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PCIT-Health: Preventing Childhood Obesity by Strengthening the Parent–Child Relationship

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Childhood obesity is a costly, yet preventable, public health concern. Strengthening the parent–child relationship and teaching parents strategies to manage children’s general and health-related behaviors has the potential to reduce childhood obesity risk. Selective prevention interventions may help parents of young children establish positive parenting and feeding practices to actively reduce risk factors. We review the existing literature on childhood obesity interventions and describe an adaptation to a behavioral parent training program—parent–child interaction therapy (PCIT)—to address children’s behaviors in obesity-salient (e.g., mealtime, screen time, bedtime) contexts. In a case example, we describe how PCIT-Health can be effectively implemented.

CHILDHOOD obesity has become a serious health concern in the United States and in many countries globally (Skinner et al., 2018; Wang & Beydoun, 2007; Wang & Lim, 2012). In the United States, an estimated 13.9% of preschool children and 18.4% of school-age children are obese (Hales et al., 2017). Child and adult obesity accounts for 2–8% of global health care costs (Wang et al., 2008) and is the second leading preventable cause of disease and death (U.S. Department of Health and Human Services & Public Health Services, 2001). Some of the physical health problems that can co-occur with childhood obesity include respiratory infections, asthma, sleep apnea, pain, headaches, and ear-infections (Halfon et al., 2013; Mallory et al., 1989; Skinner et al., 2010). Challenges such as increased externalizing and internalizing behavioral symptoms and increased bullying victimization are also associated with childhood obesity (Halfon et al., 2013; van Geel et al., 2014). Particularly concerning is the disproportionate prevalence of obesity within historically marginalized populations, contributing to significant health disparities (Franzini et al., 2009; Wang & Beydoun, 2007)—for example, children from impoverished backgrounds are four times more likely to develop body mass index (BMI) growth patterns associated with obesity in adolescence and adulthood (Shih et al., 2013), while children of Latinx and African American heritage consistently have greater prevalence

rates of childhood obesity than non-Hispanic White children (Wang & Beydoun, 2007).

Although a number of treatment programs have been developed in an attempt to reduce this public health concern, clinically significant changes in children’s BMI percentiles or *z* scores are difficult to achieve. Many interventions have not been effective in producing meaningful, long-term benefits. Below we review several existing interventions for children that have shown some promise and describe a recent adaptation of an evidence-based parenting intervention (parent–child interaction therapy [PCIT]) to prevent childhood obesity. We illustrate the implementation of the new intervention by reporting a family case.

Existing Interventions

Interventions to decrease children’s obesity have been created for a range of ages from early childhood to adolescence. Interventions vary in their methods, intended audiences, and modalities. Many treatment approaches have focused on improving school-age children’s nutrition intake, discouraging unhealthy and energy-dense food consumption, increasing physical activity, and decreasing sedentary activity (Wilfley, Saelens, et al., 2017; Wilfley, Staiano, et al., 2017). Many are educational and provide information on nutrition and healthy eating practices to children, parents, or schools. Some of these interventions have demonstrated improvements in preschool children’s specific eating patterns (e.g., decreased sweets consumption, increased fruit and vegetable consumption; Haire-Joshu et al., 2008; McGarvey et al., 2004; Wardle et al., 2003), but others have resulted in inconsistent (Fitzgibbon et al., 2005, 2006) or no (Williams et al., 2004) significant improvements in

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salient health outcomes. Across obesity interventions for children from preschool to adolescence, approximately 50% show any significant changes in health outcomes (for children ages 2–12 years: Altman & Wilfley, 2015; in children ages 4–13 years: Gerards et al., 2011) and only 5% show significant effects at follow-up assessments (across studies with children and adolescents; Stice et al., 2006).

It is clear we have not yet addressed the critical mechanisms of change to produce significant or lasting effects in the reduction of childhood obesity. A number of strategies that have shown some promise have not previously been integrated into one intervention. Specifically, a prevention approach that addresses the parent–child system in relation to both general parenting and health-salient contexts may be more effective in reducing obesity risk.

Prevention interventions that address problematic feeding behaviors have been effective in decreasing BMI *z* scores in preschoolers at program completion and up to 3 years after the program (Brotman et al., 2012; and in elementary school-age children: Danielsson et al., 2012). These interventions have the potential to be more effective than treatment because younger children's feeding patterns and food preferences may be more malleable and responsive to a parent's feeding practices (Altman & Wilfley, 2015; Baidal & Taveras, 2012; Shloim et al., 2015). The inclusion of parents in child and adolescent obesity prevention intervention is also essential. Interventions including parents are effective in improving a number of child health outcomes and are more successful than those without parent involvement (Niemeier et al., 2012; Young et al., 2007). Addressing both general and feeding-specific parenting practices has been associated with increased positive relationships between children and parents, decreased BMI-related outcome (e.g., *z* score), less attrition, and long-term intervention effectiveness (in children ages 4–13 years: Gerards et al., 2011; in children ages 7–13 years: Robertson et al., 2008; in infants through preschool-age children: Yavuz et al., 2015), even after controlling for parents' nutritional knowledge (Kitzmann et al., 2010). Further, interventions in which parents and preschool- or school-age children interact together, as opposed to working with parents alone or with separate parent and child groups, have been more effective (in school-age children: Magarey et al., 2011; in preschool-age children: Peters, Sinn, Campbell, & Lynch, 2012; in infants through preschool-age children: Yavuz et al., 2015).

The approach to behavior change and skill acquisition is also important in fostering intervention efficacy. Within the general parenting intervention literature, models that include live coaching of parent–child interactions by a therapist demonstrate larger effects than models that do

not include coaching (Kaminski et al., 2008). Therapist coaching predicts the speed of parents' acquisition of positive behavior management skills (Barnett et al., 2014) and has been related to program retention (Barnett et al., 2015). Within the context of families' mealtime interactions, live coaching was related to an increase in parents' use of positive and health-promoting behaviors, a decrease in children's problem behaviors during meals, and a reduction in child BMI *z* score (Shinn et al., 2017). The focus on live coaching is not only associated with gains in effective parenting skills (Barnett et al., 2014, 2015) but also with maintenance of treatment gains up to 6 years after treatment completion (Hood & Eyberg, 2003).

Finally, excessive use of screens (e.g., tablet, smartphone, digital games) has been related to obesity risk (Fang et al., 2019). The three primary ways in which screen media use has been linked to obesity risk are via (a) exposure to commercials that advertise nutrient-deficient foods (e.g., fast-food restaurants, children's cereals or other snacks), (b) disruption of sleep due to screens being in the child's bedroom, and (c) displacement of physical activity (see Domoff et al., 2020, for an overview of these mechanisms). Interventions that address children's media use result in greater physical activity levels and lower body fat and BMI percentile up to 2 years after intervention completion (Epstein et al., 2000; Robinson, 1999, 2000).

We integrated the key components above to reduce childhood obesity risk with an adapted prevention model of the evidence-based transdiagnostic intervention PCIT.

PCIT as Obesity Prevention: Coaching Parents to Be Active in Their Children's Health

Strengthening the parent–child relationship and increasing effective parenting around children's mealtime and screen time may reduce childhood obesity risk. These goals can be met by teaching parents skills through behavioral parent training (BPT; Kaminski et al., 2008). PCIT is a best-practice BPT model for 2- to 7-year-old children exhibiting conduct problems (California Evidence-Based Clearinghouse for Child Welfare, 2017; Niec, 2018a). All caregivers in the child's life are directly involved in treatment, as this is associated with greater and longer-lasting improvements in behaviors (Bagner, 2013; Bagner & Eyberg, 2003). The first phase of the model, child-directed interaction (CDI), focuses on strengthening or repairing the parent–child relationship by increasing parent responsiveness. During the second phase of the intervention, parent-directed interaction (PDI), parents learn to give effective directions and provide their children with consistent, age-appropriate discipline to reduce coercive patterns of interaction. Unique to PCIT, therapists provide active, immediate

feedback (coaching) while parents interact with their children. Coaching is a powerful way to teach parents new skills (Shanley & Niec, 2010) and to change parents' interaction patterns with their children. PCIT is an assessment driven and goal-focused manualized treatment. While maintaining core components of PCIT (e.g., in vivo coaching, standardized behavioral observations), therapists flexibly tailor coaching to match the dyad's needs (Eyberg, 2005). Therapists then coach parents to generalize their new skills from the clinic setting to real-life situations.

Although PCIT was originally developed to treat childhood conduct problems, the focus on building a healthy parent-child relationship makes it foundational in the reduction of many childhood problems (Niec, 2018b). PCIT includes core components that may be particularly effective for reducing childhood obesity risks—for example, by focusing on the quality of the parent-child relationship, a context is built in which parents may be more effective at setting healthy limits around various risk behaviors (Domoff & Niec, 2018). When parenting skills are effective, then parents may also be more able to implement healthy feeding practices and structure other health-related activities. In addition to improving the parenting context, PCIT increases children's behavioral and emotional regulation (Lieneman, Girard, Quetsch, et al., 2019), which are inversely associated with negative health-related outcomes, such as high BMI percentile (Anderson et al., 2012). Further, the live coaching used in PCIT allows specific obesogenic risk behaviors and buffering factors to be targeted for change—for example, active mediation, in which parents comment on media content and engage with their children in healthy media use, is a parenting strategy that helps to mitigate potential negative health effects of media consumption (Buijzen, 2009; Gentile et al., 2014; Radesky et al., 2016; Tiberio et al., 2014). Through coaching, parents learn to use active mediation effectively with their children.

As a treatment intervention, PCIT demonstrates large effect sizes (e.g., Niec et al., 2016; Schuhmann et al., 1998). In fact, PCIT has demonstrated stronger effects than a range of other interventions, including parenting-focused interventions (Thomas & Zimmer-Gembeck, 2007) and child-focused interventions (Lieneman, Quetsch, et al., 2019). Even families that discontinue treatment prior to graduation, but receive at least four sessions of PCIT, have demonstrated positive effects (Lieneman, Quetsch, et al., 2019). Further, as a treatment intervention for children with disruptive behavior disorders and children within the welfare system, PCIT has been found to be cost-effective (Aos et al., 2004; Goldfine et al., 2008). Although the cost-effectiveness of prevention formats of PCIT has not yet been evaluated, given the high cost of treating the negative health outcomes associated with childhood obesity, a prevention format

such as PCIT-health (PCIT-H) has the potential to also be cost-effective.

Finally, PCIT has already been adapted into a prevention model and results in significant increases in parents' use of effective parenting skills, decreases in parents' ratings of their children's problem behaviors, and increases in parenting self-efficacy (Bagner et al., 2016; Berkovits et al., 2010; Niec et al., 2014). Prevention interventions are more effective in reducing children's risk for negative health outcomes by targeting obesogenic factors at a younger age through changing parents' feeding styles and practices (Altman & Wilfley, 2015; Baidal & Taveras, 2012). Thus, PCIT is worth exploring as a potentially effective and cost-effective intervention for children at increased risk for obesity.

PCIT-Health: Reducing Children's Obesity Risk

PCIT-H is a prevention intervention for reducing childhood obesity risk for children 2–7 years old. There are a number of risk factors that can indicate appropriateness for PCIT-H, including BMI percentile, problematic feeding practices, and problems around media use. Regarding BMI percentile, obesity risk is defined as a child's BMI percentile falling at or above the 85th percentile, based on age- and sex-specific norms (i.e., falling within the overweight range). An adaptation of a prevention format (PCIT-selective prevention: family camp; Brodd et al., 2018), PCIT-H retains the core components of standard PCIT and includes three intervention phases: CDI, PDI, and health-directed interaction (HDI). The target population for PCIT-H includes children who are at risk for childhood obesity (Domoff & Niec, 2018). However, concurrent child conduct problems are not a contraindication for PCIT-H. In fact, externalizing behaviors have been associated with obesity risk (Suglia et al., 2013). Further, session-limited versions of PCIT have been found to be effective in treating children's clinical levels of conduct problems (e.g., Niec et al., 2016; Nixon et al., 2004).

As a prevention model, PCIT-H is a session-limited program. Consistent with standard PCIT, parents first learn the skills through didactic instruction (teach sessions) and then practice them with their children while receiving live coaching from a therapist. The program includes two intake assessment sessions, four classes per each intervention phase—one teach session and three coaching sessions—and a graduation/post-assessment session for a total of 15 weekly meetings (see Table 1).

Coaching in PCIT-H is focused on strengthening the parent-child relationship and teaching parents to set age-appropriate limits with their children in general and in obesity-salient (e.g., mealtime, screen time, bedtime) contexts. During CDI and PDI, therapists provide a variety of toy

Table 1
PCIT-Health: Overview of Intervention Structure and Content

Session Number	Session content
1–2	Orientation and Intake <ul style="list-style-type: none"> • Provide overview of the PCIT-Health program • Parent–child dyad(s) complete pre-treatment assessment
3	CDI Teach <ul style="list-style-type: none"> • Didactic session to teach parents child-centered skills • Coach parent–child dyad(s) in CDI skills practice and discuss at-home special time practice
4–6	CDI Coach <ul style="list-style-type: none"> • Code and coach parents in child-centered CDI skills
7	PDI Teach <ul style="list-style-type: none"> • Didactic session to teach parents consistent, effective, discipline skills
8	PDI Coach 1 <ul style="list-style-type: none"> • Introduce the new discipline procedure to the child • Coach parents in using effective commands and consistent consequences
9	PDI Coach 2 <ul style="list-style-type: none"> • Code and coach parents in PDI skills • Introduce house rules and identify behavior requiring house rule, if needed
10	PDI Coach 3 <ul style="list-style-type: none"> • Code and coach parents in PDI skills • Introduce practices for managing children’s public behavior
11	HDI Teach <ul style="list-style-type: none"> • Didactic session to teach parents healthy mealtime practices • Coach parent–child dyad(s) in avoiding PREP practices and applying PARED skills during snack time • Introduce handout for structuring mealtime
12	HDI Coach 1 <ul style="list-style-type: none"> • Coach parents to use PARED skills during snack time • Review parents’ responses on “Structuring the Mealtime Environment” handout • Introduce TIME strategies to manage children’s screen device use
13	HDI Coach 2 <ul style="list-style-type: none"> • Coach parents in TIME strategies, transitioning from screen device use, and using PARED skills during snack time • Review parents’ responses on “Structuring Screen Time” handout
14	HDI Coach 3: On-the-road <ul style="list-style-type: none"> • Coach parents in applying PARED skills during mealtime in public (e.g., at a restaurant) • Coach parents in TIME strategies for managing screen device use and CDI and PDI skills for children’s general behaviors as needed
15	Graduation <ul style="list-style-type: none"> • Complete post-intervention assessment and provide handouts describing strategies for managing children’s future behavior problems • Celebrate the family’s success and present certificates of completion

Note. PCIT = parent–child interaction therapy; CDI = child-directed interaction; PDI = parent-directed interaction; HDI = health-directed interaction; PREP = Pressuring children to eat, over-Restriction of foods, using Eating as a reward, and withholding food as Punishment; PARED = Praise healthy mealtime behavior, Allow children to make choices about food, Recognize when child is full, structure the mealtime Environment, and Describe mealtime activities. Psychosocial Strengths Inventory for Children and Adolescents (PSICA) is administered at intake, graduation, and the start of each session to monitor increases in children’s positive behaviors. Eyberg Child Behavior Inventory (ECBI) is administered at intake, graduation, and during teach sessions to monitor reductions in disruptive behaviors.

foods in addition to standard PCIT toys (e.g., construction toys, Mr. Potato Head). Food toys include fruits and vegetables, as well as burgers, French fries, and desserts. While the focus during CDI remains on helping parents to

acquire strong child-centered skills to build the parent–child relationship and to reinforce children’s prosocial behaviors, therapists also seek opportunities to coach parents to shape children’s health-related behaviors through imitating

appropriate play (e.g., “I’m going to make a pizza with vegetables, like yours”), describing food play (e.g., “You chose a healthy carrot!”), and praising positive behaviors (e.g., “Thank you for making a salad for me!”). Throughout CDI, therapists discuss real-life mealtime difficulties to help parents identify ways to generalize their CDI skills to shape their child’s mealtime behaviors (e.g., praising a child for using a fork to eat). In PDI, therapists coach parents to introduce the new discipline procedure to their children and practice commands in simple play situations (e.g., “Please hand me the tomato”). Therapists then coach parents in using real-life commands (e.g., “Please sit next to me”) that can be generalized to managing children’s behaviors in health-related contexts (e.g., bedtime, mealtime).

In the third phase, HDI, therapists coach parents to generalize child-centered and limit-setting skills in the context of health-related behaviors. Therapists coach parents during in-session mealtimes and around using screen devices with their children. The HDI module is focused on teaching parents skills to increase and support children’s healthy eating habits, reduce the use of obesity-related feeding practices, and set effective limits for children’s media use. It is important to stress that the intervention content does not include any reference to weight or body size of any client (i.e., weight loss or fat loss is not referenced); it also does not place value labels on foods (i.e., “bad” foods vs. “good” foods). This framework is in line with the Health at Every Size initiative (Bacon, 2010). Consistent with the overall model of PCIT, parents learn the skills through a didactic session, practice the skills with their children through coaching and at-home practice, and apply the skills in a real-life situation during an outing to a restaurant.

HDI Teach: Reducing Problematic and Increasing Positive Feeding Practices

Parents and children attend the HDI teach session together. First, therapists provide parents brief (20-minute) didactic instruction in the new skills. Parents learn the PREP-PARED practices (discussed in detail next) to avoid problematic feeding practices and increase positive parental feeding behaviors. To help ensure that each family’s meal culture and beliefs about feeding practices are understood and sensitively addressed, throughout the HDI teach session, therapists inquire about the family’s meal culture (e.g., who is involved in meal preparation and mealtime, what is important to the family when eating meals). Referencing intake questionnaires (e.g., Child Feeding Questionnaire [CFQ]; Birch et al., 2001), therapists review with parents their regular feeding practices and the family’s access to a variety of healthy foods. In collaboration with parents, therapists identify foods for in-session mealtimes so they are

consistent with the foods typically available to the family and will help expand the child’s selection of healthy foods. Cultural beliefs about food (e.g., not wasting uneaten food, children eating food that is presented) are discussed and therapists help parents identify how they can apply the skills in a manner that is consistent with their cultural beliefs (e.g., saving the child’s plate so food is not wasted). After didactic instruction, therapists coach parents in applying the skills during a snack time with their children. Therapists tailor coaching to help parents practice mealtime skills in a manner consistent with their cultural values.

PREP Practices to Avoid During Mealtime

The PREP practices were developed from the literature on problematic parental feeding behaviors. They include Pressuring children to eat, over-Restriction of foods, using Eating as a reward, and withholding food as Punishment. *PRESSURING to eat* means prompting children to eat more food, different kinds of foods, or at a different rate (e.g., “Clean your plate,” “Don’t take so long”). Pressuring instead of letting children stop eating when they feel ready can negatively impact their ability to recognize hunger and satiety cues (Fisher & Birch, 1999). *Over-RESTRICTION of foods* occurs when parents identify specific foods (e.g., desserts, potato chips, and other “junk food”) as forbidden and prevent their children from ever having access to those foods. When parents categorize foods as “good” and “bad,” and overrestrict “bad” foods (e.g., limit access to or the amount of the food children can have), children focus their attention on restricted foods and may eat more of them when they are available (Fisher & Birch, 1999). Using *EATING as a reward* (e.g., “If you eat the rest of your peas, you can have dessert.”, “I’ll give you cookies if you clean up your toys.”) may be an effective strategy for parents in the short term, but is associated with negative health outcomes, such as overeating, emotional eating, and higher BMI (Blissett et al., 2010; Roberts et al., 2018). Finally, *withholding food as PUNISHMENT* means taking food away (e.g., after-school snack) as a consequence for misbehavior at home or at school. Like the negative effects of using food as a reward, taking food away as punishment can also lead to negative eating practices and overeating when food is available (Stanek et al., 1990).

PARED Practices to Encourage Children’s Healthy Eating

The PARED practices help parents to interact with their children in ways that encourage healthy eating and create healthier mealtimes. To *PRAISE healthy mealtime behavior* means that parents give specific praises for children’s healthy and positive mealtime behaviors. Therapists help parents identify positive behaviors they can praise during mealtime (e.g., remaining seated while eating, trying new foods, making healthy food choices, and indicating when they are full). Praising children’s healthy eating behaviors is associated with children’s

increased eating and liking of initially disliked foods (Anez et al., 2013; Cooke et al., 2011). To *ALLOW children to make choices about food* means letting children select from food options that parents make available. When parents allow children autonomy to make food choices, children choose from the presented options and are likely to eat more healthy foods, such as vegetables (de Wild et al., 2015; Domínguez et al., 2013). *RECOGNIZING when their child is full* teaches parents to notice and respond to their children's satiety cues. Allowing children to stop eating when they are no longer hungry helps children respond to their satiety cues or fullness cues and avoid overeating. Therapists help parents to notice that children are full by observing their behavior (e.g., pushing their plate away, slowing their pace of eating), which allows children to develop greater self-regulation around food intake (Birch et al., 1991). *Structuring the mealtime ENVIRONMENT* involves (a) offering a variety of healthy food choices during snacks and meals, (b) creating mealtime routines, and (c) reducing distractions during mealtimes. When parents offer a range of foods at different meals, they help their children expand the types of healthier foods they eat by getting to choose from the available options. Creating routines means involving children in age-appropriate food selection and preparation tasks (e.g., helping to cook meals, setting the table), scheduling consistent mealtimes daily, and eating in the same place (e.g., dining table rather than on the couch). Finally, therapists discuss how parents can reduce distractions by turning off television during snack times and mealtimes and putting away other electronic devices (e.g., phones, tablets) to help children be more mindful about eating and be able to attend to satiety cues. To help children focus on their food, parents can *DESCRIBE mealtime activities*, which involves describing children's mealtime behavior (e.g., "You set down your fork") or the food options (e.g., "These tomatoes are juicy"). Just as behavior descriptions during PCIT special time help children to attend to their play, descriptions during mealtime can help children to attend to their eating behaviors. Parents' descriptions teach children about food qualities (e.g., texture, smell, taste), which can increase children's willingness to try new foods (Hoppu et al., 2015). Parents can also help their children to recognize fullness cues to avoid overeating by describing children's behaviors when they notice their children may be full (e.g., "You set your sandwich down").

Mealtime In Vivo Coaching

A core feature of PCIT-H is coaching around and during mealtimes. For the remainder of the HDI teach session (approximately 15 minutes) and during each of the subsequent HDI coaching sessions, therapists coach parents in the PREP-PARED skills with their children. Therapists use parents' reports of their children's food

preferences (obtained during intake) to offer a snack including three healthy food options (e.g., fresh fruits and vegetables) and one less-healthy option (e.g., graham crackers, baked Goldfish crackers). Therapists coach parents in applying the PARED skills while eating with their children. Coaching is focused on *structuring snack time environment* (e.g., "The options for snack are carrot sticks, apple slices, broccoli, and Goldfish crackers") and *allowing children to choose foods* from provided options. Therapists model *praising healthy mealtime behaviors* (e.g., "Great job choosing veggies that help you grow strong!") or *describing mealtime activities* (e.g., "These carrots are crunchy"), and help parents *recognize when their children are full* (e.g., "Say to him, 'I see you're slowing down eating. I wonder if you're feeling full'"). Parents are coached in generalizing their CDI skills to make mealtime a positive interaction and in using effective commands as needed for children's noneating behaviors (e.g., "Please put your paper plate in the trash").

HDI Coach 1

In the first HDI coaching session, therapists coach parents in using PARED skills and also teach them strategies for managing children's screen time, which is another key obesogenic risk. After conducting a check-in to discuss homework (i.e., special time home practice of PCIT CDI skills, "Structuring the Mealtime Environments" handout, PREP-PARED practices use), therapists coach the parent(s) and child during a snack time. Coaching is focused on helping parents to generalize their skills to mealtimes and to apply the PARED skills based on the family's needs.

After mealtime coaching for a total of 20 minutes, therapists present the TIME strategies for managing children's use of screen devices (discussed in detail next). For homework, in addition to practicing daily special time and PREP-PARED practices during mealtimes, parents complete the "Structuring Screen Time" handout to plan for specific ways they can apply the TIME strategies. In preparation for the next coaching session, therapists discuss which screen device parents will bring to use with their children during coaching.

TIME Strategies: Managing Children's Screen Use

In HDI 1, therapists introduce the TIME strategies to teach media-related parenting practices. TIME stands for Time-limited, being Involved, Media-free zones, and preventing Exposure to inappropriate content. Parents learn the strategies to reduce conflict around children's use of screen devices (e.g., TV, smartphone, tablet) and to promote positive media practices. *TIME-limited* means allowing children to use screen devices for a set period. Although parents are not instructed in explicit guidelines

for screen time use, parents are encouraged to review the [American Academy of Pediatrics \(AAP; 2016\)](#) guidelines and balance their children's screen time with playtime with toys, and engagement in family time and physical activity. *Being INVOLVED* means parents actively mediate children's media use by commenting on media content while engaging in screen time with their children. By labeling characters' positive behaviors, parents support children's socio-emotional development and help their children learn how to behave ([Rasmussen et al., 2016](#)). Likewise, explaining to children that advertising does not always tell the truth helps inoculate children against the influence of advertisements, such as those for energy-dense, low-nutrient foods ([Buijzen, 2009](#)). *MEDIA-free zones* means limiting when children watch television or use screen devices. Therapists review the recommendations of the AAP to remove screen devices (e.g., television) from children's bedrooms and to avoid use of screen devices during mealtimes ([Chassiakos et al., 2016](#); [AAP Council on Communications and Media, 2016](#)). *Preventing EXPOSURE to inappropriate content* involves parents monitoring and limiting children's access and exposure to unsuitable (e.g., adult themes) or violent media content ([Buijzen, 2009](#)). This also includes limiting exposure to commercials advertising non-nutritious foods, which has been found to confer obesogenic risk ([Dalton et al., 2017](#)). Therapists provide parents with resources to prevent children's exposure to inappropriate content. Resources include information about setting parental controls on devices and using free device-management programs (e.g., OurPact; <https://ourpact.com/>) to limit and monitor children's screen device use (e.g., use at bedtime) and access to content.

HDI Coach 2

The second HDI coaching session includes coaching around mealtime and screen time behaviors. Therapists help parents implement the TIME strategies and generalize PDI limit-setting skills as needed to transition from screen time to snack or playtime. During snack time, therapists continue coaching parents in applying the PARED skills based on the family's needs. After coaching, therapists review managing children's behavior in public (introduced in PDI Coach 3) to prepare for an on-the-road session applying HDI skills during a restaurant mealtime (e.g., identify and bring portable time-out "chair," discuss restaurant choice and food options).

HDI Coach 3

The final coaching session, HDI Coach 3, is an on-the-road coaching session at a restaurant to help parents to generalize PCIT-H skills to real-life situations. Therapists coach parents in applying the PARED skills and TIME

strategies, as well as CDI and PDI skills to manage their children's behavior. Similar to public behavior sessions in standard PCIT, therapists coach parents when needed during the outing. The session concludes with scheduling the graduation session.

The Case of "Timmy K"

We provide this case example to illustrate one family's progress in the PCIT-H HDI module. After completing standard PCIT, the family received the HDI module to reduce problems specifically around mealtime and screen time.

Timmy was an energetic, talkative 5-year-old boy from a two-parent, White family of middle-income socioeconomic status living in the rural Midwest. He was brought to a university PCIT clinic by his biological parents, Mr. and Ms. K. Timmy was referred to PCIT by a developmental-behavioral pediatrician who managed his treatment related to a chromosomal disorder. Timmy had been diagnosed 2 years prior and experienced communication difficulties and problems with following parental instructions, maintaining attention, and regulating his emotions. During intake, Ms. K shared her fears related to Timmy's aggressive behaviors and her concerns about struggles he would face later in life if he did not learn to manage his anger. Timmy's medical conditions required many surgeries, doctors, and hospital visits, and also in-home services (e.g., speech therapy). His oppositional behaviors were difficult to manage during lengthy medical visits and interfered with progress in speech therapy. Ms. K stated they often had to "bargain" with Timmy to get tasks done. Mr. and Ms. K also reported difficulty setting limits around computer use and difficulties around managing Timmy's behavior at mealtimes.

At intake, Mr. and Ms. K completed a clinical interview, as well as measures of children's functioning (Behavior Assessment System for Children, Second Edition Parent Report [BASC-II]; [Reynolds & Kamphaus, 2004](#); Eyberg Child Behavior Inventory [ECBI]; [Eyberg & Pincus, 1999](#); Psychosocial Strengths Inventory for Children and Adolescents [PSICA]; [Niec et al., 2020](#)), parenting stress (Parenting Stress Inventory—Short Form [PSI-SF]; [Abidin, 2012](#)), and parent-child interaction (Dyadic Parent-Child Interaction Coding System [DPICS-IV]; [Eyberg et al., 2013](#)). Based on Timmy's parents' responses to the PSICA, he had many positive behaviors (e.g., often smiling and laughing). However, Timmy's parents' responses on the BASC-II and ECBI suggested that he was displaying externalizing behaviors within the at-risk to clinical range (e.g., getting angry when he did not get his way, being overactive or restless, verbally and physically fighting with sibling). Although Timmy's parents' scores on a standardized self-report measure of parenting stress were within normal limits, both parents verbally reported significant stress managing

Table 2
Case Example: Parent Reports of Child Behaviors Across Treatment

		Time point					
		Pre-PCIT	Mid-PCIT ^a	Post-PCIT	Pre-HDI	Post-HDI	1-month post-HDI follow-up
PSICA Total Frequency Scale (high score = adaptive)	Mother	176	140	185	179	211	-
	Father	126	120	171	134	178	192
ECBI Total Intensity Scale	Mother	150 ^b	94	73	-	72	-
	Father	155 ^b	80	75	-	85	77
BASC-II Externalizing Composite	Mother	62	-	56	-	-	-
	Father	70 ^b	-	64	-	-	-

Note. PCIT = parent–child interaction therapy; HDI = health-directed interaction module; PSICA = Psychosocial Strengths Inventory for Children and Adolescents, raw scores; Higher scores on the PSICA indicate more positive behaviors (Niec et al., 2020). ECBI = Eyberg Child Behavior Inventory, raw scores; Higher scores on the ECBI indicate more disruptive behaviors. BASC-II = Behavior Assessment System for Children, Second Edition, T-scores; “-” indicates no data collected.

^a Mid-PCIT scores are post-CDI (child-directed interaction) phase.

^b Denotes scores in the clinically significant range.

Timmy’s behaviors. Parent–child interactions during the DPICS-IV revealed warm interactions between Timmy and his parents, and also suggested areas for improvement, particularly in situations requiring parental control or limit setting. In Timmy’s case, his parents did not express strong concerns about mealtime behaviors and feeding until treatment was under way—thus, measurement of Timmy’s BMI percentile was not obtained at intake. However, BMI percentile is considered a useful measure in the implementation PCIT-H.

Goals for the CDI phase of treatment were to build on Mr. and Ms. K’s warm and positive interactions with Timmy and to facilitate the development of Timmy’s behavioral and emotional regulation. Because of Timmy’s speech delays and Ms. K’s reports that Timmy became frustrated when he did not feel understood, therapists focused on coaching Timmy’s parents to use the CDI skills (e.g., reflections) to help Timmy feel heard. Mr. and Ms. K implemented special time practice at home consistently, reporting the completion of five to seven practices most weeks.

In addition to reducing parenting stress and increasing children’s positive behaviors through CDI, during the PDI phase parents learn to set safe, consistent limits. At intake, Mr. and Ms. K’s discipline often consisted of overdiscussing the misbehavior and reasoning with Timmy as to why his behavior was inappropriate. They also reported uncertainty regarding Timmy’s ability to understand instructions and consequences. Prior to treatment they had tried removing privileges (e.g., taking away TV time), but inevitably Timmy would watch TV while his brother was watching.

Using effective commands and following the discipline procedure, Mr. and Ms. K were able to progress through PDI. Although Timmy required few time-outs during play and even when his parents gave directions in day-to-day

situations (e.g., putting dishes in the sink), he continued to be aggressive and sometimes threatened to harm his older sibling. As recommended by the standard PCIT protocol, therapists coached Timmy’s parents in setting a “no hurting” house rule and conducted sibling sessions to help his parents use their child-centered discipline skills when Timmy and his sibling played together. After several sibling coaching sessions, Mr. and Ms. K reported that the incidence of time-outs for hurting behaviors had decreased. Around the same time, the Ks reported that Timmy’s school behaviors had improved, Timmy was soon joining a team sport, and he was excited to make friends. Timmy’s parents’ verbal reports of positive change were corroborated by their scores on the ECBI, which were well within the normal range, and on the PSICA, which showed an increase in psychosocial strengths (see Table 2). Timmy’s remaining behavior problems occurred in the context of mealtimes. Mr. and Ms. K also expressed a need to learn strategies to manage Timmy’s excessive media use. The Ks completed the four-session HDI module of PCIT-H.

HDI Teach

At the start of the HDI module, Timmy’s parents completed standardized measures of their typical feeding practices (CFQ) and Timmy’s screen use (Problematic Media Use Measure, PMUM; Domoff et al., 2019). Scores on the CFQ revealed problematic feeding practices, including pressuring Timmy to eat or to try non-preferred foods. Ms. K reported that Timmy had a limited repertoire of foods he would eat and that he expressed disgust when meals included non-preferred foods. Both Mr. and Ms. K reported the feeling that if they did not press Timmy to eat, he would not eat enough (see Table 3). Regarding screen use, strengths included Timmy’s parents’ report that clear expectations

Table 3
Case Example: Child Obesity Risk-Related Parenting Practices

Parenting Practices	Father		Mother	
	Pre-HDI	Post-HDI	Pre-HDI	Post-HDI
Problematic media use	2.0	1.33	1.44	1.0
Food restriction	4.25	4.13	4.0	1.63
Pressuring to eat	4.5	3.75	3.5	2.0

Note. HDI = health-directed interaction module. Problematic media use was measured by the Problematic Media Use Measure (PMUM; Domoff et al., 2019). Food restriction and pressuring to eat measured by the Child Feeding Questionnaire (CFQ; Birch et al., 2001).

were set for him regarding the shows he was allowed to view and the hours during which he was permitted to view them. However, Timmy's parents also reported that he had a television, video player, and video game system in his bedroom and therefore could access screens without supervision.

During the HDI teach session, when therapists discussed R—*recognizing when children are full*—Ms. K expressed relief at the idea of offering Timmy his uneaten food later if he said he was hungry. She stated that Timmy would say he was full after eating only a few bites at dinner and then asked for snacks later in the evening. Therapists discussed how using the PARED skills would ensure that Timmy's parents could feel confident that Timmy was getting enough to eat while avoiding PREP practices.

During mealtime coaching in session, the parent-child dyad was presented with a selection of foods, including nutritive (e.g., fresh fruit) and less nutritive (e.g., graham crackers) options from a list of the child's preferred and non-preferred foods. Coaching focused on Timmy's parents' use of the PARED skills to encourage Timmy's healthy eating and trying non-preferred choices—for example, when Timmy stated that he wanted apple slices, therapists coached Ms. K to praise Timmy's healthy choices and to describe his food saying, "My green apple is super crunchy." Timmy took a bite of his apple and excitedly said, "It's good!" Ms. K also enthusiastically praised Timmy's polite table manners (e.g., "Thank you for using your napkin to wipe your face!"). Therapists also coached Mr. and Ms. K to model healthy eating habits by trying each food and describing its texture; this encouraged Timmy to try the different foods. Therapists then coached Mr. and Ms. K to praise his healthy choices. The in vivo portion of the session concluded with therapists coaching the Timmy's parents to praise and describe Timmy's other positive mealtime behaviors (e.g., keeping food on his plate, throwing away the trash).

HDI Coach 1

Therapists reviewed Timmy's parents' skills practice at home, coached Mr. and Ms. K with Timmy during snack time, and introduced the TIME strategies for managing

Timmy's media use. Ms. K stated that she had involved Timmy in the prior week's grocery shopping and Timmy excitedly picked out fruits and vegetables. She stated that including Timmy in food preparation as part of their new mealtime routines appeared to increase his interest in eating new food options. Coaching continued with the PARED skills. Positive changes were observed as Timmy tried foods he disliked (i.e., strawberry and blueberry) and as Timmy's parents observed and reinforced his indications of satiety. After mealtime coaching, therapists introduced the TIME strategies and reviewed handouts to help Mr. and Ms. K make plans for mediating Timmy's media use. In discussing how they would apply TIME strategies, Mr. and Ms. K stated that they previously brought their mobile phones to the dinner table and would model healthy media use for their children by leaving their phones in the kitchen.

HDI Coach 2

In the second HDI coaching session, therapists coach parents in the TIME strategies while using screen devices with their children, transitioning from screen device use, and using PARED practices during snack time. Therapists coached Timmy's parents in applying the TIME strategies while selecting and watching a child-appropriate video with him. Timmy's parents used good active mediation, describing characters' behaviors and remaining involved (e.g., "That puppy is going down the slide. You're smiling watching the puppy play"). When the video Ms. K selected was interrupted by a commercial, she used TIME strategies to restrict exposure to the advertisement and select different content that would be appropriate to watch. Therapists then coached Timmy's parents to use their skills to help Timmy transition from screen time to snack time. Although Timmy initially was not interested in participating in snack time, which included disliked foods, he rejoined his parents at the table as they used their CDI and PARED skills. When Timmy began engaging with the snack foods, his parents spontaneously used their PARED skills (e.g., "You picked up a blueberry," "Thank you for touching the blueberry," "You smelled the celery"). Similar to HDI Coach 1, therapists helped Timmy's

parents to use commands during snack for non-eating behaviors (e.g., “Please pass me a napkin”). This session concluded with planning for HDI 3, an on-the-road session at a fast-food restaurant for Timmy’s parents to practice their PARED skills and apply TIME strategies as needed.

HDI Coach 3

The third and final HDI coaching session allows parents to practice mealtime and screen time skills with coaching in public at a restaurant. Akin to a standard PCIT on-the-go session, therapists helped Timmy’s parents to plan for mealtime (e.g., Timmy’s responsibilities before food arrived, providing options when ordering food at a restaurant, ways to keep Timmy occupied after he finished eating) and coached them through managing Timmy’s behavior during the restaurant outing—for example, therapists and Timmy’s parents discussed how a time-out would be implemented at the restaurant if necessary (e.g., plan to sit in a less crowded area of the restaurant, bring a portable marker of a time-out space). Therapists helped Timmy’s parents to apply PARED skills throughout the session from *structuring mealtime* (e.g., “The options for dinner are a hamburger or a grilled cheese sandwich. For a side they have French fries or apple slices”), to *praising healthy mealtime behavior* (e.g., “Great job choosing apple slices as your side! Fruits help you grow strong and healthy!”), *describing mealtime activities* (e.g., “These French fries are salty. They are a fun sometime-food to enjoy”), and *recognizing when children are full* (“Great job wrapping up your hamburger to take home”). When Timmy finished eating, therapists supported Mr. and Ms. K in their use of the skills they had learned throughout PCIT-H to manage Timmy’s behavior in a restaurant setting (e.g., “We are still finishing our meal. Thank you for staying seated at the table when you finished eating”).

Graduation

The final session of PCIT-H is approximately 90- to 120-minutes to allow for a review of the family’s progress in developing child-centered, limit-setting, and health-related behavior skills. Timmy’s parents completed post-intervention measures (PSICA, DPICS-IV behavioral observation, BASC-II, ECBI, PMUM, CFQ) and therapists reviewed the family’s progress, such as Mr. and Ms. K’s generalization of skills to manage Timmy’s general and health-related behaviors. Based on their responses on standardized measures, the Ks perceived a reduction in Timmy’s disruptive behaviors to within normal limits. Timmy’s parents also reported that he demonstrated more psychosocial strengths than he did at the start of treatment (see Table 2). The Ks reported that using the

PARED skills made mealtimes more positive. They recognized that Timmy ate small meals and no longer felt they needed to pressure him to eat (see Table 3). They established a routine of offering Timmy his uneaten food if he was hungry later, so he no longer asked for snacks in the evening. The graduation session concluded with the presentation of certificates of achievement for the family.

Conclusion

Childhood obesity is associated with staggering public health costs and many negative health outcomes for children as young as 2 years old, yet it is a preventable condition. General parenting and parental feeding practices increase or buffer children’s obesity risk. PCIT-H is a selective-prevention parenting intervention developed to generalize parents’ child-centered and limit-setting skills to obesity-risk contexts. The brief prevention model draws from the literature on effective models to reduce children’s negative health outcomes, as well as the literature on behavior change and parenting skill acquisition. PCIT-H focuses on strengthening the parent–child relationship and improving parental feeding practices to reduce parents’ use of negative feeding behaviors (Rhee et al., 2006). As a prevention model for young children, therapists coach parents in health-related behaviors in playtime, during mealtime, and around screen device use before children’s negative eating practices and sedentary activity patterns become established. Particularly for families of lower socioeconomic status (wherein parent–child conflict is higher given economic or financial stressors) or those from ethnic backgrounds with a higher prevalence of obesity, the buffering strategies provided by the PCIT-H model (e.g., enhancing parenting efficacy) may have the potential to significantly impact health outcomes related to obesity (Brotman et al., 2012; O’Connor et al., 2015).

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