the behaviors parents use during mealtimes with their children (Balantekin et al., 2020). In this research, both positive (e.g., praise and establishing mealtime routines) and negative parenting practices (e.g., restricting, and overt control of the child's food intake; Balantekin et al., 2020) have been

studied. Positive parenting practices, such as parental negotiation about food intake and parental monitoring, have been associated with increased vegetable intake (Vereecken et al., 2009) and lower child body mass index (BMI; Faith et al., 2004), respectively. In contrast, a common negative parenting practice explored in the literature is that of parental pressure to eat foods, which is associated with avoidance of foods (Ek et al., 2016, 2019), higher picky eating for children (Jansen et al., 2017), and lower fruit and vegetable consumption for young girls (Fisher et al., 2002). Joyce and Zimmer-Gembeck (2009) reported similar findings, indicating that restrictive parents are more likely to have children that display disinhibited eating, and this association was stronger when parents were also coercive. In related research, studies have focused on other positive and negative parenting practices. One of the most common approaches is to consider parents' levels of food-related responsiveness to the child (i.e., how the parent encourages a child to eat, either in a responsive or an unresponsive manner) and feeding demandingness (i.e., the extent to which the parent encourages a child to eat; Hughes et al., 2005). In the present evaluation of PCIT, we focused on responsiveness and demandingness, expecting that PCIT would result in improvements in these feeding-related parenting practices.

PMB INTERVENTIONS

PCIT has potential as an effective treatment to improve children's PMBs and parents' feeding practices, given that it shares many features (e.g., parent training for differential reinforcement) with programs designed specifically for children with eating difficulties (Dahlsgaard & Bodie, 2019). For instance, two studies incorporated the teaching of behavior management strategies, which is a core element of PCIT (Douglas & Harris, 2001; Haywood & McCann, 2009), to address feeding problems. However, these studies used exposure to food as opportunities for teaching behavior management, finding a trend of improvements in outcomes (e.g., appetite and food enjoyment) in 12 families. In addition, another study (Fraser et al., 2004) reported integrating behavior management strategies such as role modeling and positive reinforcement to improve parenting practices. In this study, a single-session, community-based education intervention with parents of children with PMBs was implemented and measures were collected across four time points. Intervention effects indicated improvements in child eating problems and mealtime behaviors. Hence, evidence-based treatments for feeding difficulties in young children have been found that intervene at the parent-child interaction level, facilitating positive change in the child's feeding via training parents to behave differently in contexts where food is present. However, it is unknown whether similar skills taught to parents to improve child behaviors in non-food-related settings (such as that taught in Standard PCIT) generalize to food-related contexts, which would inform whether programs like PCIT could fill the gap in care for families with children experiencing PMBs.

THE CURRENT STUDY

Despite the promising outcomes from available parent programs that focus on eating specifically, the limitations of these studies prevent drawing conclusions about their effectiveness for PMBs across families who are presenting because of high levels of parent distress and children's disruptive behaviors. Many of the existing studies of parenting programs are designed with the aim of reducing obesity and focused on small samples of children selected for significant eating problems. Many studies also have not had the opportunity to identify whether program participation is associated with improvements in parent feeding practices and children's PMBs, given there were no available pretreatment measures. These gaps suggest the need for an evaluation of food-related outcomes from an intensive parenting program, which includes a large sample of parents and uses a cohort design with pretreatment to posttreatment measures. In this study, we addressed these research gaps by investigating whether children's PMBs and parents' feeding and mealtime management practices improved post-PCIT relative to pre-PCIT in a large sample of parents who presented with high levels of parenting stress due to parenting a young child with elevated externalizing behaviors (e.g., volatile tantrums, aggression, emotion dysregulation). In addition, given the need for a waiting period as parents entered the program, we used a multiple baseline design whereby all participants completed all measures prior to starting their wait and just prior to starting PCIT. This allowed us to compare improvements from (1) pre-waitlist to pretreatment and (2) pre- to posttreatment to better isolate whether improvements were associated with participation in PCIT, rather than simply improvements due to time or attention while on the waitlist (or other unknown reasons). We tested the following hypotheses:

1. Children's PMBs, measured as food refusal/avoidance, food manipulation, mealtime aggression/distress, and choking/gagging/vomiting, as well as

general externalizing behaviors, will improve post-PCIT relative to pre-PCIT, but PMBs will not differ pre-PCIT relative to pre-waitlist.

2. Parents' feeding practices, measured as parent responsiveness and parent demandingness, and parents' reports of a positive mealtime environment, an aversive mealtime environment, and children's resistance to eating, as well as general positive and negative parenting practices, will improve post-PCIT relative to pre-PCIT, but parents' practices will not differ pre-PCIT relative to pre-waitlist.

Method

PARTICIPANTS

The participants were 178 mostly female (93%) caregivers (M_{age} = 35.1 years, *SD* = 7.5 years) who participated in PCIT with a child aged between 2 and 8.5 years (76.4% male, M_{age} = 4.5 years, *SD* = 1.3 years) in an urban area of Australia. Caregivers were biological mothers (90%), other female family members (e.g., grandmother; 3%), or biological fathers (7%). We refer to all caregivers as "parents" in the following sections for simplicity. Parents were referred to a university psychology clinic located in Australia due to experiencing problems with severe child disruptive behaviors. Children referred to this service can be diagnosed or undergoing assessment for neurodevelopmental disorders like Autism and Attention-Deficit/Hyperactivity Disorder; however, their primary concerns were disruptive behavior. The current study included 11 children diagnosed with Autism.

Most parents (71%) were born in Australia. Five participants identified as Australian First Nation Peoples. Regarding relationship status, 63% of participants were married or de facto, 19% were divorced or separated, 11% were single, 1% were widowed, and 6% either preferred to not respond or had circumstances such as being married but currently living separately or divorced but living together. About one-half of the parents were employed (54%). Sixty-four percent of parents reported completing high school and pursuing tertiary education (inclusive of certificates, diplomas, or tertiary degrees), while 12% of parents reported their highest education level was grade 10, and other participants had completed more education (24%). Finally, parents reported their total household income as less than A$25,000 (15%), between A$25,001 to $50,000 (20%), between A$50,001 to $70,000 (10%), between A $70,0001 to $90,000 (12%), between A$90,001 to $110,000 (12%), and more than A$110,000 (26%). The remaining 5% did not report income.

PROCEDURE

Ethical approval for the study was granted by the University's Human Research Ethics Committee (reference number 2013/80). Participants were referred to a public allied health clinic (located within a university) by professionals working in government public health settings (e.g., child health nurses; 37.9%), pediatricians, general practitioners or psychologists (35.6%), nongovernment and education settings (13.4%), or self-referred (12.9%). Caregivers were accepted into the program if the child was in the age range for PCIT, and parents were reported either to have significant levels of distress due to parenting problems, inappropriate discipline strategies, aggressive parental communication, or challenges managing child behavior problems. Parents were asked to attend weekly appointments and had to have ongoing care of the participating child (i.e., child would be in their care for the foreseeable future), and to have no conditions that were contraindicative for PCIT such as active psychosis, current domestic violence, or parents being alleged perpetrators of child maltreatment. Families currently involved with child protection services were provided with PCIT services but were excluded from this study due to modifications to the PCIT protocol that were frequently necessary, such as extending the relationship enhancement component of the program beyond standard protocol.

Upon receiving a referral, families attended an initial appointment (i.e., semistructured interview). Consenting parents completed pre-waitlist surveys (T1) and were placed on the supported waitlist (described below). Following the supported-waitlist period, parents completed pre-PCIT surveys about one week before commencing PCIT (T2). The post-PCIT survey was then completed 14 weeks after the first session of PCIT regardless of number of sessions completed (T3).

Forty-one families were impacted by COVID-19 stay-at-home orders or clinic closure (e.g., no in-person sessions could occur from March 2020–June 2020). During this time, families were offered either phone or telehealth sessions and approximately 70% of impacted families received continued services. Independent *t*-tests were utilized to compare families impacted by COVID-19 and those who were not impacted; no significant differences, across any measure or time point, were observed. All analyses reported below were repeated to test COVID-19 disruption (yes/no) as a fixed effect in ANOVA to determine if it had

an effect on pre-waitlist to Pre-PCIT change or pre-PCIT to post-PCIT change, with the alpha level adjusted by the number of *t*-tests to $p < .004$. COVID-19 disruption status was not significant in any of the models.

Treatment

Parents completed PCIT in two phases, CDI and PDI. In CDI, parents practice relationship enhancement and behavioral modification skills such as praising positive behavior, reflecting appropriate child talk, describing, imitating appropriate child play, and selective attention (i.e., reducing attention given to inappropriate behavior to avoid reinforcement of such behavior). Upon meeting mastery in CDI skills, parents progress to PDI, which involves learning additional skills regarding behavior management. Within these two phases, parents attend two didactic teaching sessions to learn about the relevant skills for each phase, in addition to receiving direct coaching from therapists to practice these skills. Parents are also required to practice skills at home between sessions. In each phase of PCIT (CDI and PDI), parents worked towards meeting mastery of the skills. Parents also attend two assessment sessions (i.e., pre- and postassessment sessions). The protocol for progressing families through PCIT based on mastery criteria for PRIDE skills was followed, but some families were moved from the first phase (CDI) to PDI without meeting mastery criteria if substantial improvement to PRIDE skills was achieved and further improvements became unlikely. This approach aligns with a time-limited treatment model, as it has been found that providing additional coaching sessions beyond 6 (per phase, 12 coaching sessions total) does not result in significantly more skill uptake for parents or better outcomes for children (Thomas & Zimmer-Gembeck, 2012).

Waitlist

Parents received weekly SMS messages from research staff to remind them of the waitlist period and to offer a check-in call. Check-in calls avoided addressing parenting practices or parent-child interactions, but rather pertained to updating families about the waitlist period and/or enquiring about caregiver and child wellbeing. For the study participants, the range of time spent on the waitlist was 10–17 weeks before completing the pre-PCIT survey and beginning PCIT sessions.

PCIT Training and Treatment Integrity

The site where this study was conducted has provided PCIT within a community-university partnership for over 20 years (see Campbell et al., 2023, for more information on this site). Data collection occurred from March 2018 to September 2020. Six primary therapists provided service to approximately 60% of families, but 15 therapists total were trained and provided PCIT to families, with a collective 30 years of experience amongst them. Five of these therapists were fully registered psychologists, while 10 others were provisionally registered or became registered during this period of time. Four therapists were responsible for training staff members in PCIT, all of whom were accredited in PCIT.

Prior to becoming an independent PCIT therapist, trainees undertook at least 6 months of training, which included direct observation, co-facilitation, and supervised coaching. To provide PCIT independently, trainees were required to do a 10-hour online training in PCIT, observe (at minimum) one family in PCIT from start to finish, log observation and co-therapy hours, complete PCIT with a family as a co-therapist with a trained therapist, and attend ongoing peer and group supervision. Treatment fidelity was ensured via observation by trained therapists for a year, biweekly staff meetings, weekly individual supervision (both scheduled and on-demand, as needed), and regularly scheduled peer and group supervision with an external supervisor trained in PCIT. Trainees' coding of key PCIT skills was systematically checked during observation and co-therapy sessions.

MEASURES

Caregiver Feeding Practice of Responsiveness and Demandingness

The Caregiver Feeding Styles Questionnaire (CFSQ; Hughes et al., 2005) was used to measure parental feeding demandingness (such as using demands, threats, and reward contingencies) and parental feeding responsiveness (such as supporting autonomous choice of appropriate foods, complimenting, and speaking positively about food). The CFSQ contains 12 parent-centered items (e.g., "shows disapproval of child for not eating") and 7 child-centered items (e.g., "helps child to eat"). Responses ranged from 1 (*Never*) to 5 (*Always*). Items on each subscale were averaged to produce a composite score for parent-centered eating strategies (Cronbach's $\alpha = .79$) and child-centered eating strategies (Cronbach's $\alpha = .69$). As recommended by the scale authors, parent-centered and child-centered items were averaged to produce a composite parent feeding demandingness score (Cronbach's $\alpha = .81$), whereby higher scores indicate more parent feeding demandingness at mealtimes. The composite parent feeding

responsiveness score was formed by dividing the child-centered score by parent feeding demandingness, so that a higher score indicates more use of more responsive child-centered feeding relative to demandingness.

Parent Beliefs About Eating

About Your Child's Eating (AYCE; Davies et al., 2007) was completed by parents to measure "frequency of child eating behaviors, mealtime interactions and their feelings about mealtimes" (Davies et al., 2007, p. 458). The AYCE has 25 items, rated from 1 (*Never*) to 5 (*Nearly Every Time*). This measure has three subscales: child resistance to eating (e.g., "My child hates eating"), positive mealtime environment (e.g., "Mealtimes are among the most pleasant in the day"), and parent aversion to mealtime (e.g., "I dread mealtimes"). Items for each subscale are summed to create total subscale scores where higher scores indicate greater feeding relationship disturbance for child resistance to eating and parent aversion to mealtime, but a lesser feeding disturbance for positive mealtime environment. Cronbach's αs were .86 for child resistance to eating, .81 for positive mealtime environment, and .90 for parent aversion to mealtime.

Child Mealtime Behavior

The Mealtime Behavior Questionnaire (MBQ; Berlin et al., 2010) is a 31-item instrument measuring the frequency of child problematic behaviors during mealtimes. Three subscales were included in the current study: food refusal/avoidance (e.g., "Eating too slowly"), food manipulation (e.g., "Throwing food"), and mealtime aggression/distress (e.g., "Screaming") on a 5-point Likert Scale (*1 = Never*; *5 = Always*). Items for each subscale were summed to obtain total scores. Higher scores reflect negative child and family mealtime behavior. Cronbach's αs were .88 for food refusal/avoidance, .79 for food manipulation, and .84 for mealtime aggression/distress. Although participants were not recruited specifically for mealtime behavior problems, it is notable that participating parents reported children's mealtime behavior at levels higher than that reported in community samples (see Berlin et al., 2010). For reference, food refusal was three-fourths a standard deviation (*SD*) above the mean reported by Berlin ($M = 26.53$, $SD = 8.06$) in their community sample (with a $z = 0.88$ and 0.76 when the current study's two pre-PCIT means were compared). Food manipulation was about one-half to three-fourths a *SD* above Berlin et al.'s mean ($M = 19.78$, $SD = 3.38$; $z = 0.80$ and 0.56). The largest difference was for mealtime aggression, which was almost 1.5 *SD*s above the mean reported by Berlin et al. ($M = 14.09$, $SD = 4.71$; $z = 1.47$ and 1.42).

Positive and Negative Parenting Practices

Parenting practices were assessed with the Parent as Social Context Questionnaire for Young Children (PCSQ-YC; Zimmer-Gembeck et al., 2019). The PCSQ-YC contains 12 items to tap negative parenting practices of rejection, coercion, and chaos (e.g., "When my child does something wrong, my reaction may not be easy to predict") and 12 items that tap positive parenting practices of warmth/involvement, autonomy support, and structure (e.g., "I do something special with my child"). Response options ranged from 1 (*not at all true*) to 4 (*very true*). Items were averaged to form scores for positive and negative parenting practices, Cronbach's αs = .73 and .78 for positive and negative parenting, respectively.

Child Externalizing Symptoms

Behavioral Assessment Scale for Children-Second Edition (BASC-2; Reynolds & Kamphaus, 2004) was used to measure child externalizing symptomology. The BASC-2 has 134 items and responses range from 1 (*never*) to 4 (*almost always*). Subscales of this externalizing subscale have 12 items that include questions about hyperactivity (e.g., "Acts without thinking") and aggression (e.g., "Seeks revenge on others"). Items were summed to obtain a total score for externalizing behaviors. Cronbach's α was .91.

OVERVIEW OF ANALYSES

Of the 178 participating families, 4 (2%) completed only the pre-waitlist survey, 64 (36%) completed the pre-waitlist and pre-PCIT surveys, and 110 (62%) completed all three surveys (pre-waitlist, pre-PCIT, and post-PCIT). Screening analyses were conducted to examine differences in demographic information and pre-measures between those who completed the post-PCIT survey and those who did not. There were no significant differences between groups, *t* values ranged from -1.21 to 1.28 and *p* values ranged from .202 to .718. There were also no significant differences for child age $t(175) = -.794$, $p = .428$, child gender χ^2 (1) = .12, $p = .729$, caregiver age $t(175) = 1.44$, $p = .15$, and last, for referral source χ^2 (6) = 3.98, $p = .680$.

To test Hypotheses 1 and 2, paired *t*-tests were used. The alpha level was adjusted by the number of *t*-tests to $p < .004$. A first set of paired *t*-tests compared mean scores at pre-waitlist to pre-PCIT. Given only one improvement from pre-waitlist to pre-PCIT, the primary analyses involved

a second set of paired *t*-tests to compare mean scores at pre-PCIT to post-PCIT. Analyses were conducted for only the families who completed all surveys ($n = 110$) and were repeated after using multiple imputation to estimate post-PCIT data for noncompleters, allowing the inclusion of all 178 families in all analyses. Multiple imputation was conducted using SPSS version 28, and 20 imputed datasets were produced. All key study variables were entered to estimate the missing values. The results for the 178 families are pooled across the 20 imputed datasets.

Results

Table 1 reports the correlations of all study variables for pre-PCIT scores. Table 2 reports the means (*M*s) and standard deviations (*SD*s) for all measures at pre-waitlist, pre-PCIT, and post-PCIT for those who completed three surveys. Table 3 reports this information for all participants with missing data imputed to maintain all who parents who completed at least one survey in the analyses.

CORRELATIONS BETWEEN MEASURES

Correlations between pre-PCIT measures are presented in Table 1. Associations between parent feeding-related outcomes, child eating behaviors, general parenting and child externalizing behavior were all in the expected directions. Parent eating responsiveness and positive mealtime environment were associated with less child food refusal, manipulation, aggression, and resistance to eating. In contrast, parents with a demanding feeding style and an aversion to mealtimes reported increased child food refusal and aggression, manipulation of food, and resistance to eating. Regarding general parenting, negative parenting practices was associated with increased scores on all four of the food-related child outcome measures. However, positive parenting practices had significant, negative associations with two of the four food-related child outcome measures (i.e., lower manipulation of food and food aggression). These correlations were weaker than those correlations reported between negative parenting practices and food-related child outcomes. Child externalizing behavior was also associated with food-related child outcomes, with greater externalizing behavior linked to increased child food refusal, manipulation, aggression, and resistance to eating. Interestingly, child age was only associated with one outcome measure, in which parents reported that younger children engaged in increased manipulation of food.

CHANGES FROM PRE-WAITLIST TO PRE-PCIT

As can be seen in Tables 2 and 3, one of the 12 study outcome measures significantly differed when pre-waitlist scores were compared to pre-PCIT scores; positivity of the mealtime environment increased. Given there were few differences, we did not control for pre-waitlist scores in the next analyses of change from pre-PCIT to post-PCIT.

CHANGE FROM PRE-PCIT TO POST-PCIT

As shown in Tables 1 and 2 and supporting the hypotheses, three of the four food-related parenting outcome measures and three of the four food-related child outcome measures improved from pre-PCIT to post-PCIT (all $p < .001$),

Table 1
Correlations Between All Study Variables for Pre-PCIT Scores ($N = 178$)

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Child age	–										
2. Parent eating demandingness	−.13	–									
3. Parent eating responsiveness	.06	−.69**	–								
4. Parent positive MT environment	−.02	−.37**	.34**	–							
5. Parent aversion to MT	.03	.65**	−.48**	−.64**	–						
6. Child resistance to eating	.03	.66**	−.41**	−.54**	.78**	–					
7. Child food refusal	−.01	.71**	−.39**	−.45**	.74**	.76**	–				
8. Child manipulation of food	−.17*	.50**	−.26**	−.25**	.46**	.44**	.62**	–			
9. Child food aggression	−.09	.43**	−.24**	−.33**	.45**	.41**	.57**	.59**	–		
10. Parent negative practices	−.02	.36**	−.33**	−.33**	.44**	.35**	.34**	.31**	.39**	–	
11. Parent positive practices	.07	−.25**	.29**	.36**	−.17*	−.13	−.11	−.16*	−.18*	−.−.20**	–
12. Child externalizing behavior[a]	.06	.24**	−.14	−.18*	.33**	.22**	.39**	.42**	.46**	.51**	−.07

MT = mealtime.
[a] Raw Scores.
* $p < .05$.
** $p < .01$.

Table 2
Means (*M*), Standard Deviations (*SD*), and Comparisons Between Measures at Pre-Waitlist, and Pre- and Post-PCIT for Participants Who Completed All Three Repeated Surveys ($N = 110$)

Measure	Pre-Waitlist *M* (*SD*)	Pre-PCIT *M* (*SD*)	Post- PCIT *M* (*SD*)	Pre-Waitlist to Pre-PCIT			Pre-PCIT to Post-PCIT		
				Paired *t*-test	*p*-value	Cohen's *d*	Paired *t*-test	*p*-value	Cohen's *d*
Eating-related parenting and child behaviors									
Parent eating demandingness	2.56 (0.73)	2.56 (0.75)	2.33 (0.74)	−0.02	.988	0.00	4.72	<.001	0.31
Parent eating responsiveness	1.15 (0.20)	1.12 (0.19)	1.19 (0.21)	1.50	.138	0.14	−3.98	<.001	0.35
Parent positive MT environment	15.55 (4.07)	16.26 (3.87)	16.85 (3.91)	−2.58	.011	0.25	−1.91	.058	0.15
Parent aversion to MT	12.97 (4.84)	13.26 (5.12)	11.85 (4.91)	−0.83	.408	0.08	3.82	<.001	0.28
Child resistance to eating	29.86 (8.90)	29.85 (8.36)	28.65 (8.80)	0.03	.979	0.00	2.28	.025	0.14
Child food refusal	33.65 (9.95)	32.63(10.09)	29.65 (10.34)	1.38	.171	0.13	4.47	<.001	0.29
Child manipulation of food	13.05 (4.20)	12.66 (4.86)	11.31 (3.97)	1.26	.209	0.12	3.76	<.001	0.30
Child food aggression	21.04 (5.95)	20.96 (6.94)	17.84 (7.14)	0.26	.795	0.03	5.63	<.001	0.30
General parenting and child behaviors									
Parent negative practices	2.44 (0.48)	2.41 (0.48)	2.10 (0.51)	0.77	.445	0.07	6.72	<.001	0.63
Parent positive practices	3.35 (0.38)	3.39 (0.37)	3.55 (0.38)	−1.19	.238	0.11	−5.10	<.001	0.43
Child externalizing behavior[a]	33.75 (9.84)	33.93(10.84)	28.72 (11.69)	−0.27	.791	0.03	6.89	<.001	0.46

[a] Raw scores. Significant alpha level was adjusted by the number of *t*-tests to $p < .004$.

Table 3
Means (*M*), Standard Deviations (*SD*), and Comparisons Between Measures at Pre-Waitlist, and Pre- and Post-PCIT for All Participants ($N = 178$)

Measure	Pre-Waitlist *M* (*SD*)	Pre-PCIT *M* (*SD*)	Post- PCIT[b] *M* (*SD*)	Pre-Waitlist/Pre-PCIT			Pre-PCIT/Post-PCIT[b]		
				Paired *t*-test	*p*-value	Cohen's *d*	Paired *t*-test	*p*-value	Cohen's *d*
Eating-related parenting and child behaviors									
Parent demandingness	2.62 (0.78)	2.58 (0.69)	2.35 (0.75)	0.45	.651	0.03	3.98	<.001	0.32
Parent responsiveness	1.14 (0.20)	1.13 (0.17)	1.19 (0.22)	1.09	.279	0.08	−3.55	.001	0.33
Parent positive MT environment	15.51 (4.04)	16.06 (3.87)	16.71 (4.04)	−2.37	.019	0.18	−1.93	.056	0.17
Parent aversion to MT	13.08 (4.85)	13.39 (5.15)	12.18 (5.08)	−1.22	.225	0.09	2.92	.004	0.24
Child resistance to eating	30.25 (8.77)	30.50 (8.62)	29.36 (9.10)	−0.64	.522	0.05	1.66	.103	0.13
Child food refusal	33.91 (10.14)	32.90 (10.24)	29.85 (10.41)	1.54	.125	0.12	4.32	<.001	0.29
Child manipulation of food	13.38 (4.43)	12.85 (5.06)	11.40 (4.20)	1.65	.101	0.12	3.93	<.001	0.31
Child food aggression	21.11 (6.34)	20.67 (7.09)	17.87 (7.34)	0.87	.385	0.07	4.23	<.001	0.39
General parenting and child behaviors									
Parent negative practices	2.41 (0.50)	2.38 (0.50)	2.09 (0.55)	1.24	.215	0.09	5.79	<.001	0.54
Parent positive practices	3.40 (0.42)	3.41 (0.36)	3.55 (0.40)	−0.45	.656	0.03	−4.07	<.001	0.36
Child externalizing behavior[a]	35.31 (10.42)	34.54 (10.85)	29.26 (12.00)	1.49	.138	0.11	6.39	<.001	0.46

MT = mealtime.
[a] Raw scores.
[b] Imputed data. Significant alpha level was adjusted by the number of *t*-tests to $p < .004$.

whether analyses were conducted with those who completed both surveys (n = 110, Table 2) or when data were imputed to maintain all 178 participants in the analyses (Table 3). Participating parents reported less feeding demandingness and more feeding responsiveness, and less aversion to mealtimes. For child-oriented food-related measures, parents rated children as lower in food refusal, food manipulation, and food-related aggression. Positive mealtime environment and children's resistance to eating were the two measures that did not improve at post-PCIT relative to pre-PCIT. Effect sizes (Cohen's d) ranged from 0.14–0.35.

Also supporting the hypotheses, the two general parenting measures and child externalizing behavior in general significantly improved from pre-PCIT to post-PCIT (all $p < .001$), whether analyses were conducted with families who completed both surveys (n = 110, Table 2) or for all 178 participants (Table 3). There was a decline in parents' negative, and an increase in parents' positive, parenting practices and a significant reduction in child externalizing symptoms. Effect sizes (Cohen's d) ranged from 0.43–0.63.

Discussion

Although there are many reasons to suspect that PCIT should improve parents' food-related and mealtime management behaviors and their interactions with their children related to food and eating, no previous study had examined whether the known positive impacts of PCIT, without modifications or enhancements, on child behavior and parenting practices generalize to the context of feeding and mealtimes. To test this, we applied a multiple baseline design to investigate pre-wait to pre-PCIT change, and pre- to post-PCIT change, in children's resistance to eating, food refusal, food manipulation, and food-related aggressive behavior, and parents' responsiveness and reducing demandingness related to food and meals, and parents' perceptions of the mealtime environment and aversion to mealtimes. We also investigated if PCIT was associated with improvements in general positive and negative parenting practices and child externalizing symptoms.

Given the many positive effects of PCIT on almost all measures (and the mostly nonsignificant change in eating and general outcomes prior to starting to PCIT), the results of this study suggest that PCIT has a positive impact on many parenting practices and child behavior related to food and mealtimes. Therefore, PCIT can be considered a treatment for improving some aspects of parents' food and mealtime management behaviors and reducing parents' concerns around parental feeding practices and children's PMBs. Considering the lack of home and community-based intervention for concerns like avoidant or picky eating and tantrums related to food and eating (Dahlsgaard & Bodie, 2019), these findings have potential for significant impact, as PCIT may fill a gap in treatment by helping parents to be less demanding and more responsive to their children's needs regarding food and mealtimes, helping to alleviate some elevated child food fussiness and disruptive behaviors during mealtimes.

Generalizability of PCIT Skills to Parents' Management of Food and Mealtimes

The eating context can be fraught with tension, as difficult and noncompliant behaviors that occur in this context can be perceived as more consequential than in other contexts where noncompliance can also occur (e.g., within play or when getting ready to go somewhere)—one of a parent's primary duties is to ensure their child is fed. Picky eating, delays in conforming to food and mealtime expectations, and disruptions to mealtimes, although common in early childhood (Wolstenholme et al., 2020), can generate negative emotions in the parent that make demandingness regarding food consumption and good mealtime behavior more common. Such parental responses to children's eating can, in turn, exacerbate children's emotional and behavioral dysregulation related to food and mealtimes (Wolstenholme et al., 2020). This process can become a cycle, where feeding contexts become negative, unpleasant, and stressful for both parents and children, contributing to escalating problematic parent-child interactions (Cardona Cano et al., 2015). The findings of the current study concur with previous work that has posited that parenting style impacts child eating via parental feeding practices (Balantekin et al., 2020); hence, an intervention that changes parenting style has the capacity to also change how parents interact with their children in an eating context.

Although not developed to specifically address feeding challenges, PCIT's focus on developing a positive, warm, and supportive parent-child relationship (promoting security and trust in others) has been proposed to be foundational to reducing other childhood problems beyond conduct problems (Niec et al., 2022). The relationship-building skills in the first phase of PCIT might possibly shift negative parent-child dynamics during mealtimes, which is reflected in the post-PCIT improvements to eating related measures, particu-

larly parent feeding demandingness and responsiveness.

MODIFICATIONS AND ENHANCEMENTS TO PCIT

It is notable that the effect sizes for general parenting practices and child externalizing behavior were generally larger when compared to the food- and mealtime-related measures. Furthermore, the current findings suggest that standard PCIT can be beneficial to some problematic mealtime behaviors, but not all. No significant improvement in parents' reports of a positive mealtime environment, nor children's resistance to eating, was found from pre- to post-PCIT. Both of these measures constitute very general parental beliefs about eating and the eating context, which may not so easily shift across a behavioral intervention in a relatively short time span (14 weeks). Further, no direct intervention or education was provided to parents on how to set up or approach mealtimes within standard PCIT, although it is not beyond the protocol to make this modification to meet a client's specific need. In fact, doing so would be working within an evidence-based practice framework, where therapist expertise and client needs and preferences are considered when delivering an evidence-based intervention like PCIT (Campbell et al., 2023).

LIMITATIONS AND FUTURE DIRECTIONS

The current study was conducted with families seeking support for general parental distress about their parenting and child behavioral problems. There was no particular requirement that parents had difficulties managing food or mealtimes or that children's problem behaviors occurred in eating contexts. A future research study could focus specifically on parents with their own eating concerns or on children with specific behavior concerns in eating or mealtime contexts. Further, future research should consider the origins of mealtime behavior concerns by examining samples that include both typically developing and neuroatypical children, as clinical decision making might differ based on a "behavioral" presentation versus a presentation of feeding anxiety or sensory sensitivity that can be seen in autistic children or children with feeding-related medical issues. It may be that the current sample had mealtime behaviors that stem from general disruptive behavior across all contexts, and hence their symptoms were more responsive to a behavioral approach like PCIT.

A second limitation was that children do present with a range of eating concerns that disrupt family life (Dahlsgaard & Bodie, 2019; Wolstenholme et al., 2020). For example, some children are fussy about food, whereas other children are emotionally dysregulated while eating, and still other children may exhibit all of the challenging behaviors. The effects of PCIT and the modifications needed in future research to improve the effect sizes for these different groups of children is an important direction for future research, which will depend on larger and more direct recruitment strategies.

A third limitation is that we did not address other outcomes that could yield improvements in mealtime behavior and the family emotional climate, including parental factors (self-efficacy beliefs about feeding and hunger regulation, awareness about developmental approaches to feeding children, and effective feeding practices) and wider family factors like family conflict about eating and parental concerns about feeding (Wolstenholme et al., 2020). Furthermore, collecting more data about the context of mealtimes (i.e., what foods, with whom, where, and when children eat), including observing eating interactions, and symptoms of avoidant and restrictive food intake disorder should be considered, to better identify which parents and children will experience food-related improvements following participation in PCIT. Last, it is a limitation that the current study did not have a control group. However, the use of a multiple baseline design allowed us to better pinpoint change tied to participation in PCIT.

CONCLUSION

Children's problematic mealtime behaviors (PMBs) can be distressing for families, and there is often a lack of support services to give parents strategies to respond to these specific behavioral concerns. The current study provides evidence that PCIT can be an effective intervention in reducing most PMBs and can improve multiple parental feeding practices, alongside the known benefits of PCIT for improving general parenting practices, and for reducing parental stress and children's aggression and other disruptive behaviors. However, some areas associated with food-related parenting and children's eating did not improve as much as anticipated, suggesting that modifications to the PCIT protocol may be needed to more directly address parents' ability to provide a positive mealtime environment and to reduce children's fussiness or resistance to eating certain foods. Thus, replication and extension of these findings to populations that have more specific mealtime or feeding-related behavioral concerns

is warranted, focusing on PCIT as designed but also focusing on enhancements to PCIT to directly address how to change the mealtime environment and addressing children who are resistant to eating. Overall, however, the findings of the present study identify PCIT as a parenting support program that can result in more positive mealtime parenting practices and reduce children's disruptive and aggressive behaviors during mealtimes.

References

Abrahamse, M. E., Junger, M., van Wouwe, M. A. M. M., Boer, F., & Lindauer, R. J. L. (2016). Treating child disruptive behavior in high-risk families: a comparative effectiveness trial from a community-based implementation. *Journal of Child and Family Studies, 25*(5), 1605–1622. https://doi.org/10.1007/s10826-015-0322-4.

Balantekin, K. N., Anzman-Frasca, S., Francis, L. A., Ventura, A. K., Fisher, J. O., & Johnson, S. L. (2020). Positive parenting approaches and their association with child eating and weight: a narrative review from infancy to adolescence. *Pediatric Obesity, 15*(10), e12722. https://doi.org/10.1111/ijpo.12722.

Berlin, K. S., Davies, W. H., Silverman, A. H., Woods, D. W., Fischer, E. A., & Rudolph, C. D. (2010). Assessing children's mealtime problems with the mealtime behavior questionnaire. *Children's Health Care, 39*(2), 142–156. https://doi.org/10.1080/02739611003679956.

Blissett, J. (2011). Relationships between parenting style, feeding style and feeding practices and fruit and vegetable consumption in early childhood. *Appetite, 57*(3), 826–831. https://doi.org/10.1016/j.appet.2011.05.318.

Campbell, S. M., Hawes, T., Swan, K., Thomas, R., & Zimmer-Gembeck, M. J. (2023). Evidence-based treatment in practice: PCIT research on addressing individual differences and diversity through the lens of 20 years of service. *Psychology Research and Behavior Management, 16*, 2599–2617. https://doi.org/10.2147/PRBM.S360302.

Cardona Cano, S., Hoek, H. W., Van Hoeken, D., de Barse, L. M., Jaddoe, V. W., Verhulst, F. C., & Tiemeier, H. (2016). Behavioral outcomes of picky eating in childhood: a prospective study in the general population. *Journal of Child Psychology and Psychiatry, 57*(11), 1239–1246. https://doi.org/10.1111/jcpp.12530.

Carruth, B. R., Ziegler, P. J., Gordon, A., & Barr, S. I. (2004). Prevalence of picky eaters among infants and toddlers and their caregivers' decisions about offering a new food. *Journal of the American Dietetic Association, 104*(1), 57–64. https://doi.org/10.1016/j.jada.2003.10.024.

Cooley, M. E., Veldorale-Griffin, A., Petren, R. E., & Mullis, A. K. (2014). Parent–child interaction therapy: a meta-analysis of child behavior outcomes and parent stress. *Journal of Family Social Work, 17*(3), 191–208. https://doi.org/10.1542/peds.2017-0352.

Comer, J. S., Chow, C., Chan, P. T., Cooper-Vince, C., & Wilson, L. A. S. (2013). Psychosocial treatment efficacy for disruptive behavior problems in very young children: A meta-analytic examination. *Journal of the American Academy of Child and Adolescent Psychiatry, 52*(1), 26–36. https://doi.org/10.1016/j.jaac.2012.10.001.

Dahlsgaard, K. K., & Bodie, J. (2019). The (extremely) picky eaters clinic: a pilot trial of a seven-session group behavioral intervention for parents of children with avoidant/restrictive food intake disorder. *Cognitive and Behavioral Practice, 26*(3), 492–505. https://doi.org/10.1016/j.cbpra.2018.11.001.

Davies, W. H., Ackerman, L. K., Davies, C. M., Vannatta, K., & Noll, R. B. (2007). About your child's eating: factor structure and psychometric properties of a feeding relationship measure. *Eating Behaviors: An International Journal, 8*(4), 457–463. https://doi.org/10.1016/j.eatbeh.2007.01.001.

Domoff, S. E., & Niec, L. N. (2018). Parent-child interaction therapy as a prevention model for childhood obesity: a novel application for high-risk families. *Children and Youth Services Review, 91*, 77–84. https://doi.org/10.1016/j.childyouth.2018.05.024.

Douglas, J., & Harris, B. (2001). Description and evaluation of a day-centre-based behavioral feeding programme for young children and their parents. *Clinical Child Psychology and Psychiatry, 6*(2), 241–256. https://doi.org/10.1177/1359104501006002006.

Dubois, L., Farmer, A. P., Girard, M., & Peterson, K. (2007). Preschool children's eating behaviours are related to dietary adequacy and body weight. *European Journal of Clinical Nutrition, 61*(7), 846–855. https://doi.org/10.1038/sj.ejcn.1602586.

Ek, A., Chamberlain, K., Sorjonen, K., Hammar, U., Malek, M., Sandvik, P., Somaraki, M., Nyman, J., Lindberg, L., Nordin, K., Ejderhamn, J., Fisher, P., Chamberlain, P., Marcus, C., & Nowicka, P. (2019). A parent treatment program for preschoolers with obesity: a randomized controlled trial. *Pediatrics (Evanston), 144*(2). https://doi.org/10.1542/peds.2018-3457.

Ek, A., Sorjonen, K., Eli, K., Lindberg, L., Nyman, J., Marcus, C., & Nowicka, P. (2016). Associations between parental concerns about preschoolers' weight and eating and parental feeding practices: Results from analyses of the child eating behavior questionnaire, the child feeding questionnaire, and the lifestyle behavior checklist. *PloS One, 11*(1), e0147257. https://doi.org/10.1371/journal.pone.0147257.

Faith, M. S., Berkowitz, R. I., Stallings, V. A., Kerns, J., Storey, M., & Stunkard, A. J. (2004). Parental feeding attitudes and styles and child body mass index: Prospective analysis of a gene-environment interaction. *Pediatrics (Evanston), 114*(4), e429–e436. https://doi.org/10.1542/peds.2003-1075-L.

Fisher, J. O., Mitchell, D. C., Smiciklas-Wright, H., & Birch, L. L. (2002). Parental influences on young girls' fruit and vegetable, micronutrient, and fat intakes. *Journal of the American Dietetic Association, 102*(1), 58–64. https://doi.org/10.1016/S0002-8223(02)90017-9.

Fraser, K., Wallis, M., & John, W. S. (2004). Improving children's problem eating and mealtime behaviors: An evaluative study of a single session parent education programme. *Health Education Journal, 63*(3), 229–241. https://doi.org/10.1177/001789690406300304.

Goh, D. Y. T., & Jacob, A. (2012). Perception of picky eating among children in Singapore and its impact on caregivers: a questionnaire survey. *Asia Pacific Family Medicine, 11*(1), 5. https://doi.org/10.1186/1447-056X-11-5.

Haywood, P., & McCann, J. (2009). A brief group intervention for young children with feeding problems. *Clinical Child Psychology and Psychiatry, 14*(3), 361–372. https://doi.org/10.1177/1359104509104046.

Hughes, S. O., Power, T. G., Orlet Fisher, J., Mueller, S., & Nicklas, T. A. (2005). Revisiting a neglected construct: Parenting styles in a child-feeding context. *Appetite, 44*(1), 83–92. https://doi.org/10.1016/j.appet.2004.08.007.

Jacobi, C., Agras, W. S., Bryson, S., & Hammer, L. D. (2003). Behavioral validation, precursors, and concomitants of

picky eating in childhood. *Journal of the American Academy of Child and Adolescent Psychiatry, 42*(1), 76–84. https://doi.org/10.1097/00004583-200301000-00013.

Jansen, P. W., de Barse, L. M., Jaddoe, V. W. V., Verhulst, F. C., Franco, O. H., & Tiemeier, H. (2017). Bi-directional associations between child fussy eating and parents' pressure to eat: Who influences whom?. *Physiology & Behavior 176*, 101–106. https://doi.org/10.1016/j.physbeh.2017.02.015.

Joyce, J. L., & Zimmer-Gembeck, M. J. (2009). Parent feeding restriction and child weight. The mediating role of child disinhibited eating and the moderating role of the parenting context. *Appetite, 52*(3), 726–734. https://doi.org/10.1016/j.appet.2009.03.015.

Lafraire, J., Rioux, C., Giboreau, A., & Picard, D. (2016). Food rejections in children: cognitive and social/environmental factors involved in food neophobia and picky/fussy eating behavior. *Appetite, 96*, 347–357. https://doi.org/10.1016/j.appet.2015.09.008.

Lewinsohn, P. M., Holm-Denoma, J. M., Gau, J. M., Joiner, T. E., Jr, Striegel-Moore, R., Bear, P., & Lamoureux, B. (2005). Problematic eating and feeding behaviors of 36-month-old children. *The International Journal of Eating Disorders, 38*(3), 208–219. https://doi.org/10.1002/eat.20175.

Lyons, E. R., Nekkanti, A. K., Funderburk, B. W., & Skowron, E. A. (2022). Parent-child interaction therapy supports healthy eating behavior in child welfare-involved children. *International Journal of Environmental Research and Public Health, 19*(17), 10535. https://doi.org/10.3390/ijerph191710535.

Mascola, A. J., Bryson, S. W., & Agras, W. S. (2010). Picky eating during childhood: a longitudinal study to age 11 years. *Eating Behaviors: An International Journal, 11*(4), 253–257. https://doi.org/10.1016/j.eatbeh.2010.05.006.

McCabe, K., Yeh, M., Lau, A., & Argote, C. B. (2012). Parent-child interaction therapy for Mexican Americans: results of a pilot randomized clinical trial at follow-up. *Behavior Therapy, 43*(3), 606–618. https://doi.org/10.1016/j.beth.2011.11.001.

McNeil, C. B., & Hembree-Kigin, T. L. (2010). *Parent-child interaction therapy* (2nd ed.). Springer.

Micali, N., Simonoff, E., Elberling, H., Rask, C. U., Olsen, E. M., & Skovgaard, A. M. (2011). Eating patterns in a population-based sample of children aged 5 to 7 years: association with psychopathology and parentally perceived impairment. *Journal of Developmental and Behavioral Pediatrics, 32*(8), 572–580. https://doi.org/10.1097/DBP.0b013e31822bc7b7.

Niec, L. N., Todd, M., Brodd, I., & Domoff, S. E. (2022). PCIT-health: preventing childhood obesity by strengthening the Parent-Child relationship. *Cognitive and Behavioral Practice*. https://doi.org/10.1016/j.cbpra.2020.07.001.

Ramos-Paúl, R., Marriage, J. B., Ruiz Debeza, R., Oliveros Leal, L., Ros Mar, L., Torres Cardona, L., & Williams, A. J. (2014). Impact of picky eating on level of family stress in healthy children between the ages of 3 and 6 years. *The Open Nutrition Journal, 8*(1), 13–18. https://doi.org/10.2174/1874288201408010013.

Reynolds, C. R., & Kamphaus, R. W. (2004). *Behavior assessment system for children* (2nd ed.). American Guidance Service.

Rybak, T. M. J. (2019). *Examining how parent child interaction therapy (PCIT) skills influence children's eating during a structured eating task* Doctoral dissertation. The University of Memphis.

Sanders, M. R., & Woolley, M. L. (2005). The relationship between maternal self-efficacy and parenting practices: implications for parent training. *Child: Care, Health and Development, 31*(1), 65–73. https://doi.org/10.1111/j.1365-2214.2005.00487.x.

Thomas, R., Abell, B., Webb, H. J., Avdagic, E., & Zimmer-Gembeck, M. J. (2017). Parent-child interaction therapy: a meta-analysis. *Pediatrics, 140*(3). https://doi.org/10.1542/peds.2017-0352.

Thomas, R., & Zimmer-Gembeck, M. J. (2011). Accumulating evidence for Parent-Child Interaction Therapy in the prevention of child maltreatment. *Child Development, 82*(1), 177–192. https://doi.org/10.1111/j.1467-8624.2010.01548.x.

Thomas, R., & Zimmer-Gembeck, M. J. (2012). Parent-Child interaction therapy: an evidence-based treatment for child maltreatment. *Child Maltreatment, 17*(3), 253–266. https://doi.org/10.1177/1077559512459555.

van der Horst, K., & Sleddens, E. F. C. (2017). Parenting styles, feeding styles and food-related parenting practices in relation to toddlers' eating styles: a cluster-analytic approach. *PloS One, 12*(5), e0178149. https://doi.org/10.1371/journal.pone.0178149.

Vereecken, C., Legiest, E., De Bourdeaudhuij, I., & Maes, L. (2009). Nutrition: associations between general parenting styles and specific food-related parenting practices and children's food consumption. *American Journal of Health Promotion, 23*(4), 233–240. https://doi.org/10.4278/ajhp.07061355.

Wiltsey Stirman, S., Baumann, A. A., & Miller, C. J. (2019). The FRAME: an expanded framework for reporting adaptations and modifications to evidence-based interventions. *Implementation Science, 14*, 58. https://doi.org/10.1186/s13012-019-0898-y.

Wolstenholme, H., Kelly, C., Hennessy, M., & Heary, C. (2020). Childhood fussy/picky eating behaviors: a systematic review and synthesis of qualitative studies. *The International Journal of Behavioral Nutrition and Physical Activity, 17*(1), 2. https://doi.org/10.1186/s12966-019-0899-x.

Zimmer-Gembeck, M. J., Kerin, J. L., Webb, H. J., Gardner, A. A., Campbell, S. M., Swan, K., & Timmer, S. G. (2019). Improved perceptions of emotion regulation and reflective functioning in parents: two additional positive outcomes of parent-child interaction therapy. *Behavior Rherapy, 50*(2), 340–352. https://doi.org/10.1016/j.beth.2018.07.002.

Zohar, A. H., Pick, S., Lev-Ari, L., & Bachner-Melman, R. (2020). A longitudinal study of maternal feeding and children's picky eating. *Appetite, 154*, 104804. https://doi.org/10.1016/j.appet.2020.104804.

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