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Utility of an Emotion Coding System for Parent-Child Interaction Therapy with Toddlers

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Abstract

Numerous efficacious early interventions target and alter caregiver-child interactions to promote optimal social-emotional outcomes for young children (Bagner et al., 2014). However, research has primarily relied on the use of caregiver report to assess caregiver-child emotion-focused practices, revealing the need for a behavioral observation assessment (Zinsser et al., 2021). Preliminary evidence suggests that Parent-Child Interaction Therapy with Toddlers (PCIT-T) is a well-received and efficacious intervention for reducing disruptive behaviors, improving child internalizing and externalizing behavior, reducing parental stress, and increasing parental sensitivity (Kohlhoff et al., 2021; Kohlhoff, Cibralic, & Morgan, 2020). PCIT-T strives to train caregivers to interact with their toddlers in a nurturing and sensitive manner to promote healthy attachment, improve child emotion regulation skills, and enhance child emotion socialization. Presently, PCIT-T lacks a well-established observational emotion coding system that would benefit treatment and the broader field of clinical child psychology in measuring outcomes in caregiver-child emotion-focused practices. The Dyadic Emotion Coding System (DECS) was developed to measure caregiver-toddler emotion talk emotion-focused practices. The current study evaluated the validity, reliability, and clinical utility of the DECS with archival data extracted from a randomized clinical trial of PCIT-T with 90 caregiver-toddler dyads referred for treatment of child behavior problems. DECS codes were significantly associated with maternal sensitivity, as well as exploratory relationships with caregiver and child emotion regulation. After undergoing PCIT-T, caregivers significantly improved in their use of adaptive emotion-focused practices. Practical utility of a standardized DECS training procedure was demonstrated via test-retest reliability ($\kappa = .78$). Evidence suggests the DECS would provide a well-established observational emotion coding system to benefit PCIT-T.

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The purpose of the proposed study was to investigate the clinical and psychometric utility of the Dyadic Emotion Coding System (DECS), a novel, standardized, and comprehensive observational system for measuring changes in caregiver-toddler emotional language after undergoing an early intervention. This investigation utilized data from caregivers and toddlers who participated in a larger randomized controlled trial of an early intervention, Parent-Child Interaction Therapy with Toddlers (PCIT-T; Kohlhoff et al., 2020). Psychometric evaluations of novel measures are of paramount importance when developing and evaluating the efficacy and effectiveness of psychosocial interventions. Otherwise, researchers risk creating a magnificent house (i.e., evidenced-based intervention) on a faulty foundation (i.e., questionable measures).

Presently, there is a critical gap in the literature for a published and well-validated caregiver-toddler emotion coding system. Zinsser et al. (2021) highlighted, in a systematic review and meta-analysis on emotion-focused parenting practices, the need for better emotion-focused coaching measurement; specifically, studies primarily relied on self-report measures when assessing both parental modeling and responding of emotions. The DECS would allow for the replication of measurement strategies across research which Zinsser et al. (2021) identified as a “crucial advance” needed in the area of emotion-focused parenting interventions. As behavioral coding systems necessitate a complex and time-intensive process, the development and validation of a broadly applicable dyadic caregiver-child emotion coding system would provide the literature with a unified process of coding caregiver-child emotion talk.

More specifically, the DECS may serve as a useful tool for the proliferation of the next generation of PCIT programs targeting emotion coaching for children with both internalizing and externalizing concerns (e.g., separation anxiety, depression, and ADHD). A core component of

standard PCIT includes a well-established behavioral observation that measures a host of positive parenting practices (e.g. labeled praise, reflection, and behavioral descriptions), negative parenting practices (e.g., negative talk and commands), and child behaviors (e.g., child noncompliance), known as the Dyadic Parent-Child Interaction Coding System (DPICS; Robinson & Eyberg, 1981; Eyberg et al., 2013). The DPICS represents an essential component that guides standard PCIT treatment beginning with intake to inform treatment planning and in vivo coaching, as well as provide quantitative data to guide progression through treatment and decisions about graduation. In fact, the DPICS is integral to successful treatment fidelity as PCIT International (2021) identifies DPICS competence as an essential criterion for certification. Moreover, PCIT therapists have been shown to prefer behavioral observation to self-report measures for multiple reasons, including (1) data offered (e.g., relationship quality, caregiver skills, and caregiver-child interactions), (2) actionable skills to measure as a means of motivating clients, and (3) helpfulness in guiding treatment through structured feedback, identifying goals, and informing coaching (Klein et al., 2021).

Standard PCIT heavily relies on the behavioral observation coding system at nearly every stage of treatment when making important clinical decisions to successfully implement PCIT. However, this robust direct observation system, iteratively refined in numerous studies over 40 years, lacks a system for coding caregiver-child emotion-focused content and behaviors. PCIT-T is a unique adaptation in that it incorporates a strong focus on emotion, including recognizing, identifying, and supporting the toddler's emotional needs for the purpose of optimizing the child's social-emotional functioning. While the DPICS provides a wealth of coding information, it does not incorporate a method of coding relevant caregiver-child emotion talk or interactions. For this reason, the psychometric validation of the DECS becomes increasingly critical as PCIT-

T and other emotion coaching PCIT programs begin to burgeon. For an extended systematic review see Appendix A for a detailed review of the prolific nature of the DPICS in research and structural foundation for the development of the DECS.

Parent-Child Interaction Therapy with Toddlers

A culmination of years of research on PCIT has demonstrated it to be a robust behavioral parent training intervention for children two to seven years of age (Thomas et al., 2017; Thomas & Zimmer-Gembeck, 2007; Ward et al., 2016). Laying the foundation for PCIT-T, previous research has investigated the extension of PCIT in young children with children born prematurely (Bagner et al., 2012; Bagner et al., 2010; Graziano et al., 2012), young children with complex medical conditions (Shafi et al., 2018), and infants with a CDI phase implemented in the home (i.e., Infant Behavior Program; Bagner, 2016; Morningstar et al., 2019). In an investigation of the efficacy of the application of a home-based adaptation of the child-directed interaction phase of PCIT known as the Infant Behavior Program (IBP), Bagner et al. (2016) found infants in the IBP group demonstrated higher compliance, lower externalizing, and lower internalizing behavior problems compared to infants in the standard care group. Moreover, quantitative and qualitative reports demonstrated positive changes in caregiver-infant communication and parenting practices following PCIT (Morningstar et al., 2019; O'Toole et al., 2021). These earlier studies were important in (a) providing efficacy for extending the PCIT model to younger children, (b) experimenting with modification to PCIT treatment components with consideration for early child development (e.g., altered time-out and the inclusion of sign language), and (c) demonstrating PCIT improves infant compliance, parenting skills, and responsive caregiving. This foundation of young child PCIT adaptations culminated in the

development of PCIT-T (Kohlhoff, Cibralic, & Morgan, 2020; Kohlhoff & Morgan, 2014; Kohlhoff, Morgan, et al., 2020; Kohlhoff et al., 2021).

As an adaptation of PCIT, PCIT-T was designed to meet the needs of young children between 12 and 24 months of age. In particular, the focus is on meeting the emotional and physical needs of the child by improving a caregiver's sensitivity to their child's emotional needs with developmentally appropriate emotional responding and consistent limit-setting (Girard et al., 2018). Capitalizing on the basic structure and principles of PCIT, PCIT-T stands as an adaption of the model: specifically, PCIT-T can be differentiated from PCIT in how it addresses the developmental needs of younger toddlers. More specifically, PCIT-T focuses on recognizing and supporting toddlers' emotional needs using the CARES model, under-reaction and redirection, or age-appropriate limit-setting technique instead of the traditional PCIT discipline procedure (Girard et al., 2018; "Parent-Child Interaction Therapy with Toddlers", n.d.). For example, the CARES model consists of the following techniques: (1) come in close to the toddler, (2) assist the toddler to help solve the current problem, (3) reassure the toddler, (4) emotionally validate the child's feeling, and (5) soothe the toddler by giving physical cues and modeling a calm attitude (Girard et al., 2018). The PDI phase of PCIT-T also departs from the traditional time-out discipline procedure; instead, the PCIT-T PDI phase includes a guided compliance procedure (i.e., tell, show, try again, and guide procedure) along with standard PDI teach components, such as the eight rules for effective commands, selective attention, and limit setting (Girard et al., 2018; McNeil & Hembree-Kigin, 2010). Similar to standard PCIT (McNeil & Hembree-Kigin, 2010), PCIT-T incorporates in vivo coaching during caregiver-child play sessions (e.g., bug-in-the-ear coaching) preceded by teaching sessions with caregivers. However, in addition to coaching caregivers on increasing use of positive parenting skills (e.g., PRIDE

skills) and decreasing negative parenting behaviors (i.e., criticism, commands, and questions), PCIT-T includes an added emphasis on promoting caregiver and child emotion regulation skills, including sensitivity, reassurance, emotion validation, and soothing techniques (Girard et al., 2018). These adaptations to the standard PCIT model were included to promote optimal social-emotional child functioning by incorporating specific age-appropriate skills.

The earliest evidence for PCIT-T was an effectiveness and acceptability study conducted by Kohlhoff and Morgan (2014). In this retrospective investigation, outcomes of families (N = 87) who completed PCIT or PCIT-T were compared in three groups (n = 29 families in each group): (1) under 2 years age PCIT-T group, (2) 2-3 years age PCIT group, and 3-4 years age PCIT group (Kohlhoff & Morgan, 2014). As a result, PCIT-T was associated with a range of positive treatment outcomes; specifically, (a) significant decreases in disruptive behaviors for all age groups (i.e., ECBI Intensity, ECBI Problem), (b) significant improvements in maternal distress for all age groups, (c) a significant reduction in average parent commands (i.e., 38.2%; DPICS), (d) a significant increase in average parent praises (i.e., 13.5%; DPICS), and (e) high parental satisfaction (Kohlhoff & Morgan, 2014). While this initial study had some limitations (e.g., no control group and small sample size), it provided the first quantitative evidence of the successful application of PCIT-T in young children with disruptive behaviors.

Complementing the earliest quantitative investigation (i.e., Kohlhoff & Morgan, 2014), Kohlhoff, Cibralic, and Morgan (2020) utilized a qualitative method (i.e., thematic analysis of semi-structured interviews) with 5 parents who received the CDI phase of PCIT-T. Adding to the evidence-based information, results showed that parents positively perceived treatment, including improved parental confidence and relationship quality (Kohlhoff, Cibralic, & Morgan, 2020). Another study utilized an open trial design from participants initially recruited to

participate in the larger RCT (Kohlhoff, Morgan, et al., 2020); specifically, participants included 56 caregivers and their young children (M = 19 months old). This study demonstrated that the CDI phase of PCIT-T was associated with improvements in a wide variety of domains at post-treatment and at 4-months follow-up; specifically, the study showed significant improvements at both timepoints for (a) positive and negative parenting behaviors, (b) parent emotional availability, (c) child behavior problems, and (d) parenting stress (Kohlhoff, Morgan, et al., 2020). Thus, the evidence is promising on the effectiveness of the CDI phase of PCIT-T with respect to long-term impacts on parenting behaviors, child problem behaviors, parenting stress, and caregiver sensitivity. In another study, Kohlhoff et al. (2021) investigated the immediate effects of the efficacy of the CDI phase of PCIT. Using a similar design but focused on examining differences between pre-treatment and 8-week post-treatment only, Kohlhoff et al. (2021) found the rates of reliable change improvement were higher in the intervention group than the waitlist control across nearly all outcome variables (i.e., all parental skills; parent emotional availability, sensitivity, structuring, non-intrusiveness, and non-hostility; child externalizing and internalizing behavior; all parental stress variables). Moreover, the intervention group from time 1 to time 2 showed large and medium effect sizes for multiple outcome variables: (a) positive parental skills (d = 2.09), (b) negative parental skills (d = 1.07), (c) parental sensitivity (d = 0.83), (d) child externalizing behavior (d = 0.87), (e) child internalizing behavior (d = 0.92), (f) parental structuring (d = 0.62), (g) parental non-intrusiveness (d = 0.66), (h) perception of the child as difficult (d = 0.51), total parental stress (d = 0.52), and (i) parental mood (d = 0.38). As the aforementioned studies demonstrate, the CDI phase of PCIT-T has been associated with multiple positive parenting and child outcomes immediately after treatment and at a 4-month follow-up. Future research should include investigations on the efficacy of both the CDI and PDI

phases of PCIT-T. While it represents a newer PCIT adaptation, PCIT-T demonstrates promise as an early intervention for toddlers with comorbid disruptive behaviors. While standard PCIT focuses on training parents in skills targeting improvements in externalizing behaviors, PCIT-T has added a strong emotion socialization component. This added focus of PCIT-T supports the need for a well-established direct observation tool for measuring caregiver-toddler emotion behaviors.

The proliferation of research applying PCIT to internalizing disorders is particularly relevant to the development of PCIT-T not only because it addresses emotion-specific concerns, but also because PCIT is well-positioned as a behavioral parent intervention to address these concerns in a developmentally appropriate way (Carpenter et al., 2014; Puliafico et al., 2012). Because caregivers are the agents of change in PCIT, it capitalizes on altering caregiver-child interactions instead of child cognitive strategies to address internalizing concerns. Although PCIT was initially created to address externalizing concerns, the parenting-based approach can also be applied to ameliorating caregiver-child interactions linked to internalizing disorders (e.g., intrusive, overprotective, and controlling parental behaviors; Carpenter et al., 2014). Although focused on children ages 3 to 8 years, PCIT has been previously extended to internalizing disorders (i.e., separation anxiety disorder, social phobia, generalized anxiety disorder, and specific phobia) including emotion-relevant modifications to PCIT (i.e., bravery-directed interaction [BDI] and the CALM program). For instance, the PCIT-CALM Program (i.e., Coaching Approach behavior and Leading by Modeling) extends applications to other internalizing disorders with a novel set of skills for caregivers to learn and practice during in vivo exposures (Puliafico et al., 2012). Another emotion-focused adaptation includes PCIT-Emotion Development (PCIT-ED; Lenze et al., 2011). In PCIT-ED, the CDI and PDI modules

are limited to six sessions followed by eight sessions of the ED module which focuses on enhancing the child's emotional competence by improving their ability to identify, label, and regulate their emotions (Lenze et al., 2011). An open trial pilot of PCIT-ED with preschool children (i.e., 3 to 5 years of age) demonstrated decreased depressive symptoms and behavioral problems at post-treatment. Although these studies tended to focus on preschool-age children compared to toddlers, these studies were important to include since the DECS may serve as a useful tool for PCIT programs incorporating emotion coaching for children with internalizing difficulties or concerns. For an extended systematic review, see Appendix B, which provides a detailed examination of the literature on young child and emotion coaching PCIT adaptations.

Toddler Emotion Socialization

Since caregiver-toddler emotion socialization practices and talk are central to the development and prospective utility of the DECS, it is important to contextualize early life development. Language and emotion development in infants may best be understood as a dynamic process requiring effort, engagement, and attention often driven by interactions with those most present in their lives at this time, caregivers. The importance of developing emotion early in life has downstream effects on academic success (Denham et al., 2012), peer acceptance (Cassidy, Parke, Butkovsky, & Braungart, 1992), social competence (Denham et al., 2003), and emotion regulation (Eisenberg et al., 2001; Valiente et al., 2004). On average, young children acquire their first words between 9 and 17 months of age, undergo a vocabulary spurt between 13 and 24 months, and begin using simple sentences between 18 and 32 months (Bloom, 1998). Emotional development is inextricably connected to the development of these language milestones. Within the first few months, infants demonstrate a spreading of emotional reaction (i.e., emotional contagion) to external stimuli through increased vocal and facial distress

responses (Geangu, Benga, Stahl, & Striano, 2010). Caregiver-infant emotional contagion has been demonstrated in 12- to 14-month-old infants; specifically, Waters et al. (2017) found that low-arousal and high-arousal affective states from caregivers produced similar physiological responses in infants. Since infant emotional expression is already established by approximately 12 months of age (Bloom, 1998), emotional language development becomes critical to express and articulate emotional experiences rather than merely display emotions. Thus, the development of emotion and language occurs as an interactive process within the first few years of life for infants.

The dynamic development of emotion and language in infants is driven primarily by attention, effort, and engagement from their primary caregivers through an experience-dependent early developmental model (Camras et al., 2014). Consider a scenario where a child is crawling towards the end of a changing table, nearing the edge, while across the room the caregiver quickly notices and emotionally reactions with fright. Caregiver's expression of emotion toward objects or situations in the infant's environment directly affects infant avoidance at 12-months of age (Aktar et al., 2013). Similarly, infant exposure to positive emotions from caregivers is associated with attention to strangers' positive emotions (De Haan et al., 2004). Caregivers play a substantial role in the early emotional development of infants as social partners through a combination of active interaction and modeling, including direct verbal communication of affective states, differential attention to specific emotional states, and reactions to stimuli in the infants' environment (Klinnert et al., 1983). For instance, less positive and more negative/flat affect in both parents and infants is associated with depression in caregivers; moreover, infants of caregivers with depression are less likely to engage in toy exploration than infants of caregivers without depression (Aktar & Bogels, 2017). Due to this, depressed caregivers may

benefit from specific coaching to increase attention, modeling, and labeling of positive emotions and affective states to increase warmth, encourage caregiver-toddler interactions to be more arousing and stimulating, and reduce the potential for infants to mirror a dysphoric interaction style (Aktar & Bogels, 2017). Similarly, anxious parents often provide infants with more frequent and intense exposure to fearful/anxious expressions and verbalizations in ambiguous situations, which provides infants with more opportunities for the occurrence of associative fear conditioning (Aktar & Bogels, 2017). Anxious parents are likely to respond in ways that reinforce infants' anxious/avoidant behaviors (i.e., behavioral inhibition). For instance, more exposure to fearful faces from anxious parents is associated with decreased interest in high-intensity fear faces in infants and more avoidance of novelty in children (Aktar & Bogels, 2017). Thus, given the dynamic and influential power of early life dyadic caregiver-infant interactions on social-emotional development, robust behavioral observation systems such as the DECS have the potential to provide targets for intervention to ultimately improve caregiver-infant environments and optimize young children's emotional and social development.

DECS

The DECS underwent idiosyncratic code development for the proposed exhaustive observational emotion coding system. This phase included (1) identification of domain and idiosyncratic code generation and (2) validation of content. Both deductive (e.g., logical partitioning) and inductive (e.g., expert consultation) methods were used to both define the domain and identify the questions to assess it. Furthermore, it included successive and iterative discussions with content experts to ensure the coding system measures distinct and relevant emotion categories that are clearly operationalized. Thus, successive evaluations of this emotion coding system produced discrete code categories and standardized assessment procedures, along

with an accompanying manual to provide information for subsequent training and future investigations into the DECS (e.g., assessment procedures, definitions, priority rules). During this process, content experts also evaluated the form of the codes, the wording of the codes, and the types of responses that the coding system and assessment procedures are designed to induce. Content validity was assessed through evaluation by expert and target population judges; specifically, judges reviewed the evidence of content relevance, representativeness, and technical quality. Expert judges were highly knowledgeable about the domain of interest (e.g., emotion socialization, parent-child interactions, and early child development). Target populations included potential users of the scale and individuals with expertise at evaluating face validity (e.g., PCIT-T trainers). The DECS coding scheme utilizes a three-pronged approach to code identification: (a) caregiver emotion-focused response type (i.e., validating, identifying, dismissing, modeling, modeling with toys, or not otherwise specified), (b) emotional valence of content (i.e., positively-valenced emotion words [e.g., happy] or negatively-valenced emotion words [e.g., sad]), and (c) level of emotion talk content (i.e., basic emotions, diffused emotions/states of being, and emotional behaviors).

Caregiver emotion-focused practices

Prior research has called for the investigation of specific parenting practices that promote or demote child emotional skill development for identifying core early intervention components (Zinsser et al., 2021). The DECS caregiver verbalization code component is exhaustive in nature in that a statement that includes an emotion word would be coded into one of six codes: (1) emotion validation, (2) emotion identification, (3) emotion dismissing, (4) emotion modeling, (5) emotion modeling with toys, or (6) emotion not otherwise specified (ENOS). To account for future refinement of the DECS caregiver emotion-focused practices, an exhaustive coding

approach was applied to coding wherein all possible caregiver emotional verbalizations are coded within the DECS. In the DECS coding manual, ENOS is presently defined as any instance of emotion language that clearly does not fit into the other categories, including but not limited to future and past tense outside of the play context, emotion language within songs, and talking to the therapist. For example, the caregiver verbalization "you had fun at grandma's yesterday" is an example of ENOS.

In the DECS, emotion validation talk provides an explicit positive and/or supportive evaluation of the child's emotion (e.g., it's okay to feel sad). However, emotion identification can be distinguished from validation statements as providing more neutral acknowledgments of child emotions (e.g., you're feeling sad; Gottman et al., 1996). Conversely, emotion dismissing talk statements are defined in the DECS as negative evaluations of child emotions (e.g., quit acting so sad). Negative and dismissing caregiver emotion-focused responses have been related to immediate increases in child anger (Snyder, Stoolmiller, & Wilson, 2003). When sustained over time, dismissing and negative reactions to child emotions are associated with poor social functioning and emotion regulation difficulties (Eisenberg et al., 1998). Overall, parental emotion-focused responding has been shown to be significantly associated with child emotion regulation across multiple studies as reported by Zinsser et al. (2021). Specifically, the significant associations between emotion-focused caregiver responding and child emotion regulation include (a) pooled bivariate correlations (r=0.05; 95% CI: -0.01, 0.09]) and (b) standardized regression coefficients (B=0.08; [95% CI: 0.03, 0.12]).

To capture caregiver emotion-focused modeling practices, the DECS includes two relevant codes. First, it includes Emotion Modeling (EM) defined as an indirect form of instruction that involves the caregiver performing evaluations of their own emotions or the

emotions of others, but not the child; for example, “mummy is so proud.” Second, it includes Emotion Modeling with Toys (EMT) operationalized as any instance of emotion language in which the parent is modeling emotion evaluations in toys; specifically, the parent referencing the toy’s emotion, such as “the baby is laughing.” Bandura (1976; 1977) defined modeling as a form of vicarious learning wherein behavior is shaped and regulated via repeatedly observing “...the actions of others and the occasions on which they are rewarded, ignored, or punished” (Bandura, 1977, pp. 24). According to Morris et al. (2007), another method by which children learn about emotions is through acquiring information from another individual about possible emotion responses and ways to manage emotions, known as social referencing. Eisenberg et al. (1998) noted that parental expression of emotion can affect social referencing of other objects; for instance, infants approached unfamiliar toys less when their mothers displayed negative affect and more when their mothers displayed positive affect toward the unfamiliar toys (Gunnar & Stone, 1984; Klinnert, 1984). Importantly, Zinsser et al. (2021) reported on the associations between emotion-focused caregiver modeling and child emotion regulation: (a) pooled bivariate correlations (r=0.04; CI: -0.06, 0.14) and (b) standardized regression coefficients (B=0.09; CI: -0.01, 0.19).

Emotion Valence

Emotion valence is important to capture when considering the dimensionality of emotion. In relation to the valence of caregiver-child emotional talk, consider the differential impact of talk consisting exclusively of negative valence emotional words (e.g., hurt, aggressive, nasty), exclusively of positive valence emotional words (e.g., love, nice, sweet), or a balance of both positive and negative valence emotional words. As PCIT demonstrates significant improvements in caregiver warmth mediated by increases in caregiver positive parenting practices (Bagner et

al., 2018), it becomes important to consider the clinical relevance and impact of coaching negative valence emotions. Are and Shaffer (2016) highlight that parental emotional expressiveness is a core component of emotion socialization that influences the development of a child's emotional competence; importantly, the pattern of expressiveness is connected to the frequency and valence of emotions. In a sample of 110 mother-child dyads, with children ranging from 3- to 5-years-old, Are and Shaffer (2016) found a significant indirect relationship between maternal emotion dysregulation and child adaptive emotion regulation through positive family expressiveness. However, Are and Shaffer (2016) found significant associations between maternal emotion regulation difficulties and positive expressiveness (i.e., B = -.39), child adaptive emotion regulation and positive expressiveness (i.e., B = .05), and maternal emotion regulation difficulties and negative expressiveness (i.e., B = .23). The mixed findings on negative family expressiveness may be due to a curvilinear relationship between negative parental expressiveness and child emotion regulation as Halberstadt et al. (1999) argues that moderate levels of negative expressiveness constitute the most ideal environment for children to develop adaptive emotion regulation skills.

The purpose of coding emotional valence in the DECS is multi-faceted. First, it serves the purpose to investigate overall parental attenuation to child positive and negative affect. For instance, caregivers who may utilize adaptive emotion-focused practices and little-to-no emotion dismissing may subtly ignore negative child affect rather than explicitly dismiss it. While PCIT avoid skills (e.g., negative talk, criticism, and commands) may constitute negative parenting behaviors, adaptive emotion-focused parenting practices may need to include a balance of labeling negative and positive affective states for promoting an optimal environment to develop adaptive emotion regulation skills (Halberstadt et al., 2000). Gottman et al. (1996) highlighted

that specific negative emotions serve different functions, and often there is a "...tendency to overgeneralize and conclude that anger is harmful for children…" (pg. 254). DECS emotional valence codes may serve as a potential method for critical inquiry into the effects of differential caregiver expressiveness patterns (e.g., frequency and valence of emotional talk) on various child outcomes (e.g., emotion regulation and emotion socialization).

Levels of Emotion

Recent and seminal large-scale data analytic work conducted by Cowen and Keltner (2020) departed from the field's focus on the prototypical expression of six emotions and collected hundreds of thousands of judgments of emotion categories and dimensions of perceived appraisals. In total, Cowen and Keltner (2021) collected 412,500 individual judgments, from 1,794 raters aged 18 to 76 years, rating each expression in four response formats: emotion categories (i.e., 30,000 judgments), affective scales (i.e., 351,000 judgments on a 9-point scale), free response (i.e., 13,500 judgments), and assessments of ecological validity (i.e., 18,000 judgements). Results indicated that participants recognized 28 categories of emotions that were reliable, semantically distinct, and accurate descriptors for naturalistic emotional expressions: amusement, anger, awe, concentration, confusion, contemplation, contempt, contentment, desire, disappointment, disgust, distress, doubt, ecstasy, elation, embarrassment, fear, interest, love, pain, pride, realization, relief, sadness, shame, surprise, sympathy, and triumph (Cowen & Keltner, 2020). For the purpose of DECS emotional category codes, the first level (i.e., basic emotion) will include these 28 semantically distinct emotion categories and their free-response terms most highly correlated synonyms (e.g., sympathy includes concern, compassion, pity, and caring), as identified by Cowen and Keltner (2020). Please see Table 1 for a comprehensive list of the 28 basic emotions and their synonyms.

To adequately and exhaustively capture caregiver-child emotion level talk, the DECS was developed with two additional levels to capture caregiver-child verbalizations that contain words that fall outside of the 28 semantically distinct emotions and their synonyms as defined by Cowen and Keltner. Through expert consultation and logical partitioning using Cowen and Keltner's (2020) 28 emotion framework, semantically similar words but conceptually distal words were coded into one of two categories: (a) level two (i.e., diffused emotions considered to be socially constructed, culturally-relative, and/or states of being) or (b) level three (i.e., behavioral emotions). Additionally, a 29th category was added to capture level two and level three emotional words that fall outside or inside multiple of the 28 basic emotion categories (e.g., silly, brave, boring, naughty, and nice/nicely). First, level two emotional word categories represent words that conform to the following questions when coding: (a) Is it considered a state of being? (e.g., aggressive, thankful, sleepy), (b) Does it contain cultural variation? (e.g., patient, gentle, and funny), and (c) Is it socially constructed? (e.g., intelligent). Second, level three emotional word categories represent words that relate strongly to behaviors (i.e., behavioral emotions), including smiling, smacking, thanking, and hugging. When coding behavioral emotions, coders should be confident that the emotional word does not conform to any of the aforementioned questions certifying level two emotional words. Additionally, behavioral emotions should represent observable behaviors and may be further distinguished by ensuring it does not represent a "feeling"; that is, coders can do another validity check by asking themselves, "does this emotional word represent a feeling?" Please see Table 2 for additional examples of emotional word categorization in the DECS.

Present Study

The current study aimed to investigate the validity, reliability, and clinical utility of the

Dyadic Emotion Coding System (DECS) in a sample of caregivers and their young children enrolled in a larger randomized-controlled trial investigating the efficacy of PCIT-T (Funder: University of New South Wales; ACTRN12618001554257; *The Karitane 'My Toddler and Me' study*; PI: Kolhoff). More specifically, the present study served as an important empirical evaluation of different types of psychometric validity and reliability data for the DECS. Critically evaluating and transparently reporting this psychometric evidence is a necessary first step to understanding the attributes of the DECS for recommended utility and future iterative development. As PCIT-T introduces a stronger focus on improving parental sensitivity and child social-emotional functioning by incorporating caregiver emotion-focused practices into PCIT, the establishment of an emotion-focused behavioral observation measure to this assessment-driven treatment would also likely be well received by current PCIT therapists working with various age ranges and diagnoses (Klein et al., 2021). For instance, the proposed analyses aimed to discern (a) the psychometric properties of the DECS and (b) whether specific DECS codes or composites (see figure 2) can quantify treatment change, two components identified by PCIT therapists as important factors for preferring behavioral observation over self-report (Klein et al., 2021).

Aim 1: DECS Descriptive Data

The present study used data that was extracted from mixed-methods; that is, the DECS utilized count data derived from descriptive qualitative data that were dependent on the source (i.e., caregiver participants), method (i.e., standardized instructions), and contextually bound to the intervention setting. This presented important conceptual and statistical considerations for the proposed aims and analyses, respectively. With conceptual consideration in mind, to capitalize on the richness of the qualitative dataset, extensive descriptive and thematic reports were

conducted that reintegrated statistical analyses with results situated in qualitative analysis.

Tableau (2022) data visualization software was used to generate data visualizations, including qualitative emotion words, emotion word valance, and descriptive DECS data (e.g., individual codes and composites) across timepoints for all participants. Tableau (2022) was also used to depict the most common qualitative emotion words by emotional valence. Descriptive DECS data (e.g., individual codes and composites) at each time point for all participants enrolled in the parent study were produced.

Aim 2: Investigate the Reliability of the DECS

The second aim focused on evaluating the DECS reliability data for the entire coding system, composite DECS categories, and all discrete DECS codes. As Klein et al. (2021) found that the perceived reliability of a behavioral observation measure compared to self-report measure impacted provider preference, establishing reliability for the DECS is also highly important from an implementation perspective. For instance, PCIT therapists were found to prefer the DPICS, over the ECBI, due to behavioral observation being perceived as a more direct measure with information that may not get captured by self-report measures (Klein et al., 2021). Reliability of the codes was assessed using Cronbach's alpha and/or split-half estimates. The present study achieved Aim 2 by accomplishing the following:

1. Interrater reliability was empirically investigated by double coding 100% of baseline participant videos by two independent coders, analyzing internal consistency, and reporting kappa reliability statistics on DECS codes.
2. Temporal stability of DECS training was also empirically examined using the test-retest method by having individual coders re-coding a sample of their videos after a 4-to-8-week interval, analyzing correlations, and reporting findings on DECS code scores. The

test-retest correlation provides an estimate of coding measurement error affecting the test as the video, transcripts, and coders will remain constant. This provided information on the feasibility, practicality, and utility of DECS as well as the proposed DECS training. For instance, it helped identify complicated DECS codes and give insight into the likelihood of DECS coding drift. An important reason for including this analysis was PCIT therapists have reported the ease of use and utility as a training tool to be important factors to preferring a behavioral assessment over self-report (Klein et al., 2021).

Aim 3: Evaluate the Validity of the DECS

Convergent Validity

Convergent validity is the degree to which scores are correlated with related constructs. Potential correlations were examined between the DECS codes and questionnaire data to provide evidence of convergent validity. Convergent validity analyses included DECS total average score, adaptive emotion-focused, adaptive direct emotion-focused, and adaptive indirect emotion-focused composite code scores, and individual code scores of each participant with specific baseline measures, including the National Institute of Child Health and Human Development (NICHD) total sensitivity, Difficulties in Emotion Regulation Scale (DERS), Dyadic Parent-Child Interaction Coding System (DPICS), and Devereux Early Childhood Assessment (DECA). Please see the hypothesized correlations below.

1. Caregiver Emotion-focused Behaviors with Child
    1. NICHD total sensitivity was expected to negatively correlate with DECS Emotion Dismissing (DECS-ED) and negative emotional valence talk (DECS-NEGVAL).
    2. NICHD total sensitivity was expected to positively correlate with DECS Emotion Validation (DECS-EV), DECS Emotion Identification (DECS-EI), DECS

Composite Adaptive Direct Emotion-focused Practices (DECS-ADEP), Adaptive Emotion-focused Practices (DECS-AEP), and positive emotional valence talk (DECS-POSVAL).

2. Caregiver Emotion Regulation Skills
    1. DERS Nonacceptance of Emotional Responses (DERS-NONACCEPT) will positively associate with DECS Emotion Dismissing (DECS-ED).
    2. DERS Lack of Emotional Awareness (DERS-AWARE) will negatively associate with DECS Emotion Modeling (DECS-EM), DECS Emotion Modeling with Toys (DECS-EMT), and DECS Composite Adaptive Indirect Emotion-focused Practices (DECS-AIEP).
    3. DERS Lack of Emotional Clarity (DERS-CLARITY) will negative associate with DECS Emotion Validation (DECS-EV), DECS Emotion Identification (DECS-EI), and DECS Composite Adaptive Direct Emotion-focused Practices (DECS-ADEP).
    4. A composite score combining DERS Lack of Emotional Awareness and Clarity (latent DERS-AC) will negatively associate DECS Total Scores (DECS-TS) and DECS Adaptive Emotion-focused Practices (i.e., DECS-ADEP and DECS-AIEP composite variable).
    5. A total composite score across each of the six subscales of the DERS (DERS-TS) will positively associate with a total composite score of negative emotional valence talk (DECS-NEGVAL); however, DERS-TS will negatively correlate with a total composite score of positive emotional valence talk (DECS-POSVAL).
3. Child Emotion Regulation

1. DPICS Child Whine/Yell scores will negatively associate with a total composite score of positive emotional valence talk (DECS-POSVAL).
2. DECA Self-Regulation (DECA-SR) scale will negatively associate with a total composite score of negative emotional valence talk (DECS-NEGVAL); although, DECA-SR will positively associate with positive emotional valence talk (DECS-POSVAL).
3. CBCL Emotion Dysregulation Profile (CBCL-DP) subscale scores will negatively associate with a total composite score of positive emotional valence talk (DECS-POSVAL).

Discriminant Validity

Discriminant validity is the degree to which test scores are not associated with scores of unrelated constructs.

1. CBCL-DP will not demonstrate a significant positive association with a total composite score of negative emotional valence talk (DECS-NEGVAL).
2. DPICS Child Whine/Yell scores will not demonstrate a significant positive association with a total composite score of negative emotional valence talk (DECS-NEGVAL).
3. CBCL-DP, DPICS Child Whine/Yell, and DECA-SR will not demonstrate a significant association with DECS Emotion Modeling (DECS-EM), DECS Emotion Modeling with Toys (DECS-EMT), and DECS Composite Adaptive Indirect Emotion-focused Practices (DECS-AIEP).

Concurrent Validity

Exploratory treatment outcome analyses were run on individual DECS codes and composites (e.g., adaptive, emotion dismissing, and positive emotional valence) to detect

differences in treatments across timepoints. To demonstrate concurrent validity, participants in the PCIT-T group were expected to demonstrate, from pre- to post-treatment, increases in adaptive emotion-focused DECS codes and composites (e.g., AEP, ADEP, and EI), decreases in emotion dismissing talk, and increases in positive valance emotion talk. Friedman tests and post hoc Wilcoxon tests were used to examine changes on DECS behaviors across treatment.

Method

Sample Characteristics

Ninety toddlers in the study ranged in age from 14 to 28 months (M = 19.47, SD = 3.27), with the most assigned female at birth (52.4%). Most children in the sample did not have a diagnosis of autism spectrum disorder (84.6%). Please see additional descriptive statistics on toddler participants in Table 3. Mothers in the sample averaged 32.7 years of age (SD = 5.6), and most were Caucasian (47.8%) followed by Asian (17.4%), Middle Eastern (11.6%), European (8.7%), Aboriginal or Torres Strait Islander (4.3%), or Hispanic (4.3%). Fathers averaged 35.0 years of age (SD = 6.5), with most identified as Caucasian (46.9%), Asian (17.2%), Middle Eastern (15.6%), or European (10.9%). Most families were married (65.4%) and the majority of mothers and fathers had either a technical and further education qualification (TAFE) or university education. Most caregivers reported a household size of three (39.1%); almost three-fourths of the sample (74.3%) reported an annual household income greater than or equal to 50,000 AUD. Over a quarter of the sample (25.6%) reported an annual household income less than 50,000 AUD; however, over half of Australians (53%) had a household income range less than about 52,000 AUD between 2019 and 2020 (Australian Bureau of Statistics, 2022). Although less than a tenth of Australians (8.4%) had an income over 104,000 AUD (Australian Bureau of Statistics, 2022), over half of participants in the sample (53.8%) reported a household

income at or above 101,000 AUD. Therefore, the current sample has an overrepresentation of higher SES families compared to the general Australian population. The occupation of most mothers in the sample were unemployed or stay at home mothers (SAHM; 32.4%), professionals (27%), or community/personal service workers (14.9%). The most frequent languages spoken at home include English (78.5%), Arabic or Arabic/English (7.6%), Australian (2.5%), and Spanish (2.5%). Of the 34 households that endorsed speaking another language in the home (37.4%), there were 21 possible combinations of second (or more) languages spoken in the home: Arabic (*n* = 1), Arabic and English (*n* = 1), Assyrian (*n* = 1), Cantonese (*n* = 2), Chinese (*n* = 1), English (*n* = 9), French (*n* = 1), Greek (*n* = 2), Halia (*n* = 1), Hindi (*n* = 1), Hungarian and Slovak (*n* = 1), Maltese (*n* = 1), Mandarin and Urdu (*n* = 1), Polish (*n* = 1), Russian (*n* = 1), Spanish (*n* = 2), Spanish and Maltese (*n* = 1), Swahili (*n* = 1), Turkish (*n* = 1), Urdu (*n* = 1), and Vietnamese (*n* = 3). Please see tables 3, 4, and 5 for more information about toddlers, caregivers, and families in the study.

Procedure

The proposed study utilized collected data from a randomized controlled trial comparing the efficacy of PCIT-T, COS-P, and waitlist controls in the treatment of disruptive behaviors in toddlers; participants were enrolled in this larger study funded by the University of New South Wales (ACTRN12618001554257; *The Karitane 'My Toddler and Me' study*; PI: Kolhoff). Participants included individuals enrolled and randomized to one of the three treatment groups (i.e., PCIT-T, COS-P, and WLC). The treatment of interest for the present study was PCIT-T, since concurrent validity in the PCIT-T group over time was investigated. Participants enrolled in the study were scheduled to received assessments at three timepoints: baseline, post-treatment (i.e., 8- weeks post-baseline), and follow-up (i.e., 4-months post-treatment). The participants

were recruited from NSW, Australia at the Karitane Clinic. Participants who met the eligibility requirements were invited to participate and randomly assigned to a condition (Kohlhoff et al., 2020). The sampling strategy used was randomized assignment to one of three treatment conditions using a restricted block randomization; that is, within each block, 2 participants were randomized to each of the three conditions. For more information on the parent study protocol please see Kohlhoff et al. (2020).

Design

All study procedures for the present retrospective study were approved by West Virginia University's Institutional Review Board. Of the 91 caregiver-toddler dyads enrolled in the study, 90 were randomized to either PCIT-T, COS-P, or waitlist control groups. Across all participants and groups, 176 videos were transcribed and coded using the DECS. For more information about study flow please see the CONSORT diagram (see Figure 1).

Measures

Noncopyrighted measures used in the proposed study are included in Appendix C: "Study Measures."

Primary Measure of Interest

Dyadic Emotion Coding System

The DECS is a behavioral observation measure under psychometric investigation in the present study. The coding system is comprised of 35 codes in total (e.g., EI-P-3, ENOS-N-2, and EV-P-1), comprised of (1) caregiver emotion-focused practices, (2) emotional talk valence, and (3) emotion talk intensity as outlined in detail in the introduction. For quick reference of the DECS emotion-focused seriation notation, please refer to Figure 2. The DECS was used to code taped observational parent-child videos that included six sequential tasks (Kohlhoff, Cibralic,

Wallace, et al., 2020): Warm-up, Child-led Play, Frustration Situation, Toy Reunion, Clean-up, and Love You. The first five of the sequential tasks were approximately 4-minute episodes; however, the final task (i.e., Love You) was on a 2-minute episode. The DECS was coded across all of the six standardized tasks. These observations were conducted at pre-treatment, post-treatment, and follow-up. First, the Warm-up task instructs the parent to play with their child as they normally would. Second, the Child-led Play task instructs the parent to tell their child to choose any preferred play activity and follow along with their child. Third, the Frustration task (i.e., Toy Removal) the parent informs the child the toys will be removed, a provider quickly removes the toys from the room, and the parent is told to manage their child as they normally would. Fourth, the Toy Reunion (i.e., Child-led Play 2) involves the provider returning the toys and the parent letting their child choose any preferred play activity and following along with the child. Fifth, the Clean-up task constitutes the provider telling the parent to let their child know it is now time to clean-up the toys. During this task, parents are informed to get their child to clean-up as many toys as they can on their own. Sixth, the Love You tasks include instructions for parents to look their child in the eyes and show their child in whatever way feels most natural that they love them. These observational tasks were completed in a clinic setting where instructions were given to parents from behind a one-way mirror through a wireless headset and microphone.

Secondary Measures

Demographic Information Form

Basic demographic information for caregivers and children were collected utilizing the caregiver and toddler demographic forms. Demographic information for caregivers within the

form contained items like race/ethnicity, gender, age, level of education, employment, and household income.

Child Behavior Checklist

The Child Behavior Checklist for Ages 1.5-5 (CBCL; Achenbach & Rescorla, 2001) is a caregiver-report measure of various internalizing and externalizing behaviors in young children. Caregivers filled out 99 problem items scored on the following syndrome scales: Emotionally Reactive, Anxious/Depressed, Somatic Complaints, Withdrawn, Attention Problems, Aggressive Behavior, and Sleep Problems. The measure also includes DSM-oriented scales: Affective Problems, Anxiety, Problems, Pervasive Developmental Problems, Attention Deficit/Hyperactivity Problems, Stress Problems, Autism Spectrum Problems, and Oppositional Defiant Problems. Caregivers identified how true a statement was in describing their child over the past two months as not true, somewhat or sometimes true, or very true or often true. The CBCL demonstrated good test-retest reliability ($r = 0.68$ to $r = 0.92$) and adequate cross-informant agreement in other studies ($r = 0.61$; Achenbach & Rescorla, 2001). Kariuki et al. (2016) demonstrated internal consistency at $\alpha = 0.95$.

There are three major subscales assessed by the CBCL: Internalizing, Externalizing, and Total Problems. Many studies using the CBCL have demonstrated evidence of strong psychometric properties (de la Osa et al., 2016; Ivanova et al., 2007; Kariuki, et al., 2016; Kristensen et al., 2010; Tan et al., 2007). For the present study, a CBCL Dysregulation Profile (CBCL-DP) will be used to identify toddlers with elevations on the Anxious/Depressed, Attention Problems, and Aggressive Behavior scales as described by Geeraerts et al. (2015). Importantly, the CBCL-DP has been shown to be associated with child emotional and behavioral dysregulation and maladaptive parenting practices (Kim et al., 2012).

Difficulties in Emotion Regulation Scale

Difficulties in Emotion Regulation Scale (DERS; Gratz et al., 2004) is a 36-item self-report measure of emotion dysregulation with higher scores indicating greater emotion dysregulation. Additionally, it produces six subscales: (1) nonacceptance of emotional responses, (2) Difficulties engaging in goal directed behavior, (3) Impulse control difficulties, (4) Lack of emotional awareness, (5) Limited access to emotion regulation strategies, and (6) Lack of emotional clarity.

Devereux Early Childhood Assessments

The Devereux Early Childhood Assessment (DECA; LeBuffe et al., 2009; Powell et al., 2007) is a parent-report instrument designed to measure the social, emotion, and behavioral concerns present in infants (DECA-I; i.e., 1-18 months) and toddlers (DECA-T; i.e., 18-36 months). The DECA-T contains 36 times which load onto three protective factor scales: (1) initiative, (2) self-control, and (3) attachment; additionally, it includes areas of behavioral concern, including aggression, attention, withdrawal/depression, and emotional control. The DECA-I includes 33 items which load onto two scales (i.e., initiative and attachment/relationships). Both age forms of the DECA have demonstrated good test-retest reliability in other studies (Powell et al., 2007). Based upon the participants age, either a DECA-I or DECA-T was administered.

Dyadic Parent-Child Interaction Coding System, Fourth Edition

The Dyadic Parent-Child Interaction Coding System, Fourth Edition (DPICS-IV; Eyberg et al., 2013) is an observational coding system designed to measure dyadic verbal interactions and responses between caregivers and their children. Using audio and visual footage, coders transcribed the interactions and coded behavioral categories such as, neutral talk, direct

command, labeled praise, and child compliance. All verbalizations are coded into discrete categories which makes the DPICS-IV an exhaustive coding system. For the proposed study, DPICS-IV was used to measure parent's use of positive parenting behaviors, negative parenting behaviors, child compliance, and child behaviors (e.g., child whine/yell).

The DPICS-IV is a well-established and validated measure used to predict child cooperative behavior based on parent behaviors (Eyberg et al., 2013; Robinson & Eyberg, 1981). In both live settings and video recorded observations, the DPICS categories have been shown to be reliable and valid (Eyberg et al., 2013). Robinson and Eyberg (1981) found high average inter-rater reliability for child (0.92) and parent behaviors (0.91). One recent study by Shanley and Niec (2011) reported kappa value ranges for parent categories (0.80 to 1.00) and child categories (0.80 to 0.98). Eyberg, et al. (2013) also reported the following DPICS kappa reliabilities: negative talk (0.69), direct command (0.82), indirect command (0.66), labeled praise (0.61), unlabeled praise (0.81), information question (0.85), descriptive question (0.81), reflection (0.59), behavior description (0.60), neutral talk (0.70), compliance (0.64), noncompliance (0.54), and no opportunity for compliance (0.54). Moreover, mothers engaged in individual PCIT have shown significant improvements in parenting behavior, from CDI 1 to PDI 7; specifically, reductions in "don't" behaviors (i.e., M = 22.78 to 10.00) and increases in "do" behaviors (i.e., M = 15.70 to 24.88; Niec et al., 2016).

NICHD Sensitivity Scales

The NICHD Study of Early Child Care and Youth Development Sensitivity Scales (NICHD total sensitivity; "NICHD Early Child Care Research Network", 2006) was coded using the 20-minute caregiver-toddler interactions at each timepoint (i.e., baseline, post-treatment, and follow-up) as a measure of maternal sensitivity. The higher NICHD total sensitivity scores indicate the variable

is more characteristic of the caregiver. Overall, the coding system has demonstrated strong reliability coefficients (McElwain & Booth-LaForce, 2006; "NICHD Early Care Research Network", 2006). The NICHD total sensitivity scores were coded by individuals in the parent study; specifically, these individuals did not code any DECS videos and received no training in the DECS. The scores from this measure were derived from the same observational parent-child videos that the DECS used (i.e., the six sequential and standardized tasks).

Data Analysis

All analyses were conducted in IBM SPSS Statistics (Version 28) and Tableau (2022). Preliminary analyses examined missing responses in the data and determined if all assumptions of the tests were met. Importantly, the DECS utilized count data derived from descriptive qualitative data that is dependent on the source (i.e., caregiver participants) and method (i.e., DECS standardized instructions), and it is contextually bound to the intervention setting. Specifically, DECS codes are ordinal variables because the counts are in rank order, however equal intervals between values cannot be assumed. Because count variables are uniquely distributed in a way that does not follow a normal distribution, it becomes extremely important to select the most appropriate model for the given data to best describe the population data with as little bias as possible (Hilbe, 2014). Thus, the present study used statistical methods aimed at analyzing data which does not follow a normal distribution. When appropriate, this included nonparametric analyses, Poisson modeling, and negative binomial modeling when necessary, after testing model assumptions and dispersion (Hilbe, 2014). With respect to each analysis, the optimal model was selected for the data.

Python 3.0 (Van Rossum & Drake, 2009) programming language was used to extract DECS emotion words from coded video transcripts (n = 176) and conduct qualitative data

analyses on these words. Specifically, string texts associated with DECS codes were transformed into fixed-length vectors as a natural language processing technique for modeling parent emotion talk. This was conducted on all video transcripts. All unique words associated with DECS codes were summed across files, and after the principal investigator extracted emotion words from this file. Data visualizations for DECS codes were conducted in Tableau (2022).

Results

Missing Data

Item-level missing analyses were conducted on the CBCL for all participants recruited and enrolled in the study (N = 91). For the CBCL, Little's MCAR test was not significant (p = 1.000) suggesting the data were missing completely at random. Seven cases were identified to be missing on all 99 CBCL items. Data for these seven participants were excluded from subsequent analyses using casewise deletion. Series mean replacement was utilized to handle item-level missingness on CBCL items for all other participants (n = 84). Thus, a subsample of pre-treatment sample contains CBCL total, composite, and syndrome scale scores (n = 84).

A non-significant Little's MCAR test, X^2 (204) = 0.322, p = 1.00, revealed that the pre-treatment data were likely also missing completely at random. Overall, only 5.50% of data were missing. With respect to cases, 72 (79.12%) were complete. The highest measure with missingness includes the NICHD total sensitivity at 11 variables missing (12.1%), followed by CBCL scores (i.e., total, internalizing, externalizing, dysregulation profile, and syndrome scales) and DERS scores (i.e., composites) at 7 variables missing (7.7%). The remaining data had missingness below 5 percent (e.g., DECA T-scores were n = 4; 4.4% missing). Pairwise deletion was used when appropriate in subsequent analyses. However, casewise deletion was used for two participants were missing all tasks videos and pre-treatment survey data (i.e., 9 and 50); thus,

they were systematically removed from subsequent analyses (reducing the sample to 89 participants). Moreover, one participant was missing four of six tasks (i.e., frustration, child-led play/toy return, clean-up, and love you tasks) for the DPICS and DECS assessments; thus, the behavioral observation (i.e., DPICS and DECS) data were excluded from subsequent analyses. This resulted in a final sample of n = 89 participants included in DECS analyses.

Aim 1: DECS Descriptive Data

Tableau (2022) software was used to create data visualizations to further explore and understand the DECS. Across participants at baseline (n = 88), the most often used emotion-focused practices include emotion identification (n = 1,221), EM (n = 490), ENOS (n = 233); however, the least often used emotion-focused practice include emotion dismissing (n = 122), EMT (n = 55), and emotion validation (n = 13). DECS codes tended to be level three (n = 1,083) followed by level 2 (n = 542) and level 1 (n = 507). With respect to emotion valence, most DECS codes at pre-treatment tended to have a positive valence (n = 1,639) rather than negative valence (n = 492). Detailed descriptive data were produced for participants by DECS codes across timepoints using Tableau (2022; see table 6). Moreover, a Word Cloud (or Tag Cloud) data visualization was generated using Tableau (2022) to show the relative frequency of individual three-part DECS variables across all timepoints, groups, and participants (n = 88) in the study (see figure 3). Font size represents the number of times that DECS code has been coded in the dataset, with more frequently used DECS codes displayed with increasingly larger font size. For instance, the most frequently used DECS codes in the dataset is emotion identification, positive valance, level three (EI-P-3).

The most frequently used emotion words, including similar variations of the emotion word, used by caregivers include “thank” (n = 884), “love” (n = 551), “cuddle” (n = 474),

"gentle" (*n* = 327), and "kiss" (*n* = 242). For more information on emotion words captured by the DECS, please see table 7; the frequency of the associated emotion words separated by valence is also included in this table. Since emotion words should either be coded as positive or negative valence, the table reveals some discrepancies in reliable coding by word, which may prove useful for refining future training materials to enhance DECS reliability. Data visualization for all DECS emotion words was generated using Packed Bubble Chart in Tableau (2022), where the larger the size of the bubbles the more frequently used the DEC emotion word (see Tableau figure 4). Furthermore, Packed Bubble Charts were also generated separately for negative and positive valence emotion words (see figure 5). The figure demonstrates that positive valence emotion words used at a higher frequency than negative valence emotion words. Finally, a Treemap was also created to display the data in nested rectangles or part-to-whole relationships in the data (see figure 6). In this Treemap, the size of the rectangles represents the emotion word frequency (i.e., larger indicates more frequent usage), while the color was used as a categorical palette for dimensions. Specifically, green represents positive valence words, while red signifies negative valence words. Only the most prominent values are labeled because effective labeling becomes more difficult as the rectangles get smaller. This visual helps reveal that over a third of DECS emotion words used by caregivers include six, positive valence, words (i.e., thank, love, cuddle, gentle, kiss, and hug). Interestingly, some of the most often used emotion words are localized in the semantically distinct emotion category "love" across multiple levels of categorization (i.e., cuddle, kiss, and hug are level 3 behavioral emotion categories).

Aim 2: Investigate the Reliability of the DECS

The interrater reliability analysis using the kappa statistic was conducted to assess the

consistency among raters across parent-toddler DECS codes. There were 88 videos double-coded and included in subsequent reliability analyses. All coders were blinded to treatment group and timepoint. Qualitative descriptors of kappa statistics are also included below for clarity (Landis & Koch, 1977). For DECS codes, overall agreement was almost perfect between two coders, $\kappa = .905$ (95% CI: 884, .927), $p = 000$. The majority of DECS codes had almost perfect agreement (i.e., at or above .81): ED-N-1, ED-N-3, ED-P-1, ED-P-2, EI, EM-N-1, EM-N-2, EM-P-1, EM-P-3, EMT-N-2, EMT-P-3, ENOS-N-2, ENOS-N-3, ENOS-P, EV-N-1, and EV-P-3. Remaining DECS codes had substantial agreement (i.e., .61 to .80), except for EV-N-2 (i.e., poor reliability) and EM-P-2 (i.e., moderate reliability).

To evaluate the temporal stability of DECS training, seven undergraduate coders underwent a standardized training that involved two 60-minute oral presentations with live coding practice, 5 DECS quiz coding skills check-outs, and a DECS checkout transcript (see figure 7). To complete training in the DECS, coders needed to complete all quizzes with a score at or above 80% and obtain substantial reliability as evidenced by overall kappas above .80 on the DECS checkout transcript. All participants passed these criteria between 01/31/2022 and 02/09/22. Impressively, all seven coders obtained almost perfect reliability (i.e., κ above .81) on their first attempts. After achieving DECS coding certification, all coders did not engage in any DECS coding for on average 8 weeks (i.e., between 51 and 63 days). At the end of this break from DECS coding, coders were provided a transcript to re-code. The primary investigator kept coders blinded to this test-retest procedure.

Across all seven coders, overall agreement was substantial when coders recoded a transcript after a 7 to 9-week delay, with $\kappa = .783$ (95% CI: .733, .833), $p = .000$. The majority of DECS codes had almost perfect agreement or substantial agreement for coders at retest (i.e., κ at

or above .61): ED-N-3, EV-P-1, EI-N-2, EM-P-1, EI-P-3, EI-N-1, EV-P-2, EM-P-3, and EI-P-2. There was moderate agreement for ENOS-P-2 (i.e., $\kappa = .436$), while EV-N-1 and EI-P-1 had fair agreement (i.e., κ of .354 and .327, respectively). Coders demonstrated poor agreement on EM-N-1, EM-P-2, ENOS-P-1, and EV-N-2; however, it should be noted that codes with poor agreement occurred at very low frequencies (i.e., $n = 1$ to 4; 0.00% to 0.01% of valid DECS codes). Furthermore, overall kappa statistics were calculated between each coder at retest and the primary investigator to examine coder-drift via interrater reliability with a DECS expert. Five coders had almost perfect overall agreement (i.e., $\kappa = .818$ to .911), while two coders had substantial agreement (i.e., .717 to .756).

Aim 3: Evaluate the Validity of the DECS

Convergent Validity.

Caregiver Emotion-focused Behaviors with Child.

Descriptive statistics for variables of interest were ran (see table 8). Bivariate Pearson and Spearman Rho correlations were run between primary DECS composites and NICHD total sensitivity scores (see table 9). Additionally, the skewness and kurtosis z-scores were calculated to inform appropriate subsequent regressions between DECS composite scores and NICHD total sensitivity. Of note, skewness (i.e., -3.00) and kurtosis z-scores (i.e., 1.77) were in the appropriate range (i.e., <3.2; Kim, 2013) for NICHD total sensitivity scores. Based on preliminary bivariate correlations, subsequent regressions were conducted on NICHD total sensitivity scores and AEP, ADEP, EI, ED, POSVAL, LVL1, and LVL2. Significant positive associations were demonstrated between NICHD total sensitivity and AEP, ADEP, EI, and POSVAL; conversely, significant negative associations were demonstrated between NICHD

total sensitivity and emotion dismissing talk. No significant associations were founded between NICHD total sensitivity and LVL1 or LVL2.

A Poisson regression was run to predict the number of AEP DECS codes based on NICHD total sensitivity scores. The variance-to-mean ratio for AEP was 6.65 and for NICHD total sensitivity was 1.22, indicating potential overdispersion. Additionally, the goodness of fit statistic (i.e., deviance value over df) was 6.009, also indicating overdispersion. Issues with dispersion indicate the assumptions of the Poisson model were not met. Overdispersion can bias parameter estimates and produce false significant relationships; however, underdispersion can mask truly significant relationships. Next, a negative binomial regression was run to predict the number of AEP DECS codes based on NICHD total sensitivity scores. The variance-to-mean ratios were the same as described in the Poisson regression. However, the goodness of fit statistics (i.e., deviance value over df) was 0.387, indicating improved dispersion compared to the Poisson model. The omnibus test was significant (p = .003), indicating good model fit. Moreover, the AIC and BIC were smaller in the negative binomial regression (i.e., AIC = 637.23; BIC = 641.97) compared to the Poisson regression (i.e., AIC = 860.10, BIC = 864.84), indicating improved model fit. Since the exponent of the coefficient is 1.02 (95% CI 1.008 to 1.039), for every one-unit increase in NICHD total sensitivity scores the number of AEP DECS codes increases by 2% (p = .003).

A Poisson regression was run to predict the number of ADEP DECS codes based on NICHD total sensitivity scores. The variance-to-mean ratio for ADEP was 5.90 and for NICHD total sensitivity was 1.22, indicating overdispersion. Additionally, the goodness of fit statistic (i.e., deviance value over df) was 5.50, indicating overdispersion. Issues with dispersion indicate the assumptions of the Poisson model were not met. Next, a negative binomial regression was

run to predict the number of ADEP DECS codes based on NICHD total sensitivity scores. The variance-to-mean ratios were the same as described in the Poisson regression. However, the goodness of fit statistics (i.e., deviance value over df) was 0.438, indicating improved dispersion compared to the Poisson model. Moreover, the AIC and BIC were smaller in the negative binomial regression (i.e., AIC = 580.46; BIC = 585.20) compared to the Poisson regression (i.e., AIC = 761.91, BIC = 766.65), indicating improved model fit. The omnibus test was significant (p = .007), indicating good model fit. Since the exponent of the coefficient is 1.02 (95% CI 1.007 to 1.039), for every one-unit increase in NICHD total sensitivity scores the number of ADEP DECS codes increases by 2% (p = .006).

A Poisson regression was run to predict the number of emotion identification DECS codes based on NICHD total sensitivity scores. The variance-to-mean ratio for emotion identification was 5.83 and for NICHD total sensitivity was 1.22, indicating overdispersion. Additionally, the goodness of fit statistic (i.e., deviance value over df) was 5.42, indicating overdispersion. Issues with dispersion indicate the assumptions of the Poisson model were not met. Next, a negative binomial regression was run to predict the number of emotion identification DECS codes based on NICHD total sensitivity scores. The variance-to-mean ratios were the same as described in the Poisson regression. However, the goodness of fit statistics (i.e., deviance value over df) was 0.435, indicating improved dispersion compared to the Poisson model. Moreover, the AIC and BIC were smaller in the negative binomial regression (i.e., AIC = 578.72; BIC = 583.46) compared to the Poisson regression (i.e., AIC = 755.23, BIC = 759.97), indicating improved model fit. The omnibus test was significant (p = .006), indicating good model fit. Since the exponent of the coefficient is 1.02 (95% CI 1.006 to 1.036), for every one-

unit increase in NICHD total sensitivity scores the number of emotion identification DECS codes increases by 2% (p = .006).

A Poisson regression was run to predict the number of emotion dismissing talk based on NICHD total sensitivity scores. The variance-to-mean ratio for emotion dismissing talk was 4.69 and for NICHD total sensitivity was 1.22, indicating overdispersion. Additionally, the goodness of fit statistic (i.e., deviance value over df) was 2.65, indicating overdispersion. Issues with dispersion indicate the assumptions of the Poisson model were not met. Next, a negative binomial regression was run to predict the number of emotion dismissing talk DECS codes based on NICHD total sensitivity scores. The variance-to-mean ratios were the same as described in the Poisson regression. However, the goodness of fit statistics (i.e., deviance value over df) was 1.296, indicating improved dispersion compared to the Poisson model. Moreover, the AIC and BIC were slightly smaller in the negative binomial regression (i.e., AIC = 218.08; BIC = 222.82) compared to the Poisson regression (i.e., AIC = 284.95, BIC = 289.68), indicating improved model fit. The omnibus test was significant (p < 0.980), indicating good model fit. Since the exponent of the coefficient is 0.947 (95% CI 0.914 to 1.036), for every one-unit increase in NICHD total sensitivity scores the number of emotion dismissing talk decreases by approximately 5% (p = .002).

A negative binomial regression was run to predict the number of POSVAL DECS codes based on NICHD total sensitivity scores. The variance-to-mean ratio for POSVAL was 8.80, indicating overdispersion. However, the goodness of fit statistic (i.e., deviance value over df) was 0.60. Moreover, the omnibus test was significant (p = .043), indicating good model fit. The model was also found to be significant (p = .039). The exponent of the coefficient is 1.02 (95%

CI 1.001 to 1.040), for every one-unit increase in square-root of NICHD total sensitivity scores the number of POSVAL DECS codes increases by approximately 2% (p = .039).

A negative binomial regression was run to predict the number of LVL1 DECS codes based on NICHD total sensitivity scores. The variance-to-mean ratio for LVL1 was 9.23, indicating overdispersion. Additionally, the goodness of fit statistic (i.e., deviance value over df) was 1.11, indicating slight overdispersion. The omnibus test was not significant (p = .208), indicating poor model fit. The model was also found to be not significant (p = .208).

A negative binomial regression was run to predict the number of LVL2 DECS codes based on NICHD total sensitivity scores. The variance-to-mean ratio for LVL2 was 6.43, indicating overdispersion. Additionally, the goodness of fit statistic (i.e., deviance value over df) was 0.824. The omnibus test was not significant (p = .179), indicating poor model fit. The model was also found to be not significant (p = .173).

Caregiver Emotion Regulation Skills.

Descriptive statistics for variables of interest were ran (see table 10). Bivariate Pearson and Spearman Rho correlations were run between hypothesized DECS variables and DERS scores (see table 11). Additionally, the skewness and kurtosis z-scores were calculated to inform appropriate subsequent regressions between variables. Of note, skewness and/or kurtosis z-scores were beyond the acceptable range for multiple DECS variables (i.e., ED, EM, EMT, NEGVAL, POSVAL, and AIEP; (i.e., >3.2; Kim, 2013). Additionally, DERS-NONACCEPT, DERS-CLARITY, and DERS-TS contained skewness z-scores beyond the acceptable range. Based on insignificant preliminary bivariate correlations, no subsequent regressions were conducted on the hypothesized variables and DERS scores. However, exploratory analyses were run and significant associations were reported (see table 11). Subsequent regressions were conducted on

these promising exploratory associations; square root transformations of DER-NONACCEPT and DERS-CLARITY were used to reduce skewness.

A Poisson regression was run to predict the number of total DECS scores (DECS-TS) based on square root transformed DERS-NONACCEPT scores. The variance-to-mean ratio was 7.87 for DECS-TS and 0.17 for DERS-NONACCEPT, indicating overdispersion for DECS-TS and underdispersion for DERS-NONACCEPT. Additionally, the goodness of fit statistic (i.e., deviance value over df) was 7.55, indicating overdispersion. Issues with dispersion indicate the assumptions of the Poisson model were not met. Next, a negative binomial regression was run to predict DECS-TS on DERS-NONACCEPT scores. The variance-to-mean ratios were the same as described in the Poisson regression. However, the goodness of fit statistics (i.e., deviance value over df) was 0.37, indicating improved dispersion compared to the Poisson model. Moreover, the AIC and BIC were smaller in the negative binomial regression (i.e., AIC = 699.36; BIC = 704.19) compared to the Poisson regression (i.e., AIC = 1015.77, BIC = 1020.60), indicating improved model fit. The omnibus test was significant (p = .049), indicating good model fit. Since the exponent of the coefficient is 0.84 (95% CI 0.70 to 1.00), for every one-unit increase in square-root of DERS-NONACCEPT scores the number of DECS-TS codes decreases by 16% (p = .046).

A Poisson regression was run to predict the number of POSVAL codes based on square root transformed DERS-NONACCEPT scores. The variance-to-mean ratio was 7.87 for POSVAL and 2.48 for DERS-NONACCEPT, indicating overdispersion. Additionally, the goodness of fit statistic (i.e., deviance value over df) was 7.57, indicating overdispersion. Issues with dispersion indicate the assumptions of the Poisson model were not met. Next, a negative binomial regression was run to predict DECS-TS on DERS-NONACCEPT scores. The variance-

to-mean ratios were the same as described in the Poisson regression. However, the goodness of fit statistics was 0.53, indicating improved dispersion compared to the Poisson model. Moreover, the AIC and BIC were smaller in the negative binomial regression (i.e., AIC = 653.54; BIC = 658.38) compared to the Poisson regression (i.e., AIC = 986.62, BIC = 991.46), indicating improved model fit. The omnibus test was significant (p = .025), indicating good model fit. Since the exponent of the coefficient is 0.97 (95% CI 0.94 to 1.00), for every one-unit increase in square-root of DERS-NONACCEPT scores the number of POSVAL codes decreases by 3% (p = .043).

A Poisson regression was run to predict the number of EM codes based on square root transformed DERS-CLARITY scores. The model contained poor fit as evidenced by overdispersion for EM (i.e., 4.47 variance-to-mean ratio), under dispersion for DERS-CLARITY (i.e., 0.11 variance-to-mean ratio), and a goodness of fit statistic of 4.58. Due to these concerns, a negative binomial regression was run next. The goodness of fit statistic (i.e., deviance value over df) was 0.60. The omnibus test was not significant (p = .161), indicating poor model fit. The model was also found to be not significant (p = .166).

Child Emotion Regulation.

Descriptive statistics for variables of interest were ran (see table 12). Bivariate Pearson and Spearman Rho correlations were run between hypothesized DECS variables and identified child self-regulation measures, including DPICS codes, DECA T-scores, CBCL composite scores (see table 13). Additionally, the skewness and kurtosis z-scores were calculated to inform whether or not to conduct subsequent regressions between variables. Of note, skewness and/or kurtosis z-scores were beyond the acceptable range for the DPICS, DECS, CBCL-IP, and DECA-PROTECTIVE (i.e., >3.2; Kim, 2013). Based on insignificant preliminary bivariate

correlations, subsequent analyses include POSVAL regressed on DPICS Whine/Yell, DPICS Yell, and DECA-SR.

A Poisson regression was run to predict the number of DPICS Yell scores based on POSVAL scores. The variance-to-mean ratio was 8.25 for POSVAL and 11.28 for DPICS Yell, indicating overdispersion. Additionally, the goodness of fit statistic (i.e., deviance value over df) was 8.47, indicating overdispersion. Issues with dispersion indicate the assumptions of the Poisson model were not met. Next, a negative binomial regression was run to predict DPICS Yell on POSVAL scores. The variance-to-mean ratios were the same as described in the Poisson regression. However, the goodness of fit statistics was 1.74, indicating improved dispersion compared to the Poisson model. Moreover, the AIC and BIC were smaller in the negative binomial regression (i.e., AIC = 487.52; BIC = 492.47) compared to the Poisson regression (i.e., AIC = 945.58, BIC = 950.536), indicating improved model fit. The omnibus test was significant (p = .045), indicating good model fit. Since the exponent of the coefficient is 0.98 (95% CI 0.95 to 1.00), for every one-unit increase in POSVAL scores the number of DPICS Yell decreases by 2% (p = .040).

A negative binomial regression was run to predict the number of DPICS Whine/Yell scores based on POSVAL scores. The variance-to-mean ratio for DPICS Whine/Yell was 10.95, indicating overdispersion. The goodness of fit statistic (i.e., deviance value over df) was 1.28, indicating slight overdispersion. The omnibus test was not significant (p = .118), indicating poor model fit. The model was also found to be not significant (p = .110).

A negative binomial regression was run to predict the number of POSVAL scores based on DECA-SR scores. The variance-to-mean ratio for DECA-SR was 7.53, indicating overdispersion. The goodness of fit statistic (i.e., deviance value over df) was 0.49. The omnibus

test was not significant (p = .252), indicating poor model fit. The model was also found to be not significant (p = .254).

Discriminant Validity.

The degree to which DECS scores were not associated with scores of variables theoretically distinct and unrelated constructs. Nearly all variables demonstrated issues with skewness as evidenced by skewness z-scores over 3.2, with the exception of DECA-SR and CBCL-DP. Variance-to-mean ratios for all variables were greater than 1, indicating overdispersion. For more information on variables of interest, see Table 14. Bivariate Pearson and Spearman Rho correlations were run on variables of interest (see Table 15). None of the correlations were found to be significant.

Further regression testing was done to model the count data due to concerns regarding overdispersion. As all variables demonstrated some degree of overdispersion, negative binomial regressions were run on all correlated variables identified in Table 15. The omnibus test was not significant for all regressions. Moreover, all of the negative binomial regressions were not significant (see Table 15).

Concurrent Validity.

To demonstrate concurrent validity, participants in the PCIT-T group were expected to demonstrate, from pre- to post-treatment, increases in adaptive emotion-focused DECS composites and codes, decreases in DECS-ED, and increases in positive emotional expressiveness (i.e., DECS-POSVAL). The sample run in subsequent analyses included only PCIT-T treatment completers (n = 18); specifically, individuals who completed pre, post, and follow-up timepoints. Results were not significant for Freidman Tests performed on participants in the PCIT-T group (n = 18) across pre-(PRE), post-(POST), and follow-up (FU) timepoints for

emotion dismissing, emotion modeling, emotion modeling with toys, positive valence emotion talk, negative valence emotion talk, or indirect adaptive emotion-focused talk.

There was a statistically significant difference in AEP talk depending on timepoint, $\chi^2(2) = 9.029$, $p = .011$. Post hoc analysis with Wilcoxon signed-rank tests was conducted. Median (IQR) AEP scores for PRE, POST, and FU timepoints were 19.00 (14.75 to 29.00), 30.00 (22.75 to 48.25), 26.50 (15.00 to 35.25), respectively. There were significant differences between PRE and POST AEP scores (Z = -2.936, $p = .003$). There was also a significant difference between POST and FU AEP scores (Z = -2.013, $p = .044$). However, there was no significant difference between PRE and FU AEP scores (Z = -1.215, $p = .224$).

The was also a statistically significant difference in ADEP talk depending on timepoint, $\chi^2(2) = 8.899$, $p = .012$. Post hoc analysis with Wilcoxon signed-rank tests was conducted. Median (IQR) ADEP scores for PRE, POST, and FU timepoints were 12.00 (8.75 to 23.00), 23.00 (18.75 to 39.25), 21.00 (9.00 to 29.25), respectively. There were significant differences between PRE and POST ADEP scores (Z = -2.96, $p = .003$). There was no significant difference between POST and FU ADEP scores (Z = -1.92, $p = .055$). There also was no significant difference between PRE and FU ADEP scores (Z = -1.22, $p = .224$).

The was a statistically significant difference in emotion validation talk depending on timepoint, $\chi^2(2) = 7.563$, $p = .023$. Post hoc analysis with Wilcoxon signed-rank tests was conducted. Median (IQR) emotion validation talk for PRE, POST, and FU timepoints were 0.00 (0.00 to 0.00), 0.50 (0.00 to 3.00), 0.00 (0.00 to 0.25), respectively. There were significant differences between PRE and POST emotion validation talk (Z = -2.55, $p = .011$). There was no significant difference between POST and FU emotion validation talk (Z = -1.07, $p = .285$). There

also was no significant difference between PRE and FU emotion validation talk (Z = -1.63, p = .102).

Another statistically significant difference was found in emotion identification talk depending on timepoint, $\chi^2(2) = 8.899$, p = .012. Post hoc analysis with Wilcoxon signed-rank tests was conducted. Median (IQR) emotion identification scores for PRE, POST, and FU timepoints were 12.00 (8.75 to 23.00), 20.50 (17.00 to 37.00), 20.50 (9.00 to 28.00), respectively. There were significant differences between PRE and POST emotion identification scores (Z = -2.62, p = .009). There was no significant difference between POST and FU emotion identification scores (Z = -1.80, p = .072). There also was no significant difference between PRE and FU emotion identification scores (Z = -1.04, p = .301).

Discussion

The proposed study was to investigate the validity, reliability, and clinical utility of the DECS in a sample of caregivers and their young children. This study was the first to examine the psychometric properties of this novel caregiver-toddler emotion coding system. This study had three primary aims: (1) provide extensive descriptive data on the DECS using Tableau (2022) for data visualizations (2) evaluate the interrater reliability of DECS codes and temporal stability of the DECS training using test-retest reliability, and (3) assess the convergent, discriminant, and concurrent validity of the DECS. Results from this study have important implications for emotion coding and coaching in PCIT-T as well as the proliferation of the next generation of PCIT programs targeting emotion coaching for children with internalizing difficulties or concerns. The DECS may also benefit the broader area of emotion-focused parenting interventions due to the pressing need for a psychometrically validated and standardized behavioral observation coding (Zinsser et al., 2021).

DECS Descriptive Data

The first aim of this study was to provide detailed descriptive data on the DECS. Of all DECS emotion-focused practices (*N* = 2,134), caregivers most often used emotion identification (57.2%), followed by emotion modeling (23.0%) and ENOS (10.9%); however, caregivers used the explicit validation and strong positive reinforcement of toddler emotions through emotion validation talk the least often, or 0.6% of the time the used any emotion-focused practice. In fact, caregivers utilized emotion dismissing talk 9.5 times more often than emotion validation talk. This contrast highlights an opportunity for PCIT-T to overtrain adaptive emotion-focused parenting practices like emotion validation talk, as well as reduce the use of maladaptive emotion-focused practices like emotion dismissing talk. Given that this study includes such a low frequency of emotion validation talk, it is important to consider the ways in which this may influence subsequent validity analyses. It may be that the definition of emotion validation talk is too stringent to capture the variability in validating statements caregivers use with toddlers; however, it may also be due to emotion validation talk having the lowest base rate. Relatedly, generating developmentally appropriate and concise emotion validation statements may be a skill that requires explicit training. Consider the difference between “I love your cuddles,” “good calm,” and “it’s okay you’re sad” to a more longwinded and less developmentally appropriate emotion validation talk, such as “you’re allowed to feel annoyed and frustrated that they took all the toys away.” It is also possible that other variables influence this finding including the demographics of the sample or standardized DECS tasks. For instance, there may be a need for a standardized DECS task that pulls for caregivers to use more emotion validation talk. Alternatively, other tasks may not be eliciting enough variability in child emotion capture situations necessary for emotion validation talk (e.g., the child frustration task is not frustrating

to the child). For instance, caregivers' second most used emotion word was love and related variations (n = 551), which was used about 3.2 times more often than mad, angry, and upset and related variations. Since the love you task contains a specific prompt to convey their love for their child, it would be important for future research to explore the influence of DECS tasks and instructions on emotion-focused parenting practices. Beyond psychometric concerns, it may also serve a unique clinical purpose to identify specific prompts and situations to engage in emotion coaching and overtrain certain skills (i.e., tailor treatment for patients).

Although caregivers used emotion identification the most often, this study also found that a third of all emotion vocabulary was restricted to the words thank, love, cuddle, gentle, kiss, and hug. Of those six words most identified emotions, four (i.e., love, cuddle, kiss, and hug) map onto one of the twenty-eight semantically distinct descriptors for naturalistic emotion expressions identified by Cowen and Keltner (2020). This finding highlights the opportunity to engage caregivers in emotion coaching that aligns better with the components of parental meta-emotion philosophy; specifically, the goal of increasing caregiver awareness of low-intensity emotions in themselves and their children (Gottman et al., 1996). From a developmental perspective, caregivers are often driving language and emotion development through modeling emotions, responding, and labeling emotions during this early in life vocabulary spurt in active and interactive ways (Bloom, 1998). The present study also found caregivers used positive valence emotion words about 3.3 times more often than negative valence emotion words. Further research is necessary to explore the balance between attending to positive and negative emotions for the purpose of promoting an optimal environment for toddlers to develop adaptive emotion socialization skills (Halberstadt et al., 2000); for instance, Gottman et al. (1996) also identified a

core component of emotion coaching includes teaching caregivers to view negative child emotions as opportunities for teaching as well as verbally labeling negative affect.

DECS Validity

A second important aim of the study was to establish validity evidence for the DECS. Comparisons between the NICHD sensitivity scales and the DECS was of particular interest because the caregiver sensitivity construct focuses on appropriate responsiveness as judged by effective caregiver responses (Mesman & Emmen, 2013). A maternal sensitivity construct that captures appropriate and effectives parental response to toddler distress should relate to individual and composite DECS codes since the codes are hypothesized to capture specific parenting practices that promote or demote child emotional skill development (Zinsser et al., 2021). Multiple hypothesized correlations and regressions were found to exist between caregiver sensitivity and the DECS. For instance, higher levels of caregiver sensitivity were significantly associated with less emotion dismissing talk. Conversely, higher levels of caregiver sensitivity were significantly associated with more adaptive emotion-focused practices as measured by the DECS; specifically, adaptive emotion-focused talk (i.e., a composite of EV, EI, EM, and EMT), adaptive direct emotion-focused talk (i.e., a composite of EV and EI), emotion identification, and positive valence emotion-focused talk. However, emotion validation and negative valence emotion-focused talk were not significantly related to caregiver sensitivity. The failure to find a possible connection between emotion validation was likely due to the extremely infrequent use of the skill in the present sample. The lack of a relationship between negative valence emotion-focused talk and caregiver sensitivity may be because supportive and appropriate caregiver responses do not preclude negative emotions. Future research should continue explore validity

between the DECS and emotion-focused caregiver responding, skills, and sensitivity; moreover, studies would benefit from testing for method variance (e.g., include self-report measures).

This study failed to find any significant hypothesized relations between caregiver emotion regulation difficulties and the DECS. A limitation of the present study was the reliance on self-report to capture caregiver emotion regulation skill; moreover, caregiver self-reported emotion regulation skills may not accurately reflect a caregiver's behavior. For instance, caregivers may be tempted to respond to questions in socially desirable ways or have poor insight on their emotion regulation skills. Future investigations into the psychometric properties of the DECS should include more measures of caregiver emotion regulation skills as well as method variance (e.g., behavioral observations). Interestingly, exploratory investigations revealed significant associations between caregiver nonacceptance of emotional responses and two DECS variables, total DECS scores and positive valence emotion-focused talk. The nonacceptance of emotion responses subscale on the DERS related to a caregiver's tendency to have a negative secondary or non-accepting reaction to their own distress. While not initially hypothesized, higher levels of caregiver nonacceptance of emotional responses was significantly associated with more overall emotion-focused talk and less positive valence emotion-focused talk. Future investigations on the DECS and caregiver emotion regulation should take an a priori approach to comparing these constructs, however these post hoc explorations do conceptually make sense. That is, the level of caregiver acceptance of emotional responses in themselves likely does influence the use of emotion talk and positive valence emotion talk with their toddlers. For instance, Are and Shaffer (2016) found a significant association between maternal emotion regulation difficulties and positive expressiveness.

Caregiver emotion-focused responding behaviors have also been associated with child emotion regulation (Eisenberg et al., 1998; Snyder et al., 2003; Zinsser et al., 2021). This study found one significant hypothesized relation between child emotion regulation difficulties and the DECS. Specifically, more positive valence emotion-focused talk was significantly associated with less child yelling. This aligns with prior research that demonstrates child adaptive emotion regulation was positively related to positive family expressiveness (Are and Shaffer, 2016). The failure to find a possible connection between other hypothesized child emotion regulation and emotion valance talk may be due to the suggested curvilinear relationship between caregiver emotion valence talk and child emotion regulation in that moderate levels of attenuation to negative emotions relates to the most optimal child emotion regulation skills (Halberstadt et al., 1999). If this is true, curvilinear relationships are difficult to detect with correlation coefficients. Future research should consider obtaining a larger sample and test for the presence of a curvilinear relationship between emotion valence talk and child emotion regulation.

This study demonstrated discriminant validity as the hypothesized variables did not demonstrate significant relations. This theoretically aligns with a recent systematic review by Zinsser et al. (2021); in that, emotion modeling and child emotion regulation demonstrated the smallest and non-significant overall effect as well as the fewest effects and widest confidence interval. Moreover, all the analyzed discriminant validity correlations were found to fall within pooled bivariate correlation confidence interval between emotion modeling and child emotion regulation as reported by Zinsser et al. (2021). This provides preliminary discriminant validity for the study because these theoretically unrelated constructs are, in fact, not found to be highly correlated with each other. However, a limitation with the discriminant validity hypotheses was the hypothesizing a null; future discriminant validity analyses should use structural equation

modeling to test a convergent model against a discriminant model. Moreover, the inclusion of latent variables when modeling data could increase the robustness of constructs measured and estimate measurement error. That is, future DECS discriminant validity testing should use model fit assessments compared to correlation assessments.

The study also sought to investigate the concurrent validity of PCIT-T on DECS codes. Significant improvements were found from pre-treatment to post-treatment for emotion validation, emotion identification, adaptive direct emotion-focused practices, and adaptive emotion-focused practices. Moreover, significant improvements were also found from post-treatment to follow-up on adaptive emotion-focused practices. Although the evidence on the efficacy of PCIT-T improving emotion-focused parenting practices is still in its infancy, these results are promising. Moreover, these findings also reveal fruitful avenues to enhance PCIT-T emotion coaching including positive valence talk, emotion modeling, and emotion modeling with toys. Although emotion validation was shown to differ significantly between timepoints, the low frequency of skill use could be another area of focus to enhance emotion coaching in PCIT-T. Since PCIT relies heavily on a behavioral observation coding system (i.e., DPICS) at nearly every stage of treatment to ensure successful treatment fidelity. The DPICS does not capture emotion-focused content in PCIT-T, which is a strong and novel area of emphasis in PCIT-T. Since the DECS provides a method of coding relevant caregiver-toddler emotion talk or interactions, it may serve as a useful tool to assess caregiver skills, guide treatment decisions, monitor treatment, and structure emotion coaching in PCIT-T like the DPICS.

DECS Reliability

Importantly, PCIT therapists have been shown to prefer behavioral observation measures like the DPICS compared to self-report measures (Klein et al., 2021). This leads to a third

important aim of the study, the reliability and practical utility of the DECS. The study demonstrated excellent interrater reliability, with the majority of DECS scores demonstrating kappa statistics in the almost perfect range. From a psychometric perspective, this strong interrater reliability ensures protection against the effect of added measurement error weakening observed associations between measures. From a utility standpoint, DECS codes are scored on six types of emotion-focused practices, two emotion valances, and three levels of emotion categorization, resulting in 36 possible individual DECS codes (e.g., EI-P-3, ENOS-N-2, and EV-P-2). While complex microanalytic coding systems are often more suitable for research purposes, the DECS was also created for clinical usage by PCIT-T therapists. Due to this important practical utility concern, great lengths were taken to create DECS training materials, standardize a procedure for DECS coder certification (i.e., 2 hour-long presentations and skills check-outs), and assess the interrater reliability and test-retest reliability. To rigorously test this standardized DECS training, after completing the standardized DECS training procedure, coders engaged in a cessation of all DECS coding for approximately 8-weeks. After this embargo period, the majority of coders had almost perfect interrater reliability with the primary investigator. The degree of coder drift after about an 8-week delay with no DECS coding practice was also assessed via test-retest reliability; coders demonstrated substantial overall agreement. With high interrater and test-retest reliability findings, coder drift was shown to be negligible after coders underwent a standardized DECS training. The study provided strong evidence for the temporal stability of DECS coding knowledge as the longer the time gap, the greater the likelihood of lower kappa coefficients. When coupled with the standardized training procedure, the comprehensive microanalytic DECS demonstrates practical utility and the potential for widescale dissemination for clinical providers in PCIT-T trainings.

Strengths

This study has several notable strengths that enhance the current body of literature on PCIT-T and emotion-focused caregiver practices. First, this study met a critical need in the emotion-focused parenting practices literature by developing a novel caregiver-toddler emotion coding system for use in PCIT-T (Zinsser et al., 2021). Second, the study generated comprehensive and digestible data visualizations to clearly communicate the complex DECS dataset using Tableau (2022). Third, the psychometric evaluation assessed validity through the creation of a nomological network, including a theoretical framework, empirical framework for measurement, and specification of linkages through hypothesized focused convergent and discriminant validity associations. A fourth strength of this study was a focus on clinical utility and practical application; this was achieved through the assessment of coder drift and temporal stability of a standardized and practical DECS training procedure. This study also provides preliminary evidence of improvements in adaptive emotion-focused practices for caregivers who completed PCIT-T. In sum, the study carefully developed, validated, and tested reliability with consideration for clinical utility for a microanalytic caregiver-child emotion coding system for application in PCIT-T as well as the broader field of emotion-focused parenting interventions.

Limitations

Several limitations of the current study should be taken into consideration. One of the most significant limitations to this study is gathering discriminant validity through null hypothesis testing. Although steps were taken to increase evidence of discriminant validity by comparing these findings to pooled bivariate correlations reported in a recent meta-analytic review (Zinsser et al., 2021), this technique for assessing correlations relies on proving null hypotheses. Incorporating more robust and varied techniques for assessing discriminant validity

are necessary to further scrutinize the budding discriminant validity evidence. The use of structural equation modeling to test a convergent model against a discriminant model would have strengthened this study.

Another limitation of the current study was limited testing-method variance with certain constructs. For instance, convergent validity investigations on maternal sensitivity relied solely on a behavior observation system (i.e., NICHD), while caregiver emotion regulation was assessed solely via parent self-report. This study would be strengthened by increasing method variance when validity evidence in the future. This includes using as many a priori procedural remedies for common method variance; however, statistical remedies (e.g., structural equation modeling) may also be appropriate to explore the influence of common method variance on findings.

A final limitation to the current study includes the skewed socioeconomic status of study participants based on yearly household income. That is, over half of the participants in the sample contained a household income of above 101,000 AUD; comparatively, less than a tenth of Australian persons (8.4%) had an income over 104,000 AUD (Australian Bureau of Statistics, 2022). Therefore, the present psychometric evidence may demonstrate limited generalizability to families of different socioeconomic groups. Given this issue, it is paramount to continue building psychometric evidence for the DECS across diverse populations to ensure the appropriateness of inferences and actions based on DECS scores, especially if the DECS is used as a tool to guide clinical decision making and monitor progress in treatment.

Future Directions

Generally, convergent correlations should be statistically significant, and discriminant correlations should be nonsignificant. However, it is important to consider the ways in which

other factors may influence these findings and subsequent inferences and generalizations. For instance, two variables with different skews will have reduced correlations (Furr & Bacharach, 2014). Skewness and overdispersion was a particular concern with variables in this study. Moreover, DECS variables constitute count variables based on the aggregation of caregiver emotion talk with their toddlers. Above and beyond concerns related to method variance, DECS variables may also be influenced by a number of other factors, including individual caregiver and child factors at the time of assessment (e.g., mood), the length of the observation period, and DECS task prompts. Future iterations and subsequent refinements should carefully explore and consider these factors. For instance, future research might investigate individual DECS tasks separately to examine the influence of certain tasks or prompts on eliciting caregiver behaviors. Future research may benefit from including tasks prompting for emotion validation talk. Additionally, increasing the duration of the DECS tasks and overall assessment may benefit future psychometric investigations.

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Tables

Table 1

28 Semantically Distinct Emotions Coded as Level 1, Basic Emotions in the DECS

Number	Semantically Distinct Emotion	Synonyms
1	Amusement	Happiness, laughter, extreme happiness
2	Anger	Boiling with anger, angry content, feeling mad
3	Awe	Surprise, awestruck surprise, wonder
4	Concentration	Deep focus, determination, focus
5	Confusion	Feeling perplexed, bewilderment, dumbfoundedness
6	Contemplation	Thoughtfulness, pondering, concentration
7	Contempt	Annoyance, disapproval, distrust
8	Contentment	Relaxation, peacefulness, calmness
9	Desire	Lust, feeling flirtatious, feeling sexy
10	Disappointment	Sadness, regret, frustration
11	Disgust	Grossed out
12	Distress	Anxiety, worry, nervousness
13	Doubt	Distrust, suspicion, contemptuous doubt
14	Ecstasy	Sensory pleasure, bliss, extreme pleasure
15	Elation	Extreme happiness, excitement, laughter
16	Embarrassment	Shyness, amused embarrassment, embarrassed relief
17	Fear	Feeling scared, extreme fear, bone-chilling terror
18	Interest	Childlike curiosity, curiosity, wonder
19	Love	Happiness, feeling loved, romantic love

20	Pain	Severe pain, angry pain, feeling hurt
21	Pride	Pride in country, honor, patriotism
22	Realization	Inspiration, feeling dumb, deep relief
23	Relief	Deep relief, feeling worn out, heart sinking
24	Sadness	Extreme sadness, crying, feeling upset
25	Shame	Disappointment, sadness, self-dissatisfaction
26	Surprise	Shock, awestruck surprise, extreme surprise
27	Sympathy	Concern, compassion, pity, caring
28	Triumph	Excitement, great triumph, pride

Note. The table above outlines the 28 semantically distinct emotions as defined and outlined by Cowen and Keltner (2020) that will be used to train coders to reliable code level one, basic emotions in the DECS.

Table 2

Examples of Emotional Word Categorization in the DECS

Level 1	**Level 2**	**Level 3**
28 basic emotions *and synonyms*	*States of being, culturally variable, and socially constructed feelings*	*Behavioral emotion, and observable emotional actions*
Anger; Boiling, Contempt, Furious, Mad	Aggressive, mean	Hitting, Fighting, Smack
Contemplation; Pondering, Thoughtfulness, Wondering	Thankful	Thanking, giving thanks, thank you
Contentment; Calmness, Peacefulness, Relaxation	Gentle, Patient, Settle, Sleepy, Tired	Asleep, Breathe, Rest, Sleep, Yawning
Love	Lovely	Hugs, kisses, cuddles

Note. The table above provides definitions and examples of the three levels of emotion talk coded in the DECS.

Table 3

Descriptive Statistics of Toddler Participants

	N	*N Yes*	*Percent*		
Sex assigned at birth (% female)	84	44	52.4%		
ASD status (% with ASD)	91	14	15.4%		
	N	*Mean*	*SD*	*Min*	*Max*
Age at baseline (in months)	88	19.47	3.27	14.00	28.00

Note. ASD = autism spectrum disorder.

Table 4

Descriptive Statistics of Caregiver Participants

	Mother			Father		
	N	*Mean*	*SD*	*N*	*Mean*	*SD*
Age (in years)	75	32.65	5.60	67	34.97	6.45
	N	*N Yes*	Percent	*N*	*N Yes*	Percent
Ethnicity	69			64		
Caucasian		33	47.8%		30	46.9%
Aboriginal/Torres Strait Islander		3	4.3%		2	3.1%
European		6	8.7%		7	10.9%
Hispanic		3	4.3%		1	1.6%
Middle Eastern		8	11.6%		10	15.6%
Asian		12	17.4%		11	17.2%
Other		4	5.8%		3	4.7%
Education	76			62		
Year 10		6	7.9%		4	6.5%
Year 12		7	9.2%		7	11.3%
TAFE/other		26	34.2%		23	37.1%
University Undergraduate		30	39.5%		16	25.8%
University Postgraduate		7	9.2%		12	19.4%
Occupation	74					
Manager		4	5.4%			
Professional		20	27.0%			
Technician, trades		3	4.1%			
Community, personal service		11	14.9%			
Clerical, administrative		5	6.8%			
Sales		1	1.4%			
Laborer		2	2.7%			
Unemployed, SAHM		24	32.4%			
Student		4	5.4%			

Note. SAHM = stay at home mother, TAFE = technical and further education.

Table 5

Descriptive Statistics of Families/Households

		Household	
	N	*N Yes*	Percent
Household Income (yearly)	78		
Less than 50,000		20	25.6%
50,000 – 75,000		10	12.8%
76,000 – 100,000		6	7.7%
101,000 – 150,000		27	34.6%
More than 150,000		15	19.2%
Household Size (People in the home)	69		
2		7	10.1%
3		27	39.1%
4		21	30.4%
5		10	14.5%
6		4	5.8%
Marital Status	78		
Married		51	65.4%
De-facto		6	7.7%
Separated		8	10.2%
Single		13	13.7%
Language Spoken	89		
Arabic or Arabic/English		6	6.7%
Australian		2	2.2%
Bangali		1	1.1%
Cantonese		1	1.1%
English		62	69.7%
Farsi		1	1.1%
Korean		1	1.1%
Nepali		1	1.1%
Serbian, English		1	1.1%
Spanish		2	2.2%
Vietnamese		1	1.1%
No Response, Missing		10	11.2%
Second Language Spoken in Home	89		
Yes		34	38.2%
No Response, Missing		55	61.7%

Note. Household income in Australian dollars.

Table 6

DECS Codes by Timepoints across Participants (N = 88)

	ADEP			AEP			AIEP			ED			EI			EM			EMT			ENOS			EV			Lvl1			Lvl2			Lvl3			Negval			Posval		
Subject	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU
Total	**1,234**	**1,189**	**453**	**1,779**	**1,610**	**626**	**545**	**421**	**173**	**122**	**44**	**19**	**1,221**	**1,157**	**438**	**490**	**332**	**144**	**55**	**89**	**29**	**233**	**85**	**28**	**13**	**32**	**15**	**507**	**535**	**187**	**542**	**458**	**167**	**1,083**	**746**	**319**	**492**	**505**	**147**	**1,639**	**1,234**	**526**
1	11		17	14		21	3		4	0		0	11		17	2		4	1		0	0		1	0		0	1		4	7		7	6		11	6		5	8		17
2	3	8		12	20		9	12		0	0		3	8		8	9		1	3		4	1		0	0		8	4		0	2		8	15		1	2		15	19	
3	13			17			4			6			13			4			0			1			0			0			9			15			12			12		
4	31			40			9			0			31			9			0			0			0			7			10			23			7			33		
5	19	38		33	62		14	24		7	2		19	36		11	21		3	3		0	1		0	2		4	23		9	21		27	21		12	12		28	53	
6	22	5		35	11		13	6		10	0		22	5		9	5		4	1		0	8		0	0		6	13		10	0		29	6		12	7		33	12	
7	9	14	9	12	17	12	3	3	3	0	0	1	9	14	9	0	3	3	3	0	0	0	0	0	0	0	0	0	0	0	4	9	3	10	1	9	3	3	3	1	6	9	16	7
8	1	1		1	8		0	7		0	0		1	1		0	7		0	0		0	0		0	0		0	7		0	0		1	1		0	0		1	8	
10	8	23		12	31		4	8		1	5		8	23		2	8		2	0		0	0		0	0		2	10		4	5		7	21		4	13		9	23	
11	15	15		24	20		9	5		0	0		15	14		9	5		0	0		0	5		0	1		9	10		8	5		7	10		2	2		22	23	
12	8	22	13	17	27	16	9	5	3	0	0	0	8	20	13	6	1	2	3	4	1	0	0	0	0	2	0	6	4	5	1	4	6	10	19	5	3	1	5	14	26	11
13	23	45		44	55		21	10		1	1		23	45		18	8		3	2		0	0		0	0		6	10		6	19		33	27		12	15		33	41	
14	7			10			3			9			7			2			1			0			0			1			5			13			13			6		
15	8			11			3			0			8			3			0			6			0			4			3			10			0			17		
16	9	6		11	6		2	0		0	0		9	6		2	0		0	0		0	0		0	0		9	0		1	6		1	0		7	4		4	2	
17	16	17	10	29	30	10	13	13	0	0	1	0	16	17	10	13	10	0	0	3	0	12	8	8	0	0	0	12	12	2	14	7	6	15	20	10	4	8	0	37	31	18
18	17	3		20	3		3	0		7	0		17	3		3	0		0	0		1	0		0	0		14	1		10	1		4	1		2	1		26	2	
19	14			27			13			0			14			13			0			0			0			6			5			16			3			24		
20	22	25		25	35		3	10		1	1		22	25		2	7		1	3		2	0		0	0		5	8		10	9		13	19		2	4		26	32	
21	10	9		14	9		4	0		0	0		10	9		4	0		0	0		0	0		0	0		4	0		0	1		10	8		0	2		14	7	
22	15			20			5			0			15			5			0			0			0			2			3			15			3			17		
23	22	45	29	29	49	33	7	4	4	1	2	2	22	45	29	7	4	4	0	0	0	4	0	1	0	0	0	6	5	5	8	29	11	20	17	20	8	19	9	26	32	27
24	27			28			1			0			27			1			0			0			0			5			12			11			13			15		
25	22	15		37	29		15	14		1	0		22	15		10	10		5	4		3	0		0	0		5	10		18	5		18	14		16	2		25	27	
26	8	10		9	31		1	21		0	0		8	10		1	21		0	0		0	1		0	0		3	4		4	2		2	26		3	1		6	31	
27	4	18	31	6	24	39	2	6	8	0	0	0	4	17	28	0	6	7	2	0	1	3	0	2	0	1	3	3	9	3	3	12	19	3	3	19	5	10	10	4	14	31
28	6			13			7			0			6			7			0			0			0			3			2			8			1			12		
29	38			50			12			1			38			12			0			0			0			5			16			30			5			46		
30	8			13			5			0			8			5			0			0			0			6			0			7			3			10		
31	11	19		14	20		3	1		2	0		10	19		3	0		0	1		0	0		1	0		3	4		5	8		8	8		7	5		9	15	
32	13	11		14	13		1	2		2	1		13	11		1	2		0	0		6	4		0	0		1	7		9	6		12	5		4	9		18	9	
33	26	24	36	28	30	44	2	6	8	0	0	0	26	20	36	2	5	5	0	1	3	18	0	0	0	4	0	20	7	6	6	10	5	20	13	33	23	4	2	23	26	42
34	5	7		5	11		0	4		0	1		5	7		0	2		0	2		0	0		0	0		0	1		1	4		4	7		0	3		5	9	
35	11	29	30	19	36	36	8	7	6	2	1	4	11	29	30	7	7	6	1	0	0	0	0	0	0	0	0	1	23	7	4	2	20	16	12	13	5	25	13	16	12	27
36	10	19		20	27		10	8		1	1		9	19		10	2		0	6		0	0		1	0		4	4		4	7		13	17		1	7		20	21	
37	4	6		19	22		15	16		0	0		4	6		15	16		0	0		0	0		0	0		11	9		1	2		7	11		3	1		16	21	
38	12	20	28	15	25	35	3	5	7	0	0	0	12	17	28	3	5	3	0	0	4	3	0	0	0	3	0	4	6	11	8	9	1	6	10	23	4	2	9	14	23	26
39	11	2		11	2		0	0		0	0		11	2		0	0		0	0		1	0		0	0		3	0		7	1		2	1		6	0		6	2	
40	11	26	21	19	35	31	8	9	10	0	1	0	11	26	20	8	9	8	0	0	2	0	0	2	0	0	1	2	22	10	6	7	10	11	7	13	6	17	9	13	19	24
41	13			16			3			2			13			3			0			0			0			3			11			4			12			6		
42	24	19		32	25		8	6		0	0		21	19		8	4		0	2		0	2		3	0		5	5		1	14		26	8		1	9		31	18	

	ADEP			AEP			AIEP			ED			EI			EM			EMT			ENOS			EV			Lvl1			Lvl2			Lvl3			Negval			Posval		
Subject	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU
43	4			4			0			0			4			0			0			0			0			0			0			4			0			4		
44	13	20		17	21		4	1		1	5		13	20		4	1		0	0		2	0		0	0		4	7		8	13		8	6		2	5		18	21	
45	12	7	8	15	12	14	3	5	6	19	0	0	11	7	8	3	5	4	0	0	2	0	0	1	1	0	0	14	6	5	6	3	8	14	3	2	16	5	7	18	7	8
46	13			18			5			0			13			5			0			0			0			9			7			2			5			13		
47	17	12	32	23	19	52	6	7	20	4	0	2	17	12	32	6	2	15	0	5	5	0	2	1	0	0	0	10	2	4	9	6	20	8	13	31	2	7	14	25	14	41
48	18	19	25	22	22	33	4	3	8	0	0	0	18	19	25	4	3	7	0	0	1	0	5	0	0	0	0	0	9	12	1	7	7	21	11	14	1	8	3	21	19	30
49	27	23	23	29	26	31	2	3	8	1	1	3	27	23	23	2	2	5	0	1	3	0	1	5	0	0	0	6	6	14	6	6	5	18	16	20	9	16	13	21	12	26
51	26			37			11			0			26			11			0			3			0			11			7			22			8			32		
52	10	21	21	11	22	26	1	1	5	0	0	0	10	21	21	0	0	5	1	1	0	52	1	0	0	0	0	55	14	6	6	2	6	2	7	14	6	11	2	57	12	24
53	1	13		1	19		0	6		0	0		1	13		0	4		0	2		0	0		0	0		0	5		0	2		1	12		0	4		1	15	
54	2	9	15	2	12	17	0	3	2	0	0	0	2	9	15	0	3	2	0	0	0	6	0	0	0	0	0	5	4	3	2	0	1	1	8	13	0	2	0	8	10	17
55	8	40	8	18	48	18	10	8	10	0	0	0	8	40	8	10	8	4	0	0	6	0	0	0	0	0	0	1	22	9	2	17	2	15	9	7	2	30	12	16	18	6
56	12	57	34	28	65	46	16	8	12	0	0	1	12	54	26	16	7	11	0	1	1	0	2	0	0	3	8	12	33	18	3	16	8	13	18	21	5	24	8	23	43	39
57	3	3		20	4		17	1		0	0		3	3		17	1		0	0		0	0		0	0		18	0		2	2		0	2		2	0		18	4	
58	13			28			15			0			13			8			7			3			0			4			10			17			6			25		
59	20	27		23	30		3	3		0	0		19	27		3	3		0	0		0	0		1	0		3	1		3	6		17	23		6	2		17	28	
60	12	33		33	55		21	22		1	5		12	33		20	22		1	0		2	1		0	0		7	29		16	12		13	20		17	23		19	38	
61	19	24		29	43		10	19		2	0		17	24		10	14		0	5		0	0		2	0		8	11		11	10		12	22		3	5		28	38	
62	14	30		18	37		4	7		0	0		14	29		4	3		0	4		1	3		0	1		10	12		2	9		7	19		10	14		9	26	
63	21	10		31	25		10	15		0	0		21	10		8	9		2	6		4	1		0	0		6	3		11	6		18	17		9	8		26	18	
64	30	18	11	40	29	25	10	11	14	0	7	2	29	18	11	10	11	14	0	0	0	0	4	0	1	0	0	6	8	5	12	9	2	22	23	20	15	13	8	25	27	19
65	31	20	9	34	23	11	3	3	2	0	0	0	31	15	9	3	3	2	0	0	0	37	5	0	0	5	0	7	11	6	46	14	4	18	3	1	18	0	3	53	28	8
66	4	39	13	14	57	21	10	18	8	0	1	0	4	36	10	7	12	8	3	6	0	3	1	1	0	3	3	6	18	11	4	18	0	7	23	11	1	12	2	16	47	20
67	7	12		10	20		3	8		0	0		7	12		2	4		1	4		0	1		0	0		2	2		8	7		0	12		2	3		8	18	
68	6	26		16	37		10	11		4	0		6	26		10	11		0	0		0	1		0	0		13	10		2	3		5	25		7	0		13	38	
69	5			5			0			0			5			0			0			0			0			0			5			0			1			4		
70	2			2			0			0			2			0			0			0			0			1			0			1			1			1		
71	18			26			8			2			18			8			0			0			0			3			10			15			1			27		
72	11			15			4			2			11			4			0			4			0			7			8			4			6			13		
73	4	10		6	11		2	1		0	0		4	10		2	1		0	0		0	0		0	0		3	3		1	7		2	1		0	4		5	7	
74	10			12			2			10			10			1			1			0			0			0			3			19			2			20		
75	16	12		23	17		7	5		4	0		16	12		7	3		0	2		0	1		0	0		4	8		0	5		23	5		4	11		23	7	
76	7			17			10			7			7			9			1			0			0			0			8			16			13			11		
77	3	26		4	26		1	0		0	0		3	26		0	0		1	0		1	0		0	0		0	24		2	0		3	2		2	24		3	2	
78	36			49			13			0			36			13			0			1			0			4			3			43			5			45		
79	28	48	8	29	58	27	1	10	19	0	0	3	27	47	8	1	10	19	0	0	0	16	4	0	1	1	0	17	10	23	7	15	4	21	37	3	7	10	5	38	52	25
80	15			18			3			0			15			3			0			0			0			0			5			13			6			12		
81	3			5			2			1			3			2			0			0			0			0			2			4			2			4		
82	27	36		32	50		5	14		1	2		27	34		5	6		0	8		23	17		0	2		15	10		15	20		26	39		8	21		48	48	
83	15	29	0	15	31	0	0	2	0	0	4	0	15	26	0	0	0	0	0	2	0	0	0	0	0	3	0	1	16	0	2	10	0	12	9	0	3	23	0	12	12	0
84	30	18	22	35	22	25	5	4	3	0	0	0	30	18	22	5	4	3	0	0	0	0	0	6	0	0	0	4	4	5	4	9	14	27	9	12	1	1	1	34	21	30
85	4			17			13			1			4			13			0			4			0			3			4			15			4			18		

	ADEP			AEP			AIEP			ED			EI			EM			EMT			ENOS			EV			Lvl1			Lvl2			Lvl3			Negval			Posval		
Subject	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU
86	2		0	2		3	0		3	0		1	2		0	0		3	0		0	0		0	0		0	0		4	2		0	0		0	2		1	0		3
87	16			17			1			0			16			1			0			5			0			6			8			8			9			13		
88	23	18		39	21		16	3		0	1		21	18		15	3		1	0		0	1		2	0		7	14		3	2		29	7		1	11		38	12	
89	24	28		27	35		3	7		5	1		24	27		0	0		3	7		2	4		0	1		8	11		13	14		13	15		19	22		15	18	
90	6			10			4			2			6			4			0			0			0			4			3			5			3			9		
91	19			28			9			1			19			6			3			0			0			4			6			19			6			23		

Note. AEP = adaptive emotion-focused practices, ADEP = adaptive direct emotion-focused practices, AIEP = adaptive indirect emotion-focused

practices, ED = emotion dismissing, EV = emotion validation, EI = emotion identification, EM = emotion modeling, EMT = emotion modeling with toys, ENOS = emotion not otherwise specified (see figure 2 for more information on the configuration of composites and individual codes), Lvl1 = level one emotion, Lvl2 = level two emotion, Lvl3 = level 3 emotion; Negval = negative emotion valance, Posval = positive emotion valance.

Table 7
Emotion Words Captured by the DECS

Emotion Word	Total	Positive	Negative
thank, thankful, thanks and 1 more	**884**	884	
love, lovely, loves and 1 more	**551**	550	1
cuddle	**474**	471	3
gentle & gently	**327**	322	5
kiss, kisses, kissing and 3 more	**242**	242	
hug, hugged, hugs and 4 more	**234**	234	
happy	**189**	188	1
upset, upsetting and 1 more	**149**	3	146
highfive & highfives	**132**	132	
sorry	**130**	3	127
sleep, sleeping, sleepy and 1 more	**120**	5	115
icky, yuck, yuckies and 1 more	**115**		115
merrily	**109**	109	
nice & nicely	**108**	104	4
tired	**106**	1	105
fun & funny	**104**	103	1
hurt, hurting, hurts	**78**		78
tickle, tickles, tickly and 1 more	**70**	70	
frustrated & frustrating	**66**		66
sad	**62**	1	61
hungry & hungy	**59**		59
ouch, ouchi, ouchie and 6 more	**57**	6	51
clever	**54**	54	
hit & hitting	**49**	2	47
cried, cry, crying	**39**	3	36
thirsty & thirsy	**32**		32
cheeky	**32**	32	
calm, calmed, calming	**32**	31	1
scare, scared, scaring and 1 more	**30**		30
silly	**29**	26	3
miss, missed, missing	**24**	4	20
proud	**23**	23	
angry	**21**		21
awe	**19**	17	2
smile & smiley	**17**	17	
smart & smarty	**17**	17	
interested & interesting	**17**	17	
giving	**17**	16	1
wonder	**16**	16	
excited & exciting	**16**	16	
sweeheart, sweet, sweetie	**15**	15	
smack, smacked, smacking	**14**		14
helping	**13**	13	

Emotion Word	Total	Positive	Negative
helping	**13**	13	
settle	**12**	10	2
naughty	**12**	2	10
worries & worry	**11**		11
asleep	**11**	2	9
laugh, laughing, laughs	**10**	10	
kind	**10**	10	
fist	**9**	9	
oop, oops, oopsie	**7**	3	4
ew, eww, ewww and 1 more	**7**		7
crazy	**7**		7
sick	**5**		5
mad	**5**		5
kick & kicking	**5**		5
breathe, breathing, breaths	**5**	5	
share	**4**	4	
mean	**4**		4
grumpy	**4**		4
annoyed & annoying	**4**		4
remember	**3**	2	1
perseverance & persevering	**3**	3	
patient & patiently	**3**	3	
fighting	**3**		3
disgusting	**3**		3
biting	**3**		3
wait & waiting	**2**	2	
thoughtful	**2**	2	
scream	**2**	2	
restless	**2**		2
rest	**2**		2
joy	**2**	2	
gross	**2**		2
generous	**2**	2	
enjoy & enjoyed	**2**	2	
dramatic	**2**		2
caring	**2**	2	
yum	**1**	1	
yawn	**1**		1
stress	**1**		1
shy	**1**		1
shame	**1**		1
relaxing	**1**	1	
neglected	**1**		1

Emotion Word	Total	Positive	Negative
intelligent	1	1	
impressed	1	1	
hospitable	1	1	
forgot	1		1
dreaming	1		1
defiant	1		1
courageous	1	1	
confused	1	1	
concentrate	1	1	
brave	1	1	
bleh	1		1
attacking	1		1
aggression	1		1

Table 8

Caregiver Emotion-focused Behaviors with Child: Descriptive Data (n=88)

Variable	Skewness Z-score	Kurtosis Z-score	*M*	*SD*	Median	Range
ED	13.38	28.90	1.39	2.98	0.00	19.00
EI	2.7	-0.27	13.83	8.61	12.50	37.00
EV	14.19	27.05	0.16	0.52	0.00	3.00
EM	3.39	0.19	5.55	4.90	4.00	20.00
EMT	10.21	15.45	0.63	1.28	0.00	7.00
ENOS	18.42	49.77	2.64	7.58	0.00	52.00
LVL1	17.26	57.17	5.73	6.92	4.00	55.00
LVL2	13.9	42.11	6.16	6.01	5.00	46.00
LVL3	3.04	1.12	12.30	8.85	12.00	43.00
NEG	4.95	2.2	5.85	5.21	4.50	23.00
POS	3.59	1.56	18.33	12.29	16.00	57.00
ADEP	2.59	-0.46	13.99	8.70	12.50	37.00
AIEP	3.39	0.03	6.17	5.22	4.00	21.00
AEP	1.92	-0.4	20.16	11.16	18.00	49.00

Note. AEP = adaptive emotion-focused practices, ADEP = adaptive direct emotion-focused practices, AIEP = adaptive indirect emotion-focused practices, ED = emotion dismissing, EV = emotion validation, EI = emotion identification, EM = emotion modeling, EMT = emotion modeling with toys, ENOS = emotion not otherwise specified (see figure 2 for more information on the configuration of composites and individual codes), LVL1 = level one emotion, LVL2 = level two emotion, LVL3 = level 3 emotion; NEG = negative emotion valance talk, POS = positive emotion valance talk.

Table 9

Caregiver Emotion-focused Behaviors with Child: Bivariate Correlations with NICHD total sensitivity, n=88

Variables	*rs* (*p*)	*r* (*p*)	Predicted Associations
ED	-.110 (.333)	-.326 (.003)**	-
EI	.280 (.012)**	.291 (.009)**	+
EV	.109 (.338)	.098 (.393)	+
EM	.187 (.099)	.218 (.054)	Exploratory
EMT	-.005 (.968)	.038 (.743)	Exploratory
ENOS	.129 (.259)	.036 (.752)	Exploratory
LVL1	.276 (.014)*	.106 (.354)	Exploratory
LVL2	.239 (.034)*	.137 (.228)	Exploratory
LVL3	.187 (.099)	.194 (.087)	Exploratory
NEG	.030 (.795)	.070 (.539)	-
POS	.270 (.016)*	.235 (.037)*	+
ADEP	.283 (.011)*	.294 (.009)**	+
AIEP	.183 (.106)	.214 (.058)	Exploratory
AEP	.309 (.006)**	.329 (.003)**	+

Note. * = correlation is significant at the 0.05 level (2-tailed); ** = correlation is significant at the 0.01 level (2-tailed); AEP = adaptive emotion-focused practices, ADEP = adaptive direct emotion-focused practices, AIEP = adaptive indirect emotion-focused practices, ED = emotion dismissing, EV = emotion validation, EI = emotion identification, EM = emotion modeling, EMT = emotion modeling with toys, ENOS = emotion not otherwise specified (see figure 2 for more information on the configuration of composites and individual codes), LVL1 = level one emotion, LVL2 = level two emotion, LVL3 = level 3 emotion; NEG = negative emotion valance talk, POS = positive emotion valance talk.

Table 10

Caregiver Emotion Regulation Skills: Descriptive Data, n=88

Variable	Skewness Z-score	Kurtosis Z-score	*M*	*SD*	Median	Range
DERS-AWARE	-0.69	-0.60	15.95	4.59	16	20
DERS-NONACCEPT	3.31	0.10	12.26	5.52	11	22
DERS-CLARITY	3.67	2.39	10.14	3.93	10	18
DERS-AC	1.28	0.06	26.10	7.95	26	37
DERS-TS	3.56	3.16	75.89	23.00	75	119
ED	13.38	28.90	1.39	2.98	0	19
EI	2.70	-0.27	13.83	8.61	12.5	37
EM	3.39	0.19	5.55	4.90	4	20
EMT	10.20	15.45	0.63	1.28	0	7
NEGVAL	4.95	2.20	5.85	5.21	4.5	23
POSVAL	3.59	1.56	18.33	12.29	16	57
AIEP	3.39	0.03	6.17	5.22	4	21
ADEP	2.59	-0.46	13.99	8.71	12.5	37
AEP	1.92	-0.40	20.16	11.16	18	49
DECS-TS	3.18	1.47	24.18	14.11	21.5	70

Note. AEP = adaptive emotion-focused practices, ADEP = adaptive direct emotion-focused practices, AIEP = adaptive indirect emotion-focused practices, ED = emotion dismissing, EI = emotion identification, EM = emotion modeling, EMT = emotion modeling with toys, ENOS = emotion not otherwise specified (see figure 2 for more information on the configuration of composites and individual codes), NEG = negative emotion valance talk, POS = positive emotion valance talk, DERS-AWARE = lack of emotional awareness subscale, DERS-NONACCEPT = nonacceptance of emotional responses subscale, DERS-CLARITY = lack of emotional clarity subscale, DERS-AC = composite of DERS-AWARE and DERS-CLARITY, DERS-TS = total score for all six DERS subscales, DECS-TS = total score for all DECS emotion-focused practice codes.

Table 11

Caregiver Emotion Regulation Skills: Bivariate Correlations

Variables	*rs* (*p*)	*r* (*p*)	Predicted Associations
DERS-NONACCEPT * ED	.043 (.700)	-.059 (.597)	+
DERS-AWARE * EM	.155 (.161)	.139 (.210)	-
DERS-AWARE * EMT	.008 (.941)	.048 (.668)	-
DERS-AWARE * AIEP	.148 (.182)	.142 (.199)	-
DERS-CLARITY * EV	-.029 (.793)	-.064 (.567)	-
DERS-CLARITY * EI	-.073 (.512)	.045 (.688)	-
DERS-CLARITY * ADEP	-.068 (.542)	.040 (.719)	-
DERS-AC * DECS-TS	-.019 (.868)	.052 (.639)	-
DERS-AC * AEP	0.57 (.611)	.151 (.172)	-
DERS-TS * NEGVAL	-.003 (.977)	-.051 (.648)	+
DERS-TS * POSVAL	-.167 (.131)	-.108 (.333)	-
DERS-NONACCEPT * DECS-TS	-.230 (.037)*	-.227 (.039)*	Exploratory
DERS-NONACCEPT * POSVAL	-.211 (.055)	-.237 (.031)*	Exploratory
DERS-CLARITY * EM	.144 (.193)	.227 (.039)*	Exploratory

Note. * = correlation is significant at the 0.05 level (2-tailed); ** = correlation is significant at the 0.01 level (2-tailed); AEP = adaptive emotion-focused practices, ADEP = adaptive direct emotion-focused practices, AIEP = adaptive indirect emotion-focused practices, ED = emotion dismissing, EV = emotion validation, EI = emotion identification, EM = emotion modeling, EMT = emotion modeling with toys, ENOS = emotion not otherwise specified (see figure 2 for more information on the configuration of composites and individual codes), NEG = negative emotion valance talk, POS = positive emotion valance talk, DERS-AWARE = lack of emotional awareness subscale, DERS-NONACCEPT = nonacceptance of emotional responses subscale, DERS-CLARITY = lack of emotional clarity subscale, DERS-AC = composite of DERS-AWARE and DERS-CLARITY, DERS-TS = total score for all six DERS subscales, DECS-TS = total score for all DECS emotion-focused practice codes.

Table 12

Child Emotion Regulation: Descriptive Data

Variable	N	*M*	Median	SD	Range	Skewness Z-score	Kurtosis Z-score
DPICS Whine/Yell	88	9.69	7.00	10.30	49.00	6.17	4.99
DPICS Whine	88	4.22	2.00	6.65	42.00	13.67	30.69
DPICS Yell	88	5.48	2.00	7.86	36.00	8.89	10.88
DECA-SR	59	39.92	38.00	7.99	30.00	1.03	-1.48
CBCL-DP	83	25.26	25.00	10.62	45.00	-0.07	-1.14
NEGVAL	88	5.85	4.50	5.21	23.00	4.95	2.20
POSVAL	88	18.33	16.00	12.29	57.00	3.59	1.56
CBCL-IP	83	13.16	12.00	8.05	39.00	3.80	2.24
CBCL-EP	83	21.59	22.00	9.44	39.00	0.02	-1.24
CBCL-TS	83	34.75	34.00	15.11	70.00	0.69	-0.73
DECA-ATTACH	86	40.98	41.00	8.16	37.00	1.12	-0.74
DECA-INITIATIVE	86	44.62	45.00	9.91	40.00	0.33	-1.53
DECA-PROTECTIVE	86	37.73	34.00	10.83	39.00	4.33	0.23

Note. DPICS = Dyadic Parent Child Interaction Coding System, NEG = negative emotion valance talk, POS = positive emotion valance talk, CBCL-DP = Dysregulation Profile, CBCL-IP = Internalizing Problems, CBCL-EP = Externalizing Problems, CBCL-TS = Total Scores, DECA-ATTACH = Attachment T-score, DECA-INITIATIVE = Initiative T-score, DECA-PROTECTIVE = Protective T-Score, DECA-SR = Self-regulation T-score.

Table 13

Child Emotion Regulation: Correlations

Variables	*rs* (*p*)	*r* (*p*)	Predicted Associations
DPICS Whine/Yell * POSVAL	-.184 (.086)	-.180 (.093)	-
DPICS Whine * POSVAL	-.066 (.540)	-.040 (.712)	-
DPICS Yell * POSVAL	-.180 (.094)	-.202 (.059)	-
DECA-SR * NEGVAL	.049 (.712)	.106 (.426)	-
DECA-SR * POSVAL	.201 (.127)	.169 (.201)	+
CBCL-DP * POSVAL	-.101 (.366)	-.116 (.295)	-

Note. * = correlation is significant at the 0.05 level (2-tailed); ** = correlation is significant at the 0.01 level (2-tailed); DPICS = Dyadic Parent Child Interaction Coding System, NEG = negative emotion valance talk, POS = positive emotion valance talk, CBCL-DP = Dysregulation Profile, DECA-SR = Self-regulation T-score.

Table 14

Discriminant Validity: Descriptive Data

Variable	N	*M*	Med	SD	Range	Skewness Z-score	Kurtosis Z-score	VMR
DPICS Whine/Yell	88	9.69	7.00	10.30	49.00	6.17	4.99	10.95
DECA-SR	59	39.92	38.00	7.99	30.00	1.03	-1.48	1.60
CBCL-DP	83	25.26	25.00	10.62	45.00	-0.07	-1.14	4.46
NEGVAL	88	5.85	4.50	5.21	23.00	4.95	2.20	4.65
EM	88	5.55	4.00	4.90	20.00	3.39	0.19	4.33
EMT	88	0.63	0.00	1.28	7.00	10.20	15.45	2.60
AIEP	88	6.17	4.00	5.22	21.00	3.39	0.03	4.41

Note. DPICS = Dyadic Parent Child Interaction Coding System, NEG = negative emotion valance talk, POS = positive emotion valance talk, CBCL-DP = Dysregulation Profile, DECA-SR = Self-regulation T-score, EM = emotion modeling, EMT = emotion modeling with toys, AIEP = adaptive indirect emotion-focused practices.

Table 15

Discriminant Validity: Correlations and Regressions

Variables	*rs* (*p*)	*r* (*p*)	Predicted Associations	Omnibus Test	NBR *p*-value	Exp(B) [95% CI]
CBCL-DP * NEGVAL	-.049 (.660)	-.072 (.519)	NS, not +	.574	.575	1.00 [0.98, 1.01]
DPICS Child Whine/Yell * NEGVAL	.158 (.141)	.081 (.453)	NS, not +	.462	.503	1.02 [0.97, 1.07]
CBCL-DP * EM	.054 (.629)	.121 (.276)	NS	.396	.396	1.01 [0.99, 1.03]
CBCL-DP * EMT	.052 (.638)	.006 (.959)	NS	.954	.954	1.00 [0.97, 1.04]
CBCL-DP * AIEP	.042 (.706)	.115 (.301)	NS	.403	.403	1.01 [0.99, 1.03]
DPICS Child Whine/Yell * EM	-.055 (.613)	-.062 (.569)	NS	.594	.591	0.99 [0.93, 1.04]
DPICS Child Whine/Yell * EMT	-.055 (.614)	-.073 (.497)	NS	.451	.440	.91 [.721, 1.153]
DPICS Child Whine/Yell * AIEP	-.062 (.565)	-.076 (.483)	NS	.507	.502	0.98 [0.94, 1.03]
DECA-SR * EM	.140 (.292)	.104 (.431)	NS	.484	.489	1.02 [0.97, 1.06]
DECA-SR * EMT	.082 (.538)	.114 (.389)	NS	.348	.350	1.03 [0.97, 1.08]
DECA-SR * AIEP	.177 (.179)	.129 (.329)	NS	.365	.366	1.02 [0.98, 1.05]

Note. * = correlation is significant at the 0.05 level (2-tailed); ** = correlation is significant at the 0.01 level (2-tailed); DPICS = Dyadic Parent Child Interaction Coding System, NEG = negative emotion valance talk, POS = positive emotion valance talk, CBCL-DP = Dysregulation Profile, DECA-SR = Self-regulation T-score, EM = emotion modeling, EMT = emotion modeling with toys, AIEP = adaptive indirect emotion-focused practices.

Figures

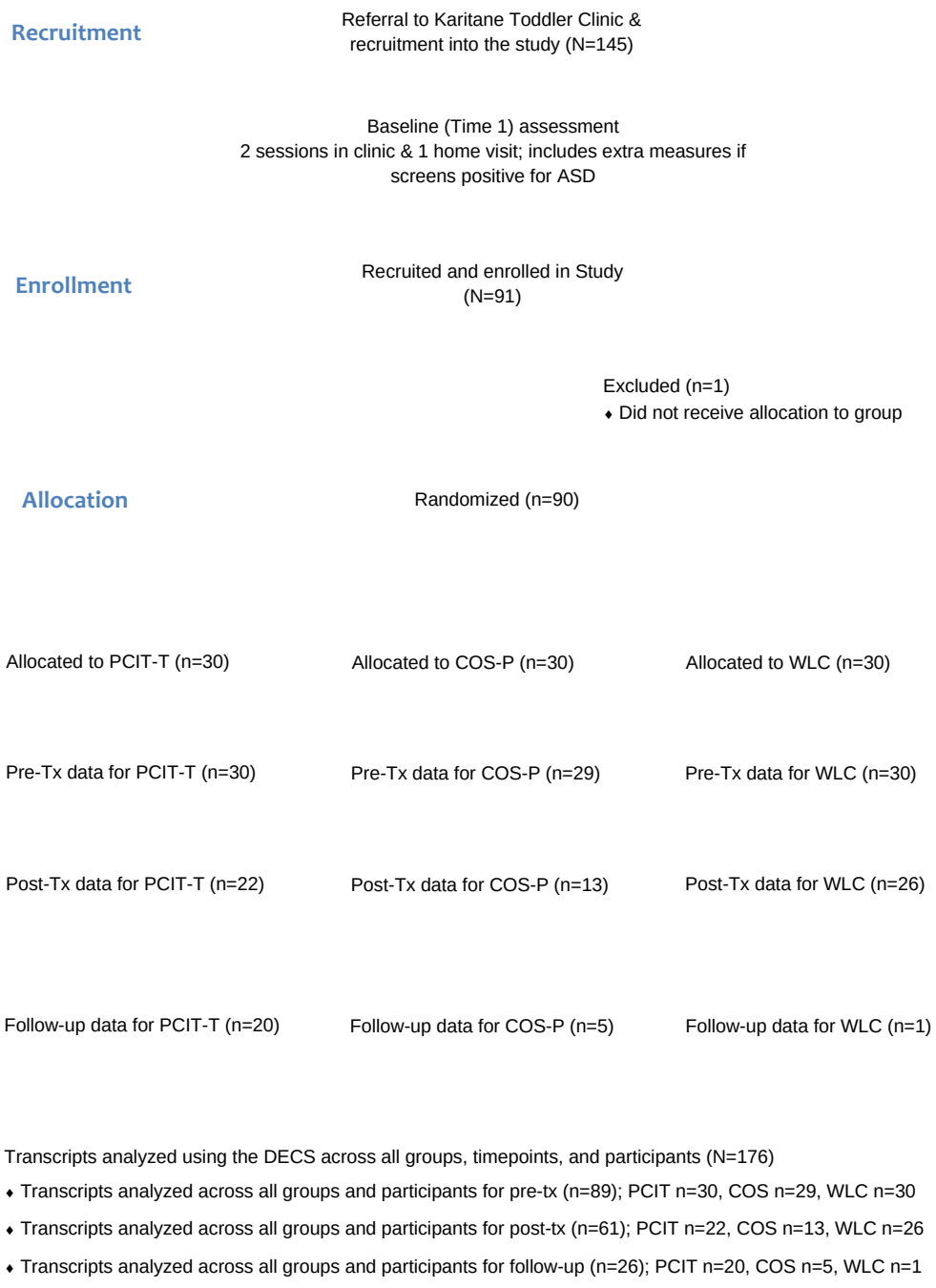


Figure 1. Consort diagram of participant flow in parent study, including DECS data utilized across timepoints by groups.

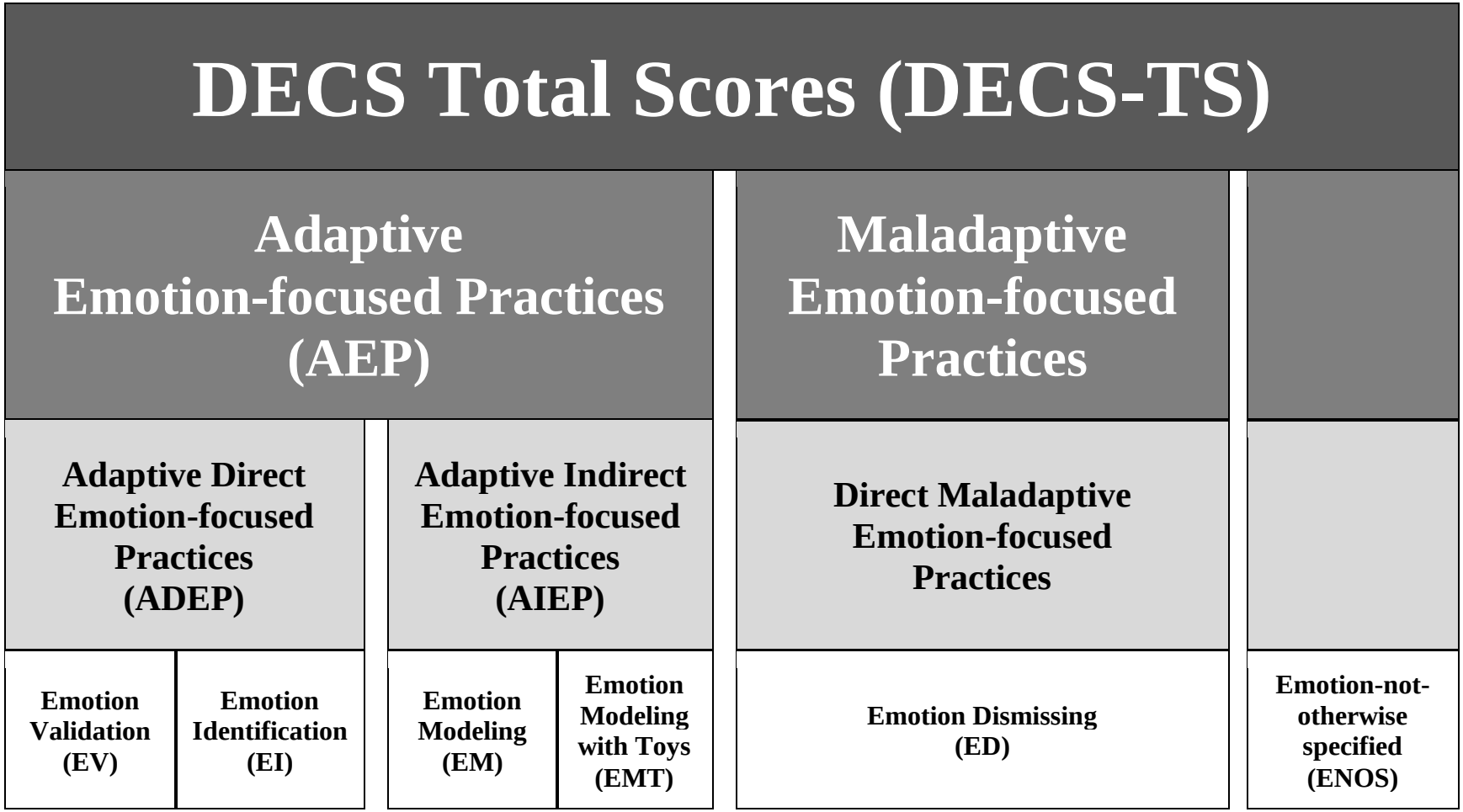


Figure 2. DECS Emotion-focused code seriation

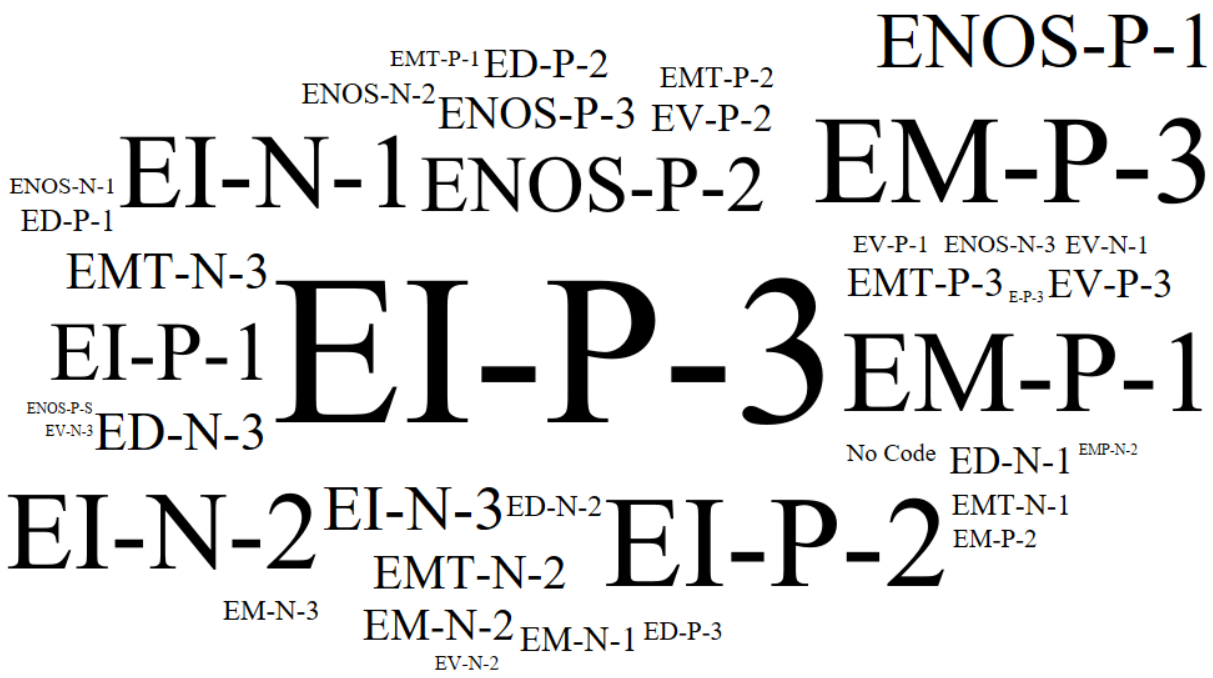


Figure 3. DECS Codes across All Timepoints, Groups, and Participants

Figure 4. DECS Emotion Words using Packed Bubble Chart in Tableau (2022)

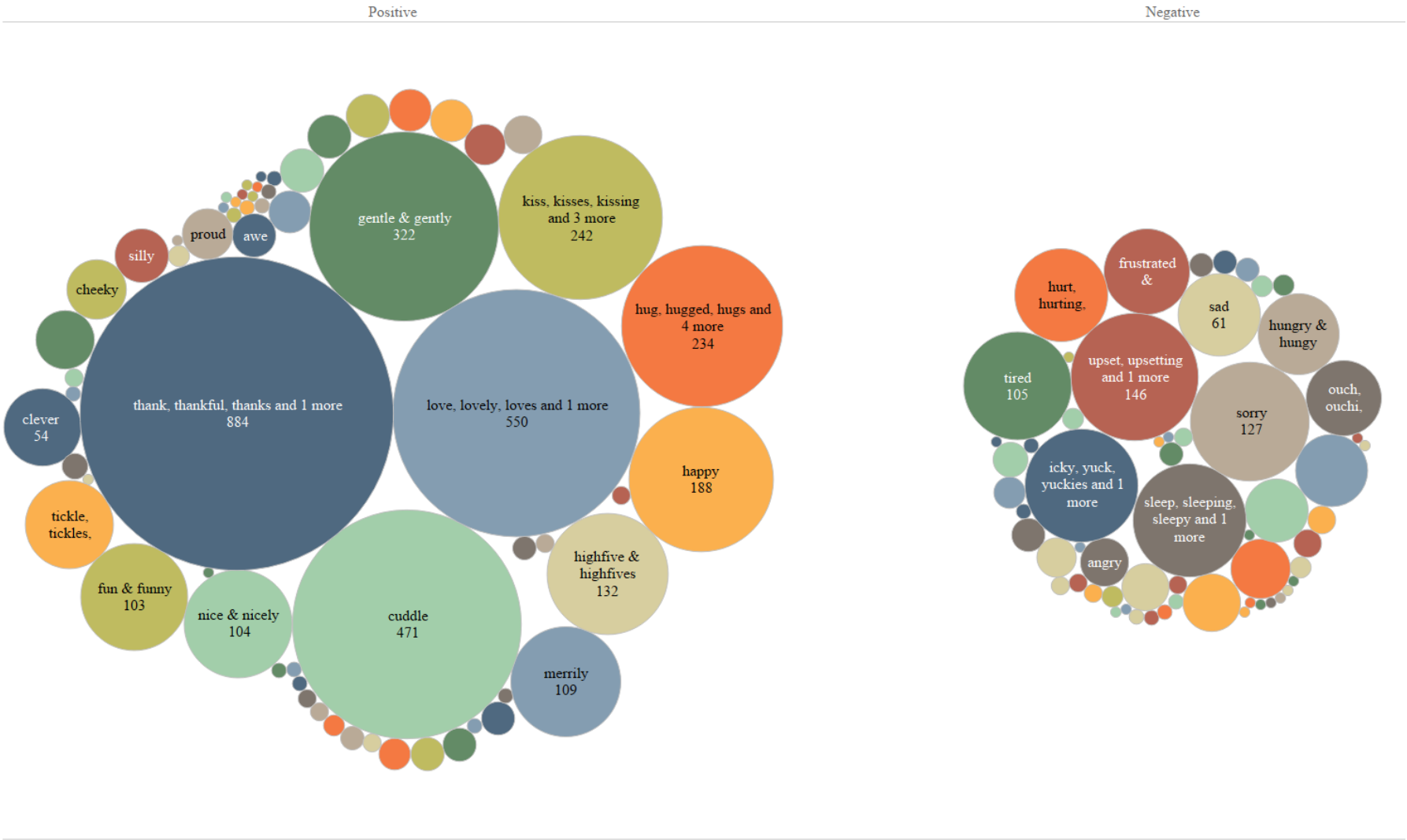


Figure 5. DECS Emotion Words by Positive and Negative Valence using Packed Bubble Chart in Tableau (2022)

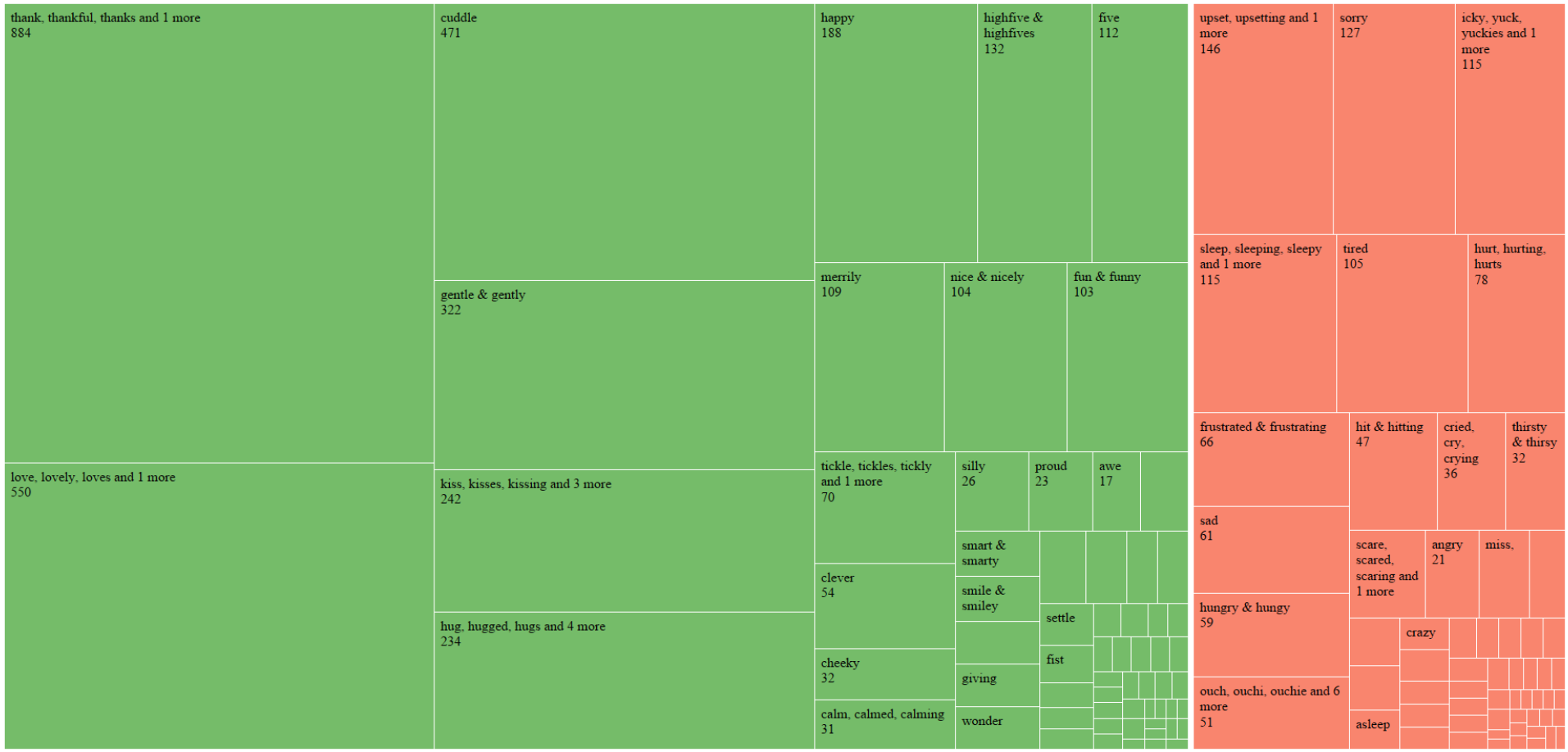
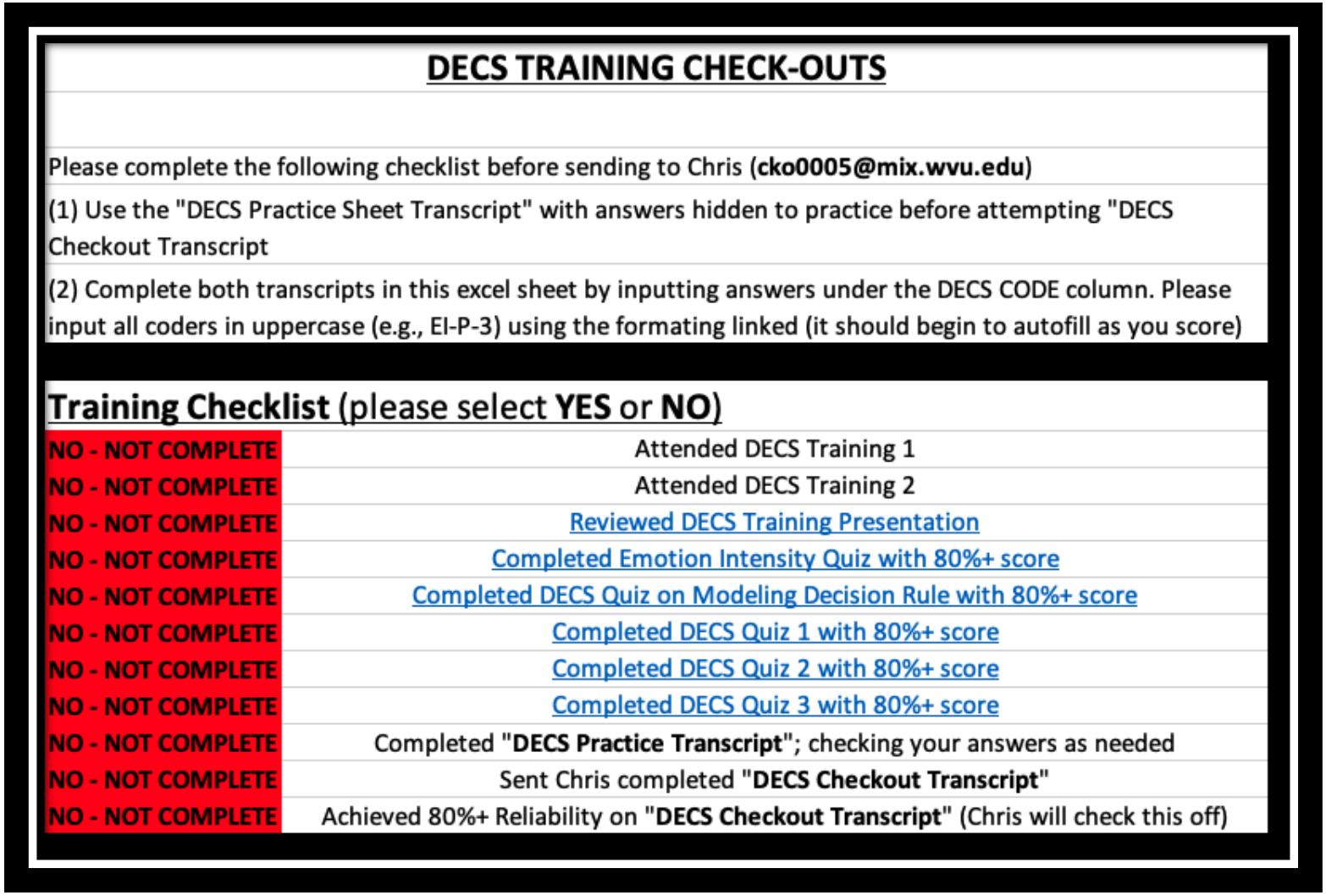


Figure 6. DECS Emotion Words by Positive and Negative Valence using TreeMap in Tableau (2022)



DECS TRAINING CHECK-OUTS

Please complete the following checklist before sending to Chris (**cko0005@mix.wvu.edu**)

(1) Use the "DECS Practice Sheet Transcript" with answers hidden to practice before attempting "DECS Checkout Transcript

(2) Complete both transcripts in this excel sheet by inputting answers under the DECS CODE column. Please input all coders in uppercase (e.g., EI-P-3) using the formating linked (it should begin to autofill as you score)

Training Checklist (please select **YES** or **NO**)

NO - NOT COMPLETE	Attended DECS Training 1
NO - NOT COMPLETE	Attended DECS Training 2
NO - NOT COMPLETE	Reviewed DECS Training Presentation
NO - NOT COMPLETE	Completed Emotion Intensity Quiz with 80%+ score
NO - NOT COMPLETE	Completed DECS Quiz on Modeling Decision Rule with 80%+ score
NO - NOT COMPLETE	Completed DECS Quiz 1 with 80%+ score
NO - NOT COMPLETE	Completed DECS Quiz 2 with 80%+ score
NO - NOT COMPLETE	Completed DECS Quiz 3 with 80%+ score
NO - NOT COMPLETE	Completed "**DECS Practice Transcript**"; checking your answers as needed
NO - NOT COMPLETE	Sent Chris completed "**DECS Checkout Transcript**"
NO - NOT COMPLETE	Achieved 80%+ Reliability on "**DECS Checkout Transcript**" (Chris will check this off)

Figure 7. Overview of standardized DECS training procedures and check-outs for certification. Please contact the primary investigator to request specific training (i.e., presentations, quizzes, DECS manuscript, and supplemental DECS infographics).

Appendix A: DPICS Systematic Review

DPICS Systematic Review Overview

A systematic narrative review with the purpose of mapping the literature on the topic of Dyadic Parent-Child Interaction Coding System (DPICS; Eyberg et al., 2013) was conducted in an effort to identify relevant psychometric data, conceptual measure development and construction information, and systematically review the literature on the DPICS. A PubMed search conducted by the author on 09 August 2021, using the search criteria ‘("DPICS" OR "dyadic parent-child interaction coding system" OR "dyadic parent child interaction coding system")’ yielded 27 citations. Per recommendations by Little et al. (2008), article eligibility criteria were determined using the PICO framework and language restrictions. The 27 citations were assessed for inclusion eligibility using the following criteria: (1) population; any child age, (2) intervention; any intervention, (3) any comparator or no comparator, (4) outcomes; measure development or construction information, validity data, and/or reliability data, (5) any type of study design will be included, including randomized trials, non-randomized controlled trials, and theoretical or conceptual articles, and (6) articles published in or translated in the English language. The imposed English language criteria has to do with limited translation abilities and resources. Moreover, it also provides transparency around the search criteria. After screening the abstract of articles based on inclusion criteria, 18 studies were further investigated by reviewing the full text. This resulted in the exclusion of 2 full text articles and inclusion of 16 full text articles. To widen the scope of potentially relevant studies, the references of the 18 articles that met inclusion criteria were scanned to identify relevant studies. Additionally, grey literature was investigated by reviewing grey literature resources (e.g., Eyberg et al., 2013). Please see “Supplemental Material: DPICS Literature Review” for additional details.

DPICS Literature Review

In a meta-analytic review of thirty-seven randomized controlled trials investigating parent training/education programs, seven studies utilized the DPICS which was the fourth most frequently used outcome measure with 43 different child behavior-related measures in total (Dretzke et al., 2005). Many studies use the DPICS to assess caregiver-child relationship quality (Owen et al., 2017; Ramos et al., 2018); however, it has also been used to explore associations between parenting behaviors and attrition (Barnett et al., 2017). The DPICS has also been employed to validate other direct-observation systems, such as the Parent Instruction-Giving Game and Youngsters (Hupp et al., 2008). More recent work by McCabe et al. (2010) has demonstrated cultural construct validity of the DPICS; that is, the DPICS can differentiate between clinically-referred and nonreferred low-income Mexican American families. The sensitivity of the DPICS has also been explored and validated in abusive parents; wherein, abusive parents demonstrate higher rates of negative parenting practices and lower rates of positive parenting practices (Hakman et al., 2009). Interestingly, the DPICS has also been associated with measures of caregiver emotional availability; specifically, negative caregiver and child behaviors (i.e., negative commands, no opportunity commands, negative caregiver touch, and child whine/yell/back-talk) were associated with poorer emotional availability (e.g., maternal intrusiveness, sensitivity, or hostility; Derscheid et al., 2018).

Until now, Zinsser et al. (2021) highlight, in a systematic review and meta-analysis, the field's reliance on self-report measures in the assessment of parental modeling of and responses to child emotions. The systematic review identified the rare use of observational methods; chiefly, Zinsser et al. (2021) identified no standardized, published, and rigorous evaluated observational measures of parental emotion-focused modeling and responding. As the DPICS

serves as a foundational framework for the structure of the DECS, a discussion of the discrepancy between the observational assessment, the DPICS, with comparable self-report measures is pertinent. Interesting, Moens et al. (2018) conducted a study analyzing the discrepancy between parent-report and observer-report; specifically, the study explored observations on the DPICS with survey data (i.e., Eyberg Child Behavior Inventory and Parenting Practices) in a cross-sectional sample of 368 parent-child dyads. Not only did Moens et al. (2018) demonstrate a high level of discrepancy between parent-reported and observed child and parenting behavior, the level of discrepancy was significantly higher for boys than for girls (r = -0.14, $p < 0.001$) and parent report accounts for the variance between genders in parent-observer discrepancy on negative behavior (t = 3.84, $p < 0.001$). In spite of the fact that the DECS and DPICS capture different constructs, this finding highlights the importance of adding a rigorously evaluated observational assessment for emotion-focused parenting behaviors. Simply, the DECS may serve as an observational method to investigate informant discrepancies. Additionally, the DECS could complement other relevant self-report measures since PCIT-T, like PCIT, is an assessment driven treatment which regularly employs both behavioral observation and parent-report (i.e., DPICS and ECBI).

As the structural coding foundation of the DECS, interrater agreement and kappa statistics findings on DPICS codes are of prime importance. Recently, McCabe et al. (2021) developed parent and child codes to capture imitation and demonstrated 98% interrater agreement for both codes; additionally, researchers found a moderate kappa coefficient for parent imitation (i.e., $\kappa = 0.54$) and a fair kappa coefficient for child imitation (i.e., $\kappa = 0.39$). For comparison, the interrater reliability kappa coefficients of other parent DPICS codes range from moderate (i.e., reflection, $\kappa = 0.59$; behavior description, $\kappa = 0.60$) to very high (i.e., direct

command, $\kappa = 0.82$) as reported by Eyberg et al. (2013). For positive parenting behavior (i.e., total count of labeled praises, reflections, and behavioral descriptions) and negative parenting behavior (i.e., total count of negative talk, questions, and commands) composites, Kohlhoff et al. (2021) found one-way intra-class correlation coefficients were 0.97 and 0.99, respectively. Chronis-Tuscano et al. (2020) demonstrated similar strong intraclass correlation for positive parenting (i.e., 0.99); similarly, negative parenting, which was distinctly a total count of negative talk, was found to have an intraclass correlation of 0.96. Cañas et al. (2021) demonstrated intraclass correlations for praise, question, and negative talk across each of the three DPICS situations (i.e., child-led play, parent-led play, and clean-up) ranging from 0.80 (i.e., negative talk in parent-led play) to 0.99 (i.e., praise in parent-led play, praise in clean-up, and question in child-led play). In fact, Klein et al. (2021) found that therapists reported more positive attitudes towards the DPICS than the ECBI; specifically, a sample of 323 providers was sampled with results that indicated therapist preferences/attitudes were influenced by type of information provided, perceived reliability of the measure, ease of measure implementation, and clinical usefulness (e.g., helpfulness in motivating patients and guiding treatment).

DPICS Systematic Review Conclusion

The overarching goal of the systematic DPICS narrative review was to highlight the prolific nature of the DPICS in research (Dretzke et al., 2005), including capturing a variety of caregiver-child constructs (e.g., relationship quality; Owen et al., 2017; Ramos et al., 2018), showing associations with caregiver emotional availability (Derscheid et al., 2018), demonstrating relations to patient attrition (Barnett et al., 2017), and using it in the validation of other direct observation systems (Hupp et al., 2008). The review also found evidence that PCIT providers prefer the DPICS over the ECBI, a self-report measure (Klein et al., 2021). Perhaps

more importantly, the systematic DPICS narrative review reinforced the vital role of the DPICS as the direct observation measure; when coupled with self-report measures (e.g., ECBI), it forms the critical multimodal assessment central to PCIT. Consequently, it also highlights the critical need for a comparable direct observation measure of emotion-focused parenting behaviors in the assessment-driven PCIT adaptation, PCIT-T.

Applying the DPICS Framework to the DECS

The foundation of the DECS coding system is linked to the DPICS, including the setting, modifications to the standardized Three DPICS Situations, classes of behavior to code, the complete thought rule, the two-second rule, talking to oneself, superfluous phrases, the distributive rule, verbalizations and vocalizations that are not coded, play talk, conditional statements, compound statements, and multiple consecutive verbalizations (Eyberg et al., 2013). First, key components to the setting include: a single caregiver-child dyad in playroom with developmentally appropriate toys, the therapist is positioned behind a one-way mirror, and the therapist provides instructions with a bug-in-the-ear (Eyberg et al., 2013). Similar to the Three DPICS Situations, six sequential 4-minute situations were used in the randomized controlled trial (Kohlhoff, Cibralic, Wallace, et al., 2020). The six situations include (1) free play, (2) child-led play, (3) frustration task, (4) toy reunion, (5) clean-up, and (6) love you task. Free play involves unstructured play between the caregiver-child. Child-led play involves having caregivers follow and let their toddler lead the play. The frustration task and toy reunion task involve removing the toys from the room and then returning them to the room. The clean-up task involves cleaning-up the toys in the room. The love you task involves having the caregiver convey their love for their child. While all six situations were included for the purpose of this psychometric evaluation of the DECS, future iterative psychometric evaluation may refine the situations in this analog

observation. That is, future research may reveal that certain analogue situations elicit the effects of verbal and nonverbal interactions in caregiver-toddler dyads. Moreover, refining the standardized situations necessary to measure caregiver-child emotion may positively impact implementation, adoption, and treatment fidelity. Contrary to the DPICS four classes of behavior, the DECS only codes caregiver verbalizations not vocalizations (e.g., yell and whine), physical behaviors (e.g., negative touch and hugs), and responses behaviors (e.g., compliance). All other basic coding rules are coded based on DPICS rules (e.g., the complete thought rule, the two-second rule, talking to oneself, superfluous phrases, the distributive rule, verbalizations and vocalizations that are not coded, play talk, conditional statements, compound statements, and multiple consecutive verbalizations; Eyberg et al., 2013).

DECS specific priority and decision rules are outlined in the DECS training manual. Importantly, a portion of the DECS coding rules is conceptually based on the DPICS decision and priority rules. DECS priority rules are used in instances when a verbalization contains more than one DECS code and would be coded based on the category that appears highest (e.g., biggest potential impact on the caregiver-child relationship) on the priority order (Eyberg et al., 2013). For example, “we love tea” is both an emotion modeling and emotion identification because “we” centers both the parent and the child; however, because modeling is a less direct form of instruction, emotion identification would be coded based on priority rules.

Appendix B: PCIT-T Systematic Review

PCIT-T Systematic Review Overview

A systematic narrative review mapping the Parent-Child Interaction Therapy with Toddlers (PCIT-T) literature was conducted to identify key concepts and sources of evidence. A PubMed search conducted by the author on 09 August 2021, using the search criteria '("Parent-Child Interaction Therapy" OR "PCIT" OR "parent child interaction therapy" OR "PCIT-T" or "parent child interaction therapy with toddler*") AND ("toddlers" OR "young child*")' yielded 243 citations. Study eligibility criteria were determined using the PICO framework (i.e., populations, interventions, comparisons, and outcomes), consideration for research design, and language restrictions as outlined by Littell et al. (2008). The 243 citations were assessed for inclusion eligibility using the following criteria: (1) population; young children three years of age or young or maximum mean age of three years and 11 months for group samples (i.e., ≤ 47 months of age), (2) intervention; Parent-Child Interaction Therapy (PCIT) or an adaptation of PCIT (e.g., PCIT-T, Infant Behavior Program [IBP], and PCIT-CALM), (3) any comparator or no comparator, (4) no specific outcome criteria were required, (5) any type of study design will be included, including randomized trials, non-randomized controlled trials, and quantitative single-case studies, and (6) articles published in or translated in the English language. Of note, the imposed English language criteria has to do with limited translation abilities and resources; moreover, it provides clear transparency around the search criteria, which could be extended later. Next, 202 articles were excluded after reviewing the abstracts based on the aforementioned criteria; specifically, 41 studies were eligible for inclusion after screening 243 abstracts. Afterward, 41 full-text articles were assessed for eligibility resulting in the exclusion of 24 full-text articles and the inclusion of 19 full-text articles. Additionally, the references of the 19

articles that met the inclusion criteria were scanned and used to identify any relevant studies that may have been missed in the electronic search. Please see "Supplemental Material: PCIT-T Literature Review" for a detailed list of 41 screened articles eligible for inclusion, 19 articles that met inclusion criteria, and additional studies identified from the references of the included 19 articles. Importantly, some of the additional studies identified from the references of the included 19 articles include children older than the identified inclusion criteria (e.g., preschool-age children). The purpose for including these additional studies is to highlight adaptations of PCIT that have incorporated strong emotion coaching components.

The previous section "From PCIT to PCIT-T" detailed the clinical adaptions between PCIT and PCIT-T, including a central focus on young children (e.g., developmentally appropriate life-enhancement coaching and guided compliance) and emotion coaching (e.g., CARES model). Since the CARES model, labeling emotions, and parent emotion regulation are all core components of PCIT-T, there is a critical need for an emotion coding system for measuring improvements in parenting emotion-focused practices and relevant toddler outcomes, such as internalizing behaviors. The systematic narrative review will chronologically review the literature according to two broad themes that were identified: (a) young child PCIT adaptions and (b) emotion coaching PCIT adaptations. The purpose of this structure is to highlight the need for the DECS by historically reviewing the PCIT literature related to the two core defining features of PCIT-T: (a) a focus on young children and (b) emotion coaching. First, "Young Child PCIT Adaptations" will narratively review the historical trajectory of PCIT applications with toddlers and infants, culminating with recent evidence for the efficacy and effectiveness of PCIT-T. Specifically, this will include a discussion of PCIT for medically complex young children, the Infant Behavior Program, and PCIT-Toddler. Second, "Emotion Coaching PCIT

Adaptations" will narratively review the extension and adaptation of PCIT-related treatments for internalizing disorders with emotion coaching techniques. For instance, this section will include a discussion on a Bravery Directed Interaction phase, the CALM program, the Turtle Program, PCIT-Emotion Development, and PCIT-Emotion Coaching.

Young Child PCIT Adaptations

The systematic PCIT-T review identified the two earliest sources of evidence for applying PCIT to younger children in studies investigating the efficacy of PCIT on young children born premature (Bagner et al., 2010; Graziano et al., 2012). Bagner et al. (2010) conducted a pilot RCT investigating the efficacy of PCIT in children with disruptive behaviors born premature (Bagner et al., 2010). This pilot RCT included 28 children between 20 and 60 months of age (i.e., M = 37.79, SD = 13.29); specifically, the 14 children in the intervention group had a mean age of 39.71 months with a standard deviation of 14.17 months (Bagner et al., 2010). Interestingly, Bagner et al. (2010) found effect sizes (i.e., d) ranging from 0.9 to 2.3. Data from a secondary data analysis of this pilot RCT found changes in ECBI Intensity scores from pre-treatment (i.e., M = 147.93 and SD = 39.70) to post-treatment (i.e., M = 71.73 and SD = 15.34; Bagner et al., 2012). On average, ECBI Intensity scores for the intervention groups improved from clinically significant at pre-treatment to normative at post-treatment. Graziano et al. (2012) also conducted a secondary analysis of the RCT by Bagner et al. (2010); however, this investigation included changes in caregiver parenting practices as measured on the DPICS. Graziano et al. (2012) found significant changes and large effect sizes in parenting "do" skills (i.e., d = 2.19) and "don't" skills (i.e., d = 2.94) from pre- to post-treatment. Specifically, pre-treatment "do" skills were on average 6.78 (i.e., SD = 6.14) and "don't" skills averaged 36.84 (i.e., SD = 15.66); at post-treatment "do" skills averaged 15.42 (i.e., SD = 7.78) while "don't"

skills were on average 12.05 (i.e., *SD* = 7.25; Graziano et al., 2012). These preliminary investigations demonstrated promising results on the efficacy of PCIT with prematurely born children with co-occurring disruptive behaviors. From an implementation standpoint, the CDI phase of PCIT fits well within a comprehensive early intervention system of care because it strengthens caregiver-child interactions and preventatively addresses child mental health concerns (Bagner et al., 2014).

Similar to children born premature, researchers have investigated the application of PCIT in young children with complex medical conditions. For instance, Shafi et al. (2018) effectively implemented a modified version of PCIT in a 3-year-old child, with an estimated developmental age of 18 months, multiple medical concerns (i.e., leukoencephalopathy with brainstem dysgenesis and muscular dystrophy), and disruptive behaviors (e.g., self-injury, daily headbanging, and screaming). Over the course of seven treatment sessions (i.e., 4 CDI sessions and 3 PDI sessions), positive parenting skills increased from 4 to 22 and negative parenting skills decreased from 44 to 1 (Shafi et al., 2018). Importantly, Shafi et al. (2018) made seven modifications during the course of PCIT: (1) added non-verbal actions for labeled praise (e.g., high-five), (2) expanded reflections to include reasonable sounds, (3) used future tense behavioral descriptions to organize play, (4) applied enthusiasm to even small changes in child behavior, (5) allowed verbal commands to include sign language and simple gestures (e.g., pointing), (6) praised any attempts at compliance, and (7) altered time-out to be in the corner of the room with mom's back turned away from the child. After treatment, the child demonstrated improvements in vocabulary, self-expression, and disruptive behavior at home and daycare (Shafi et al., 2018).

In 2016, Bagner et al. first defined and investigated the efficacy of the application of a home-based adaptation of the child-directed interaction phase of PCIT known as the Infant Behavior Program (IBP). Prior, no previous research had taken this unique approach to adapt a component of PCIT to infants. Participants in this randomized controlled trial included 60 mothers and their infants at-risk for behavioral problems (M=13.5 months old, SD=1.31) randomized to either IBP (n=31) or standard care (n=29; Bagner et al., 2016); moreover, participants completed a baseline assessment in their home (i.e., time 1), play observations at the post-treatment assessment 2 months later (i.e., Time 2), 3 months later (i.e., Time 3), and 6 months later (i.e., Time 4). The IBP retains the core components of PCIT (e.g., CDI teach session, DPICS coding, CDI coach sessions, PRIDE skills coaching, and selective ignoring for child disruptive behaviors; McNeil & Hembree-Kigin, 2010); however, Bagner et al. (2016) identified that the adaptation of PCIT excludes the PDI phase and tailored coaching to meet the developmental needs of infants, including adding non-verbal praise with verbal praise (e.g., clapping) and encouraging caregivers to repeat appropriate vocalizations. Results from this initial efficacy investigation were promising as infants in the IBP group demonstrated higher compliance, lower externalizing, and lower internalizing behavior problems compared to infants in the standard care group (Bagner et al., 2016). Additionally, Bagner et al. (2016) found that mothers in the IBP group showed a significantly higher proportion of positive parenting practices and a significantly lower proportion of negative parenting practices compared to the comparator treatment group.

Participants previously discussed (Bagner et al., 2016) were included in another investigation by Blizzard et al. (2018) that added evidence on the impact of IBP on responsive caregiving, an attachment-based construct. Specifically, Blizzard et al. (2018) found that IBP

group membership significantly predicted higher levels of responsive caregiving at post-intervention and follow-up assessments. Moreover, improvements in positive behavioral parenting skills (i.e., praise, descriptions, and reflections) mediated the direct effect of IBP on attachment-based caregiving behaviors (i.e., warmth and sensitivity). The contributions of research on IBP made by Bagner et al. (2016) and Blizzard et al. (2018) generate wide interest for a number of reasons: (1) it provides evidence for the efficacy of applying core PCIT components (e.g., CDI phase and DPICS coaching) to an infant population, (2) it demonstrates that improvements in positive parenting behaviors mediate improvements in caregiver-infant attachment, and (3) it highlights the potential impact of short-term early intervention on improving child compliance, parenting skills, and responsive caregiving (i.e., an average of 6.1 sessions lasting between 60 to 90 minutes).

Centering an investigation on language, Morningstar et al. (2019) utilized the aforementioned dataset (i.e., Bagner et al., 2016) to investigate (1) the effect of IBP on parental vocal prosody (e.g., pitch and tempo) and (2) whether the parental vocal cues mediated the effect of IBP on infant language. At post-treatment, mothers from the IBP group used speech with greater pitch range and slower tempo compared to mothers in the control group; moreover, these speech patterns (i.e., slower tempo, higher pitch, and greater pitch range) are the vocal cues related to infant-directed speech or motherese (Morningstar et al., 2019). Interestingly, Morningstar et al. (2019) found that slower speech tempo mediated the relationship between intervention and greater infant word product at 6-month post-treatment, which may be due to important language development milestones that occur between 18 and 24 months of age. While IBP coaches caregivers on the speech content (e.g., praise), it does not coach caregivers on how to deliver this content (e.g., vocal prosody); interestingly, this follow-up investigation on an

adaptation of PCIT demonstrated positive changes in how caregivers communicated with their infants (Morningstar et al., 2019). In a recent qualitative evidence synthesis on the experiences and perceptions of PCIT from parents of preschool children with communication difficulties, after PCIT most noticed improvements in their child's communication, reported increased connection with their child, and felt empowered by their newly gained knowledge and skills (O'Toole et al., 2021). Thus, caregivers of children under 2 years qualitatively report similar improvements in communication, connectedness, and parenting practices as demonstrated in the broader PCIT literature.

The earliest evidence for PCIT-T was an effectiveness and acceptability study conducted by Kohlhoff and Morgan (2014). In this retrospective investigation, outcomes of families (N = 87) who completed PCIT or PCIT-T were compared in three groups (n = 29 families in each group): (1) under 2 years age PCIT-T group, (2) 2-3 years age PCIT group, and 3-4 years age PCIT group (Kohlhoff & Morgan, 2014). PCIT-T was associated with a range of positive treatment outcomes; specifically, (a) significant decreases in disruptive behaviors for all age groups (i.e., ECBI Intensity, ECBI Problem), (b) significant improvements in maternal distress for all age groups, a significant reduction in average parent commands (i.e., 38.2%; DPICS), a significant increase in average parent praises (i.e., 13.5%; DPICS), and high parental satisfaction (Kohlhoff & Morgan, 2014). While this initial study had some limitations (e.g., no control group and small sample size), it provided the first quantitative evidence of the successful application of PCIT-T in young children with disruptive behaviors.

Complementing the earliest quantitative investigation (i.e., Kohlhoff & Morgan, 2014), Kohlhoff, Cibralic, and Morgan (2020) utilized a qualitative method (i.e., thematic analysis of semi-structured interviews) with 5 parents who received the CDI phase of PCIT-T. Adding to the

evidence-based, results showed that parents positively perceived treatment, including improved parental confidence and relationship quality (Kohlhoff, Cibralic, & Morgan, 2020). Another study utilized an open trial design from participants initially recruited to participate in the larger RCT (Kohlhoff, Morgan, et al., 2020); specifically, participants included 56 caregivers and their young children (*M* = 19 months old). This study demonstrated that the CDI phase of PCIT-T was associated with improvements in a wide variety of domains at post-treatment and at 4-months follow-up; specifically, the study showed significant improvements at both timepoints for (a) positive and negative parenting behaviors, (b) emotional availability, (c) child behavior problems, and (d) parenting stress (Kohlhoff, Morgan, et al., 2020). Thus, the evidence is promising on the effectiveness of the CDI phase of PCIT-T with respect to long-term impacts on parenting behaviors, child problem behaviors, parenting stress, and caregiver sensitivity. In another study, Kohlhoff et al. (2021) investigated the immediate effects of the efficacy of the CDI phase of PCIT. Using a similar design but focused on examining differences between pre-treatment and 8-week post-treatment only, Kohlhoff et al. (2021) found the rates of reliable change improvement were higher in the intervention group than the waitlist control across nearly all outcomes variables (i.e., all parental skills; emotional availability sensitivity, structuring, non-intrusiveness, and non-hostility; child externalizing and internalizing behavior; all parental stress variables). Moreover, the intervention group from time 1 to time 2 showed large and medium effect sizes for multiple outcome variables: (a) positive parental skills (*d* = 2.09), (b) negative parental skills (*d* = 1.07), (c) parental sensitivity (*d* = 0.83), (d) child externalizing behavior (*d* = 0.87), (e) child internalizing behavior (*d* = 0.92), (f) parental structuring (*d* = 0.62), (g) parental non-intrusiveness (*d* = 0.66), (h) perception of the child as difficult (*d* = 0.51), total parental stress (*d* = 0.52), and (i) parental mood (*d* = 0.38). As the aforementioned studies demonstrate,

the CDI phase of PCIT-T has been associated with multiple positive parenting and child outcomes immediately after treatment and at a 4-month follow-up. Future research ought to include investigations on the efficacy of both the CDI and PDI phases of PCIT-T. While it represents a newer PCIT adaptation, PCIT-T demonstrates promise as an early intervention for toddlers with comorbid disruptive behaviors.

Emotion Coaching PCIT Adaptations

The proliferation of research applying PCIT to internalizing disorders is particularly relevant to the development of PCIT-T not only because it addresses emotion-specific concerns, but also because PCIT is well-positioned as a behavioral parent intervention to address these concerns in a developmentally appropriate way (Carpenter et al., 2014; Puliafico et al., 2012). Because caregivers are the agents of change in PCIT, it capitalizes on altering caregiver-child interactions instead of child cognitive strategies to address internalizing concerns. Although PCIT was initially created to address externalizing concerns, the parenting-based approach can also be applied to ameliorating caregiver-child interactions linked to internalizing disorders (e.g., intrusive, overprotective, and controlling parental behaviors; Carpenter et al., 2014).

While Puliafico et al. (2012) provide a conceptual overview and narrative review on young children ages 3 to 8, the authors provided relevant background information on the extension of PCIT for internalizing disorders (i.e., separation anxiety disorder, social phobia, generalized anxiety disorder, and specific phobia) including emotion-relevant modifications to PCIT (i.e., bravery-directed interaction [BDI] and the CALM program). For separation anxiety, PCIT has been adapted to include BDI, a new treatment phase situated between CDI and PDI; the BDI component includes teaching caregivers about the cycle of anxiety, ways to apply CDI skills in separation situations, and methods for conducting exposure exercises (Puliafico et al.,

2012). Building on the BDI component, the PCIT-CALM Program (i.e., Coaching Approach behavior and Leading by Modeling) extends applications to other internalizing disorders with a novel set of skills for caregivers to learn and practice during in vivo exposures, known as DADS: describe the feared situations, approach the fearful situation, directly command the child to approach the feared situation, and selectively attend to child approach behavior (Puliafico et al., 2012).

The Turtle Program constitutes another unique adaptation of PCIT that capitalizes on a group format wherein parallel parent and child groups occur simultaneously over the course of the 8-week early intervention program (Carpenter et al., 2014). In a recent randomized controlled trial, Chronis-Tuscano et al. (2021) recruited and randomized 151 caregivers and their 3.5 to 5-year-old children with behavioral inhibition (e.g., tendency to withdraw in novel situations) to either the Turtle Program or a gold-standard comparator treatment (i.e., Cool Little Kids). While both programs showed significant improvements in child behavioral inhibition, child anxiety severity, family accommodation, and child impairment, the Turtle Program demonstrated significant increases in observed engagement, positive affect directed at children, and decreases in negative control compared to the comparator group (Chronis-Tuscano et al., 2021). While these findings focus on children rather than infants, it lends additional support for the application of an adaption of PCIT targeting improvements in child internalizing behaviors, namely behavioral inhibition.

Another emotion-focused adaptation of PCIT includes Parent-Child Interaction Therapy - Emotion Development (PCIT-ED; Lenze et al., 2011). In PCIT-ED, the CDI and PDI modules are limited to six sessions followed by eight sessions of the ED module which focuses on enhancing the child's emotional competence by improving their ability to identify, label, and

regulate their emotions (Lenze et al., 2011). The ED modules include teach and coach sessions dedicated to (a) addressing parental histories of emotional expression as it relates to their child's emotional expression and (b) coach sessions with caregivers focused on labeling child emotions, helping their child regulate intense emotions, and practicing relaxation techniques in-vivo as a way to manage big emotions (Lenze et al, 2011). An open trial pilot of PCIT-ED with preschool children (i.e., 3 to 5 years of age) demonstrated decreased depressive symptoms and behavioral problems at post-treatment. While children showed improvement in internalizing and externalizing concerns, they did not demonstrate significant changes in their ability to differentiate emotions. The utility of the DECS may extend to preschool populations and benefit other emotion-focused PCIT adaptations. While PCIT-ED utilizes a psychoeducation teach component paired with parent training coach component, parental emotion socialization practices were not a primary outcome of interest (Lenze et al., 2011). In a narrative review of emotion socialization parenting programs by England-Mason and Gonzalez (2020), numerous studies lacked an examination of child emotion regulation, critical investigation of emotion socialization practices, and a focus on children less than 3 years of age.

Novel applications and modifications to PCIT-ED have been conducted by Chronis-Tuscano et al. (2016) by piloting adaptations of PCIT-ED for children with Attention-Deficit Hyperactivity Disorder (ADHD). First, six children with ADHD were treated with standard PCIT-ED (Chronis-Tuscano et al., 2016); however, completion of CDI and PDI were contingent upon mastery criteria as opposed to the strict 6 session criteria as outlined by Lenze et al. (2011). Using knowledge gained from these initial pilots, subsequent applications of PCIT-ED were adapted to form the basis of PCIT-Emotion Coaching (PCIT-ECo; Chronis-Tuscano et al., 2016): (1) added clear direction for when caregivers should use PDI or emotion coaching skills, (2)

remove sessions involving direct instruction of emotion identification and relaxation techniques, (3) remove task designed to elicit guilt, (4) employed a school-home daily report card, and (5) removed session focused on joy coaching. With the most recent iteration of PCIT-ECo, Chronis-Tuscano et al. (2016) suggested integrating emotion coaching with CDI and PDI from the beginning as a way to potentially mitigate treatment interference concerns, increase parents exposure to a range of child emotions, and provide greater opportunities for flexible skillful practice, including deciding whether to use PDI and/or emotion coaching.

PCIT-T Systematic Review Conclusion

The overall goal of the PCIT-T narrative review was to synthesize PCIT research using a transparent and systematic method through the implementation of clear search criteria, study eligibility criteria using the PICO framework, and inclusion of relevant grey literature. The systematic review identified a trajectory of extending PCIT in young children with children born prematurely (Bagner et al., 2012; Bagner et al., 2010; Graziano et al., 2012), young children with complex medical conditions (Shafi et al., 2018), and implementing a home-based CDI phase for infants (i.e., Infant Behavior Program; Bagner, 2016; Morningstar et al., 2019). These earlier studies were important in (a) providing efficacy for extending the PCIT model to younger children, (b) experimenting with modification to PCIT treatment components with consideration for early child development (e.g., altered time-out and the inclusion of sign language), and (c) demonstrating PCIT improves infant compliance, parenting skills, and responsive caregiving. This foundation of young child PCIT adaptations culminates in the development of PCIT-T (Kohlhoff, Cibralic, & Morgan, 2020; Kohlhoff & Morgan, 2014; Kohlhoff, Morgan, et al., 2020; Kohlhoff et al., 2021). While standard PCIT focuses on training parents in skills targeting improvements in externalizing behaviors, PCIT-T has added a strong emotion socialization

component. This added focus of PCIT-T supports the need for a well-established and evaluated measure for measuring caregiver-toddler emotion behaviors. Additionally, other studies were included in the systematic review that highlighted PCIT-related treatments for internalizing disorders that include emotion coaching extensions. Although these studies tended to focus on preschool-age children compared to toddlers, these studies were important to include since the DECS may serve as a useful tool for the proliferation of the next generation of PCIT programs targeting emotion coaching for children with internalizing difficulties or concerns (e.g., separation anxiety, depression, and ADHD). A core component of standard PCIT includes a well-established behavioral observation for measures a host of positive parenting practices (e.g. labeled praise, reflection, and behavioral descriptions), negative parenting practices (e.g., negative talk and commands), and child behaviors (e.g., child noncompliance), known as the Dyadic Parent-Child Interaction Coding System (DPICS; Robinson & Eyberg, 1981; Eyberg et al., 2013). This robust direct observation system, iteratively refined in numerous studies over the 40 years, lacks a system for coding caregiver-child emotion-focused content and behaviors. For this reason, the psychometric validation of the DECS becomes increasingly critical as PCIT-T and other emotion coaching PCIT programs begin to burgeon.

Appendix C: Study Measures

Demographic Information Form

Child's First Name: _____

DOB: _____

Today's Date: _____

Child's Sex:

- Male
- Female

Mother's First Name: _____

DOB _____

Mother's Occupation: _____

Mother's Education:

- Year 10
- Year 12
- TAFE/other post school qualifications
- University – undergraduate degree
- University – postgraduate degree

Mother's Ethnicity:

- Caucasian
- Aboriginal/Torres Strait Islander
- European
- Hispanic
- Middle Eastern

- Asian
- Other (please specify)

Father's First Name: _____

DOB: _____

Father's Occupation: _____

Father's Education:

- Year 10
- Year 12
- TAFE/other post school qualifications
- University – undergraduate degree
- University – postgraduate degree

Father's Ethnicity:

- Caucasian
- Aboriginal/Torres Strait Islander
- European
- Hispanic
- Middle Eastern
- Asian
- Other (please specify) _____

Marital Status of Parents:

- Married
- De-facto
- Separated

- Widowed
- Single

Dominant languages spoken in the home: _____

Other languages spoken in the home: _____

Number of people living in the household: _____

Estimated Family Income:

- Less than 50,000 per year
- 50,000-75,000 per year
- 76,000-100,000 per year
- 101,000-150,000 per year
- More than 150,000 per year

Difficulties in Emotion Regulation Scale

Please do not copy or share the DERS found below (Gratz et al., 2004).

		Response Type				
Number	Item	Almost Never	Sometimes	About half the time	Most of the time	Almost always
1	I am clear about my feeling	1	2	3	4	5
2	I pay attention to how I feel	1	2	3	4	5
3	I experience my emotions as overwhelming and out of control	1	2	3	4	5
4	I have no idea how I am feeling	1	2	3	4	5
5	I have difficulty making sense out of my feelings	1	2	3	4	5
6	I am attentive to my feelings	1	2	3	4	5
7	I know exactly how I am feeling	1	2	3	4	5
8	I care about what I am feeling	1	2	3	4	5
9	I am confused about how I feel	1	2	3	4	5
10	When I’m upset, I acknowledge my emotions	1	2	3	4	5
11	When I’m upset, I become angry with myself for feeling that way	1	2	3	4	5
12	When I’m upset, I become embarrassed for feeling that way	1	2	3	4	5
13	When I’m upset, I have difficulty getting work done	1	2	3	4	5

14	When I'm upset, I become out of control	1	2	3	4	5
15	When I'm upset, I believe that I will remain that way for a long time	1	2	3	4	5
16	When I'm upset, I believe that I'll end up feeling very depressed	1	2	3	4	5
17	When I'm upset, I believe that my feelings are valid and important	1	2	3	4	5
18	When I'm upset, I have difficulty focusing on other things	1	2	3	4	5
19	When I'm upset, I feel out of control	1	2	3	4	5
20	When I'm upset, I can still get things done	1	2	3	4	5
21	When I'm upset, I feel ashamed with myself for feeling that way	1	2	3	4	5
22	When I'm upset, I know that I can find a way to eventually feel better	1	2	3	4	5
23	When I'm upset, I feel like I am weak	1	2	3	4	5
24	When I'm upset, I feel like I can remain in control of my behaviours	1	2	3	4	5
25	When I'm upset, I feel guilty for feeling that way	1	2	3	4	5
26	When I'm upset, I have difficulty concentrating	1	2	3	4	5
27	When I'm upset, I have difficulty controlling my	1	2	3	4	5

	behaviours					
28	When I'm upset, I believe that there is nothing I can do to make myself feel better	1	2	3	4	5
29	When I'm upset, I become irritated with myself for feeling that way	1	2	3	4	5
30	When I'm upset, I start to feel very bad about myself	1	2	3	4	5
31	When I'm upset, I believe that wallowing in it is all I can do	1	2	3	4	5
32	When I'm upset, I lose control over my behaviours	1	2	3	4	5
33	When I'm upset, I have difficulty thinking about anything else	1	2	3	4	5
34	When I'm upset I take time to figure out what I'm really feeling.	1	2	3	4	5
35	When I'm upset, it takes me a long time to feel better	1	2	3	4	5
36	When I'm upset, my emotions feel overwhelming	1	2	3	4	5

Dyadic Parent-Child Interaction Coding System

Category	Code	Definition
Parent Neutral Talk	TA	"... statements introduce information about other people, objects, events, or activities, or simply acknowledge current activity, but do not direct, describe or evaluate the child's current or immediately completed behavior." (Eyberg et al., 2013, p. 89)
Parent Behavior Description	BD	"... non-evaluative, declarative sentences or phrases in which the subject is the other person and the verb describes that person's ongoing or immediately completed (< 5 sec.) observable verbal or nonverbal behavior." (Eyberg et al., 2013, p. 83)
Parent Reflection	RF	"... declarative phrase or statement that has the same meaning as the child's verbalization. The reflection may repeat, paraphrase, or elaborate upon the child's verbalization but may not change the meaning of the child's statement or interpret unstated ideas." (Eyberg et al., 2013, p. 77)
Parent Question	QU	"... verbal inquiries from one person to another that are distinguishable from declarative statements by having a rising inflection at the end of by having the sentence structure of a question. Questions request an answer but do not suggest that a behavior is to be performed by the other person." (Eyberg et al., 2013, p. 69)
Parent Unlabeled Praise	UP	"… provides a positive evaluation of the child, an attribute of the child, or a nonspecific activity, behavior, or product of the child." (Eyberg et al., 2013, p. 65)
Parent Labeled Praise	LP	"… provides a positive evaluation of a specific attribute, product, or behavior of the child." (Eyberg et al., 2013, p. 61)
Parent Direct Command	DC	"... declarative statements that contain an order or direction for vocal or motor behavior, or a mental or internal, unobservable action to be performed and indicate that the child is to perform this behavior." (Eyberg et al., 2013, p. 47).

Parent Indirect Command	IC	"... a suggestion for a vocal or motor behavior or a mental or internal, unobservable action to be performed that is stated in question form or such that it is unclear if the child must complete the request." (Eyberg et al., 2013, p. 49).
Parent Negative talk	NTA	"… a verbal expression of disapproval of the child or the child's attributes, activities, products, or choices. … also includes sassy, sarcastic, rude, or impudent speech." (Eyberg et al., 2013, p. 33)
Child Compliance	CO	"... when the child performs, begins to perform, or attempts to perform a behavior requested by the parent within the 5-second interval following the command." (Eyberg et al., 2013, p. 131)
Child Noncompliance	NC	"… following a Direct or Indirect Command given by the parent when the child does not perform, does not attempt to perform, or stops attempting to perform the requested behavior within the 5-second interval following the command." (Eyberg et al., 2013, p.133)
Child No Opportunity for Compliance	NOC	"… when the child is not given an adequate chance to comply with a command or if it is not possible to determine if the child has complied." (Eyberg et al., 2013, p. 135)
Child Yell	YE	"… a screech, scream, or shout, or any verbalization or vocalization that is so loud as to be aversive." (Eyberg et al., 2013, p. 221)
Child Whine	WH	"… an utterance or verbalization emitted in a slurring, moaning, high-pitched, or falsetto voice." (Eyberg et al., 2013, p. 223)

Supplemental Material: DPICS Literature Review

18 studies were eligible for inclusion after screening 27 abstracts.

1. Klein, C. C., Luis Sanchez, B. E., & Barnett, M. L. (2021). Improving the Quality of Children's Mental Health Care with Progress Measures: A Mixed-Methods Study of PCIT Therapist Attitudes. Administration and policy in mental health, 10.1007/s10488-021-01156-0. Advance online publication. https://doi.org/10.1007/s10488-021-01156-0
2. Cañas, M., Ibabe, I., Arruabarrena, I., & De Paúl, J. (2021). Dyadic Parent-Child Interaction Coding System (DPICS): Factorial Structure and Concurrent Validity. Psicothema, 33(2), 328–336. https://doi.org/10.7334/psicothema2020.429
3. Chronis-Tuscano, A., French, W., Strickland, J., Sasser, T., Gonzalez, E., Whitlock, K. B., & Stein, M. A. (2020). Acute Effects of Parent Stimulant Medication Versus Behavioral Parent Training on Mothers' ADHD, Parenting Behavior, and At-Risk Children. The Journal of clinical psychiatry, 81(5), 19m13173. https://doi.org/10.4088/JCP.19m13173
4. Kohlhoff, J., Morgan, S., Briggs, N., Egan, R., & Niec, L. (2021). Parent-Child Interaction Therapy with Toddlers: A Community-based Randomized Controlled Trial with Children Aged 14-24 Months. Journal of clinical child and adolescent psychology : the official journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 50(3), 411–426. https://doi.org/10.1080/15374416.2020.1723599
5. McCabe, K. M., Sakamoto, M., Rosas, Y. G., Kehoe, K., La, R., Zerr, A., & Yeh, M. (2021). Keeping an "I" on PRIDE: Measuring Imitation in Parent-Child Interaction Therapy. Behavior therapy, 52(1), 28–38. https://doi.org/10.1016/j.beth.2020.01.009

6. Moens, M. A., Weeland, J., Van der Giessen, D., Chhangur, R. R., & Overbeek, G. (2018). In the Eye of the Beholder? Parent-Observer Discrepancies in Parenting and Child Disruptive Behavior Assessments. Journal of abnormal child psychology, 46(6), 1147–1159. https://doi.org/10.1007/s10802-017-0381-7
7. Derscheid, D. J., Fogg, L. F., Julion, W., Johnson, M. E., Tucker, S., & Delaney, K. R. (2018). Emotional Availability Scale Among Three U.S. Race/Ethnic Groups. Western journal of nursing research, 193945918776617. Advance online publication. https://doi.org/10.1177/0193945918776617
8. Ramos, G., Blizzard, A. M., Barroso, N. E., & Bagner, D. M. (2018). Parent Training and Skill Acquisition and Utilization Among Spanish- and English-Speaking Latino Families. Journal of child and family studies, 27(1), 268–279. https://doi.org/10.1007/s10826-017-0881-7
9. Owen, D. A., Griffith, N., & Hutchings, J. (2017). Evaluation of the COPING parent online universal programme: study protocol for a pilot randomised controlled trial. BMJ open, 7(4), e013381. https://doi.org/10.1136/bmjopen-2016-013381
10. Niec, L. N., Barnett, M. L., Prewett, M. S., & Shanley Chatham, J. R. (2016). Group parent-child interaction therapy: A randomized control trial for the treatment of conduct problems in young children. Journal of consulting and clinical psychology, 84(8), 682–698. https://doi.org/10.1037/a0040218
11. Bjørseth, Å., & Wichstrøm, L. (2016). Effectiveness of Parent-Child Interaction Therapy (PCIT) in the Treatment of Young Children's Behavior Problems. A Randomized Controlled Study. PloS one, 11(9), e0159845. https://doi.org/10.1371/journal.pone.0159845

12. Barnett, M. L., Niec, L. N., Peer, S. O., Jent, J. F., Weinstein, A., Gisbert, P., & Simpson, G. (2017). Successful Therapist-Parent Coaching: How In Vivo Feedback Relates to Parent Engagement in Parent-Child Interaction Therapy. Journal of clinical child and adolescent psychology : the official journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 46(6), 895–902. https://doi.org/10.1080/15374416.2015.1063428
13. Borden, L. A., Herman, K. C., Stormont, M., Goel, N., Darney, D., Reinke, W. M., & Webster-Stratton, C. (2014). Latent profile analysis of observed parenting behaviors in a clinic sample. Journal of abnormal child psychology, 42(5), 731–742. https://doi.org/10.1007/s10802-013-9815-z
14. Sheeber, L. B., Seeley, J. R., Feil, E. G., Davis, B., Sorensen, E., Kosty, D. B., & Lewinsohn, P. M. (2012). Development and pilot evaluation of an Internet-facilitated cognitive-behavioral intervention for maternal depression. Journal of consulting and clinical psychology, 80(5), 739–749. https://doi.org/10.1037/a0028820
15. Hakman, M., Chaffin, M., Funderburk, B., & Silovsky, J. F. (2009). Change trajectories for parent-child interaction sequences during parent-child interaction therapy for child physical abuse. Child abuse & neglect, 33(7), 461–470. https://doi.org/10.1016/j.chiabu.2008.08.003
16. McCabe, K., Yeh, M., Lau, A., Argote, C. B., & Liang, J. (2010). Parent-child interactions among low-income Mexican American parents and preschoolers: do clinic-referred families differ from nonreferred families?. Behavior therapy, 41(1), 82–92. https://doi.org/10.1016/j.beth.2009.01.003

17. Hupp, S. D., Reitman, D., Forde, D. A., Shriver, M. D., & Kelley, M. L. (2008). Advancing the assessment of parent-child interactions: development of the Parent Instruction-Giving Game with Youngsters. Behavior therapy, 39(1), 91–106. https://doi.org/10.1016/j.beth.2007.05.004
18. Dretzke, J., Frew, E., Davenport, C., Barlow, J., Stewart-Brown, S., Sandercock, J., Bayliss, S., Raftery, J., Hyde, C., & Taylor, R. (2005). The effectiveness and cost-effectiveness of parent training/education programmes for the treatment of conduct disorder, including oppositional defiant disorder, in children. Health technology assessment (Winchester, England), 9(50), iii–233. https://doi.org/10.3310/hta9500

16 articles were eligible for inclusion after reviewing the screened 18 articles.

1. Klein, C. C., Luis Sanchez, B. E., & Barnett, M. L. (2021). Improving the Quality of Children's Mental Health Care with Progress Measures: A Mixed-Methods Study of PCIT Therapist Attitudes. Administration and policy in mental health, 10.1007/s10488-021-01156-0. Advance online publication. https://doi.org/10.1007/s10488-021-01156-0
2. Cañas, M., Ibabe, I., Arruabarrena, I., & De Paúl, J. (2021). Dyadic Parent-Child Interaction Coding System (DPICS): Factorial Structure and Concurrent Validity. Psicothema, 33(2), 328–336. https://doi.org/10.7334/psicothema2020.429
3. Chronis-Tuscano, A., French, W., Strickland, J., Sasser, T., Gonzalez, E., Whitlock, K. B., & Stein, M. A. (2020). Acute Effects of Parent Stimulant Medication Versus Behavioral Parent Training on Mothers' ADHD, Parenting Behavior, and At-Risk Children. The Journal of clinical psychiatry, 81(5), 19m13173. https://doi.org/10.4088/JCP.19m13173

4. Kohlhoff, J., Morgan, S., Briggs, N., Egan, R., & Niec, L. (2021). Parent-Child Interaction Therapy with Toddlers: A Community-based Randomized Controlled Trial with Children Aged 14-24 Months. Journal of clinical child and adolescent psychology : the official journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 50(3), 411–426. https://doi.org/10.1080/15374416.2020.1723599
5. McCabe, K. M., Sakamoto, M., Rosas, Y. G., Kehoe, K., La, R., Zerr, A., & Yeh, M. (2021). Keeping an "I" on PRIDE: Measuring Imitation in Parent-Child Interaction Therapy. Behavior therapy, 52(1), 28–38. https://doi.org/10.1016/j.beth.2020.01.009
6. Moens, M. A., Weeland, J., Van der Giessen, D., Chhangur, R. R., & Overbeek, G. (2018). In the Eye of the Beholder? Parent-Observer Discrepancies in Parenting and Child Disruptive Behavior Assessments. Journal of abnormal child psychology, 46(6), 1147–1159. https://doi.org/10.1007/s10802-017-0381-7
7. Derscheid, D. J., Fogg, L. F., Julion, W., Johnson, M. E., Tucker, S., & Delaney, K. R. (2018). Emotional Availability Scale Among Three U.S. Race/Ethnic Groups. Western journal of nursing research, 193945918776617. Advance online publication. https://doi.org/10.1177/0193945918776617
8. Ramos, G., Blizzard, A. M., Barroso, N. E., & Bagner, D. M. (2018). Parent Training and Skill Acquisition and Utilization Among Spanish- and English-Speaking Latino Families. Journal of child and family studies, 27(1), 268–279. https://doi.org/10.1007/s10826-017-0881-7

9. Owen, D. A., Griffith, N., & Hutchings, J. (2017). Evaluation of the COPING parent online universal programme: study protocol for a pilot randomised controlled trial. BMJ open, 7(4), e013381. https://doi.org/10.1136/bmjopen-2016-013381
10. Niec, L. N., Barnett, M. L., Prewett, M. S., & Shanley Chatham, J. R. (2016). Group parent-child interaction therapy: A randomized control trial for the treatment of conduct problems in young children. Journal of consulting and clinical psychology, 84(8), 682–698. https://doi.org/10.1037/a0040218
11. Bjørseth, Å., & Wichstrøm, L. (2016). Effectiveness of Parent-Child Interaction Therapy (PCIT) in the Treatment of Young Children's Behavior Problems. A Randomized Controlled Study. PloS one, 11(9), e0159845. https://doi.org/10.1371/journal.pone.0159845 *Excluded due to limited relevant information on the DPICS*
12. Barnett, M. L., Niec, L. N., Peer, S. O., Jent, J. F., Weinstein, A., Gisbert, P., & Simpson, G. (2017). Successful Therapist-Parent Coaching: How In Vivo Feedback Relates to Parent Engagement in Parent-Child Interaction Therapy. Journal of clinical child and adolescent psychology : the official journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 46(6), 895–902. https://doi.org/10.1080/15374416.2015.1063428
13. Borden, L. A., Herman, K. C., Stormont, M., Goel, N., Darney, D., Reinke, W. M., & Webster-Stratton, C. (2014). Latent profile analysis of observed parenting behaviors in a clinic sample. Journal of abnormal child psychology, 42(5), 731–742. https://doi.org/10.1007/s10802-013-9815-z

14. Sheeber, L. B., Seeley, J. R., Feil, E. G., Davis, B., Sorensen, E., Kosty, D. B., & Lewinsohn, P. M. (2012). Development and pilot evaluation of an Internet-facilitated cognitive-behavioral intervention for maternal depression. Journal of consulting and clinical psychology, 80(5), 739–749. https://doi.org/10.1037/a0028820 *Excluded due to outcomes criteria.*
15. Hakman, M., Chaffin, M., Funderburk, B., & Silovsky, J. F. (2009). Change trajectories for parent-child interaction sequences during parent-child interaction therapy for child physical abuse. Child abuse & neglect, 33(7), 461–470. https://doi.org/10.1016/j.chiabu.2008.08.003
16. McCabe, K., Yeh, M., Lau, A., Argote, C. B., & Liang, J. (2010). Parent-child interactions among low-income Mexican American parents and preschoolers: do clinic-referred families differ from nonreferred families?. Behavior therapy, 41(1), 82–92. https://doi.org/10.1016/j.beth.2009.01.003
17. Hupp, S. D., Reitman, D., Forde, D. A., Shriver, M. D., & Kelley, M. L. (2008). Advancing the assessment of parent-child interactions: development of the Parent Instruction-Giving Game with Youngsters. Behavior therapy, 39(1), 91–106. https://doi.org/10.1016/j.beth.2007.05.004
18. Dretzke, J., Frew, E., Davenport, C., Barlow, J., Stewart-Brown, S., Sandercock, J., Bayliss, S., Raftery, J., Hyde, C., & Taylor, R. (2005). The effectiveness and cost-effectiveness of parent training/education programmes for the treatment of conduct disorder, including oppositional defiant disorder, in children. Health technology assessment (Winchester, England), 9(50), iii–233. https://doi.org/10.3310/hta9500

2 articles were added after searching the grey literature and reviewing the references of the 18 articles that met inclusion criteria.

1. Eyberg, S. M., Nelson, M. M., Ginn, N. C., Bhuivan, N., & Boggs, S. R. (2013). Dyadic parent-child interaction coding system: Comprehensive manual for research and training (4th ed.).
2. Robinson, E. A., & Eyberg, S. M. (1981). The dyadic parent-child interaction coding system: standardization and validation. Journal of consulting and clinical psychology, 49(2), 245–250. https://doi.org/10.1037//0022-006x.49.2.245

Supplemental Material: PCIT-T Literature Review

41 studies were eligible for inclusion after screening 243 abstracts.

1. Al Sehli, S. A., Helou, M., & Sultan, M. A. (2021). The Efficacy of Parent-Child Interaction Therapy (PCIT) in Children with Attention Problems, Hyperactivity, and Impulsivity in Dubai. Case reports in psychiatry, 2021, 5588612. https://doi.org/10.1155/2021/5588612
2. Skale, G., Perez, H., & Williams, M. E. (2020). Factors Influencing Implementation of Evidence-Based Mental Health Interventions for Infants and Young Children. The journal of behavioral health services & research, 47(4), 493–508. https://doi.org/10.1007/s11414-020-09694-5
3. Kohlhoff, J., Cibralic, S., Wallace, N., Morgan, S., McMahon, C., Hawkins, E., Eapen, V., Briggs, N., Huber, A., & McNeil, C. (2020). A randomized controlled trial comparing parent child interaction therapy - toddler, circle of security- parenting™ and waitlist controls in the treatment of disruptive behaviors for children aged 14-24 months: study protocol. BMC psychology, 8(1), 93. https://doi.org/10.1186/s40359-020-00457-7
4. Kohlhoff, J., Morgan, S., Briggs, N., Egan, R., & Niec, L. (2020). Parent-Child Interaction Therapy with Toddlers in a community-based setting: Improvements in parenting behavior, emotional availability, child behavior, and attachment. Infant mental health journal, 41(4), 543–562. https://doi.org/10.1002/imhj.21864
5. Gurwitch, R. H., Salem, H., Nelson, M. M., & Comer, J. S. (2020). Leveraging parent-child interaction therapy and telehealth capacities to address the unique needs of young children during the COVID-19 public health crisis. Psychological trauma : theory, research, practice and policy, 12(S1), S82–S84. https://doi.org/10.1037/tra0000863

6. Luby, J., Donohue, M. R., Gilbert, K., Tillman, R., & Barch, D. M. (2021). Sustained remission of child depression despite drift in parent emotion management skills 18 weeks following Parent Child Interaction Therapy: emotion development. European child & adolescent psychiatry, 30(3), 369–379. https://doi.org/10.1007/s00787-020-01522-7
7. Fleming, G. E., Kohlhoff, J., Morgan, S., Turnell, A., Maiuolo, M., & Kimonis, E. R. (2021). An Effectiveness Open Trial of Internet-Delivered Parent Training for Young Children With Conduct Problems Living in Regional and Rural Australia. Behavior therapy, 52(1), 110–123. https://doi.org/10.1016/j.beth.2020.03.001
8. Kohlhoff, J., Morgan, S., Briggs, N., Egan, R., & Niec, L. (2021). Parent-Child Interaction Therapy with Toddlers: A Community-based Randomized Controlled Trial with Children Aged 14-24 Months. Journal of clinical child and adolescent psychology : the official journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 50(3), 411–426. https://doi.org/10.1080/15374416.2020.1723599
9. England-Mason, G., & Gonzalez, A. (2020). Intervening to shape children's emotion regulation: A review of emotion socialization parenting programs for young children. Emotion (Washington, D.C.), 20(1), 98–104. https://doi.org/10.1037/emo0000638
10. Whalen, D. J., Gilbert, K. E., Kelly, D., Hajcak, G., Kappenman, E. S., Luby, J. L., & Barch, D. M. (2020). Preschool-Onset Major Depressive Disorder is Characterized by Electrocortical Deficits in Processing Pleasant Emotional Pictures. Journal of abnormal child psychology, 48(1), 91–108. https://doi.org/10.1007/s10802-019-00585-8
11. Parladé, M. V., Weinstein, A., Garcia, D., Rowley, A. M., Ginn, N. C., & Jent, J. F. (2020). Parent-Child Interaction Therapy for children with autism spectrum disorder and

a matched case-control sample. Autism : the international journal of research and practice, 24(1), 160–176. https://doi.org/10.1177/1362361319855851

12. Acosta, J., Garcia, D., & Bagner, D. M. (2019). Parent-Child Interaction Therapy for Children with Developmental Delay: The Role of Sleep Problems. Journal of developmental and behavioral pediatrics : JDBP, 40(3), 183–191. https://doi.org/10.1097/DBP.0000000000000647
13. Costa, E. A., Day, L., Caverly, C., Mellon, N., Ouellette, M., & Wilson Ottley, S. (2019). Parent-Child Interaction Therapy as a Behavior and Spoken Language Intervention for Young Children With Hearing Loss. Language, speech, and hearing services in schools, 50(1), 34–52. https://doi.org/10.1044/2018_LSHSS-18-0054
14. O'Toole, C., Lyons, R., Ó'Doibhlín, D., O'Farrell, F., & Houghton, C. (2020). Stage 1 Registered Report: The experiences and perceptions of parent-child interaction therapy for parents of young children with communication difficulties: A qualitative evidence synthesis protocol. HRB open research, 2, 36. https://doi.org/10.12688/hrbopenres.12974.2
15. Shafi, R., Bieber, E. D., Shekunov, J., Croarkin, P. E., & Romanowicz, M. (2019). Evidence Based Dyadic Therapies for 0- to 5-Year-Old Children With Emotional and Behavioral Difficulties. Frontiers in psychiatry, 10, 677. https://doi.org/10.3389/fpsyt.2019.00677
16. Morningstar, M., Garcia, D., Dirks, M. A., & Bagner, D. M. (2019). Changes in parental prosody mediate effect of parent-training intervention on infant language production. Journal of consulting and clinical psychology, 87(3), 313–318. https://doi.org/10.1037/ccp0000375

17. Vanderzee, K. L., Sigel, B. A., Pemberton, J. R., & John, S. G. (2018). Treatments for Early Childhood Trauma: Decision Considerations for Clinicians. Journal of child & adolescent trauma, 12(4), 515–528. https://doi.org/10.1007/s40653-018-0244-6
18. Gross, D., Belcher, H., Budhathoki, C., Ofonedu, M. E., Dutrow, D., Uveges, M. K., & Slade, E. (2019). Reducing Preschool Behavior Problems in an Urban Mental Health Clinic: A Pragmatic, Non-Inferiority Trial. Journal of the American Academy of Child and Adolescent Psychiatry, 58(6), 572–581.e1. https://doi.org/10.1016/j.jaac.2018.08.013
19. Wetherby, A. M., Woods, J., Guthrie, W., Delehanty, A., Brown, J. A., Morgan, L., Holland, R. D., Schatschneider, C., & Lord, C. (2018). Changing Developmental Trajectories of Toddlers With Autism Spectrum Disorder: Strategies for Bridging Research to Community Practice. Journal of speech, language, and hearing research : JSLHR, 61(11), 2615–2628. https://doi.org/10.1044/2018_JSLHR-L-RSAUT-18-0028
20. Shafi, R., Vande Voort, J. L., Croarkin, P. E., & Romanowicz, M. (2018). Parent-Child Interaction Therapy in a Case of Global Developmental Delay and Leukoencephalopathy. Frontiers in psychiatry, 9, 427. https://doi.org/10.3389/fpsyt.2018.00427
21. Blizzard, A. M., Barroso, N. E., Ramos, F. G., Graziano, P. A., & Bagner, D. M. (2018). Behavioral Parent Training in Infancy: What About the Parent-Infant Relationship?. Journal of clinical child and adolescent psychology : the official journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 47(sup1), S341–S353. https://doi.org/10.1080/15374416.2017.1310045
22. Herschell, A. D., Scudder, A. B., Schaffner, K. F., & Slagel, L. A. (2017). Feasibility and Effectiveness of Parent-Child Interaction Therapy with Victims of Domestic Violence: A

Pilot Study. Journal of child and family studies, 26(1), 271–283. https://doi.org/10.1007/s10826-016-0546-y

23. Barlow, J., Bergman, H., Kornør, H., Wei, Y., & Bennett, C. (2016). Group-based parent training programmes for improving emotional and behavioural adjustment in young children. The Cochrane database of systematic reviews, 2016(8), CD003680. https://doi.org/10.1002/14651858.CD003680.pub3
24. Carpenter, A. L., Puliafico, A. C., Kurtz, S. M., Pincus, D. B., & Comer, J. S. (2014). Extending parent-child interaction therapy for early childhood internalizing problems: new advances for an overlooked population. Clinical child and family psychology review, 17(4), 340–356. https://doi.org/10.1007/s10567-014-0172-4
25. Bagner, D. M., Frazier, S. L., & Berkovits, M. (2014). Getting ready for preschool: linking early intervention and family mental health for infants and toddlers with developmental delay. Administration and policy in mental health, 41(6), 707–711. https://doi.org/10.1007/s10488-013-0513-5
26. Kimonis, E. R., Bagner, D. M., Linares, D., Blake, C. A., & Rodriguez, G. (2014). Parent Training Outcomes among Young Children with Callous-Unemotional Conduct Problems with or At-Risk for Developmental Delay. Journal of child and family studies, 23(2), 437–448. https://doi.org/10.1007/s10826-013-9756-8
27. Bagner D. M. (2013). Father's role in parent training for children with developmental delay. Journal of family psychology : JFP : journal of the Division of Family Psychology of the American Psychological Association (Division 43), 27(4), 650–657. https://doi.org/10.1037/a0033465

28. Bagner, D. M., & Graziano, P. A. (2013). Barriers to success in parent training for young children with developmental delay: the role of cumulative risk. Behavior modification, 37(3), 356–377. https://doi.org/10.1177/0145445512465307

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30. Puliafico, A. C., Comer, J. S., & Pincus, D. B. (2012). Adapting parent-child interaction therapy to treat anxiety disorders in young children. Child and adolescent psychiatric clinics of North America, 21(3), 607–619. https://doi.org/10.1016/j.chc.2012.05.005

31. Graziano, P. A., Bagner, D. M., Sheinkopf, S. J., Vohr, B. R., & Lester, B. M. (2012). Evidence-based intervention for young children born premature: preliminary evidence for associated changes in physiological regulation. Infant behavior & development, 35(3), 417–428. https://doi.org/10.1016/j.infbeh.2012.04.001

32. Bagner, D. M., Graziano, P. A., Jaccard, J., Sheinkopf, S. J., Vohr, B. R., & Lester, B. M. (2012). An initial investigation of baseline respiratory sinus arrhythmia as a moderator of treatment outcome for young children born premature with externalizing behavior problems. Behavior therapy, 43(3), 652–665. https://doi.org/10.1016/j.beth.2011.12.002

33. Lenze, S. N., Pautsch, J., & Luby, J. (2011). Parent-child interaction therapy emotion development: a novel treatment for depression in preschool children. Depression and anxiety, 28(2), 153–159. https://doi.org/10.1002/da.20770

34. Bagner, D. M., Sheinkopf, S. J., Vohr, B. R., & Lester, B. M. (2010). Parenting intervention for externalizing behavior problems in children born premature: an initial

examination. Journal of developmental and behavioral pediatrics : JDBP, 31(3), 209–216. https://doi.org/10.1097/DBP.0b013e3181d5a294

35. Funderburk, B. W., Ware, L. M., Altshuler, E., & Chaffin, M. (2008). Use and feasibility of telemedicine technology in the dissemination of Parent-Child Interaction Therapy. Child maltreatment, 13(4), 377–382. https://doi.org/10.1177/1077559508321483
36. Olds, D. L., Sadler, L., & Kitzman, H. (2007). Programs for parents of infants and toddlers: recent evidence from randomized trials. Journal of child psychology and psychiatry, and allied disciplines, 48(3-4), 355–391. https://doi.org/10.1111/j.1469-7610.2006.01702.x
37. Magill-Evans, J., Harrison, M. J., Rempel, G., & Slater, L. (2006). Interventions with fathers of young children: systematic literature review. Journal of advanced nursing, 55(2), 248–264. https://doi.org/10.1111/j.1365-2648.2006.03896.x
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40. Nixon, R. D., Sweeney, L., Erickson, D. B., & Touyz, S. W. (2004). Parent-child interaction therapy: one- and two-year follow-up of standard and abbreviated treatments for oppositional preschoolers. Journal of abnormal child psychology, 32(3), 263–271. https://doi.org/10.1023/b:jacp.0000026140.60558.05

41. Eyberg, S. M., Boggs, S. R., & Algina, J. (1995). Parent-child interaction therapy: a psychosocial model for the treatment of young children with conduct problem behavior and their families. Psychopharmacology bulletin, 31(1), 83–91.

19 articles were eligible for inclusion after reviewing the screened 41 articles.

1. Al Sehli, S. A., Helou, M., & Sultan, M. A. (2021). The Efficacy of Parent-Child Interaction Therapy (PCIT) in Children with Attention Problems, Hyperactivity, and Impulsivity in Dubai. Case reports in psychiatry, 2021, 5588612. https://doi.org/10.1155/2021/5588612 *Excluded due to population criteria.*
2. Skale, G., Perez, H., & Williams, M. E. (2020). Factors Influencing Implementation of Evidence-Based Mental Health Interventions for Infants and Young Children. The journal of behavioral health services & research, 47(4), 493–508. https://doi.org/10.1007/s11414-020-09694-5
3. Kohlhoff, J., Morgan, S., Briggs, N., Egan, R., & Niec, L. (2020). Parent-Child Interaction Therapy with Toddlers in a community-based setting: Improvements in parenting behavior, emotional availability, child behavior, and attachment. Infant mental health journal, 41(4), 543–562. https://doi.org/10.1002/imhj.21864
4. Gurwitch, R. H., Salem, H., Nelson, M. M., & Comer, J. S. (2020). Leveraging parent-child interaction therapy and telehealth capacities to address the unique needs of young children during the COVID-19 public health crisis. Psychological trauma : theory, research, practice and policy, 12(S1), S82–S84. https://doi.org/10.1037/tra0000863 *Excluded due to population criteria.*
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following Parent Child Interaction Therapy: emotion development. European child & adolescent psychiatry, 30(3), 369–379. https://doi.org/10.1007/s00787-020-01522-7 *Excluded due to population criteria.*

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a matched case-control sample. Autism : the international journal of research and practice, 24(1), 160–176. https://doi.org/10.1177/1362361319855851 *Excluded due to population criteria.*

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Journal of consulting and clinical psychology, 87(3), 313–318. https://doi.org/10.1037/ccp0000375

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26. Bagner D. M. (2013). Father's role in parent training for children with developmental delay. Journal of family psychology : JFP : journal of the Division of Family Psychology of the American Psychological Association (Division 43), 27(4), 650–657. https://doi.org/10.1037/a0033465 *Excluded due to population criteria.*
27. Bagner, D. M., & Graziano, P. A. (2013). Barriers to success in parent training for young children with developmental delay: the role of cumulative risk. Behavior modification, 37(3), 356–377. https://doi.org/10.1177/0145445512465307 *Excluded due to population criteria.*
28. Abrahamse, M. E., Junger, M., Chavannes, E. L., Coelman, F. J., Boer, F., & Lindauer, R. J. (2012). Parent-child interaction therapy for preschool children with disruptive behaviour problems in the Netherlands. Child and adolescent psychiatry and mental health, 6(1), 24. https://doi.org/10.1186/1753-2000-6-24 *Excluded due to population criteria.*
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treatment outcome for young children born premature with externalizing behavior problems. Behavior therapy, 43(3), 652–665. https://doi.org/10.1016/j.beth.2011.12.002

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35. Olds, D. L., Sadler, L., & Kitzman, H. (2007). Programs for parents of infants and toddlers: recent evidence from randomized trials. Journal of child psychology and psychiatry, and allied disciplines, 48(3-4), 355–391. https://doi.org/10.1111/j.1469-7610.2006.01702.x *Excluded due to intervention criteria.*
36. Magill-Evans, J., Harrison, M. J., Rempel, G., & Slater, L. (2006). Interventions with fathers of young children: systematic literature review. Journal of advanced nursing, 55(2), 248–264. https://doi.org/10.1111/j.1365-2648.2006.03896.x *Excluded due to intervention criteria.*
37. Fox, R. A., Keller, K. M., Grede, P. L., & Bartosz, A. M. (2007). A mental health clinic for toddlers with developmental delays and behavior problems. Research in

developmental disabilities, 28(2), 119–129. https://doi.org/10.1016/j.ridd.2006.02.001 *Excluded due to intervention criteria.*

38. Mahoney, G., & Perales, F. (2005). Relationship-focused early intervention with children with pervasive developmental disorders and other disabilities: a comparative study. Journal of developmental and behavioral pediatrics : JDBP, 26(2), 77–85. https://doi.org/10.1097/00004703-200504000-00002 *Excluded due to intervention criteria.*
39. Nixon, R. D., Sweeney, L., Erickson, D. B., & Touyz, S. W. (2004). Parent-child interaction therapy: one- and two-year follow-up of standard and abbreviated treatments for oppositional preschoolers. Journal of abnormal child psychology, 32(3), 263–271. https://doi.org/10.1023/b:jacp.0000026140.60558.05 *Excluded due to population criteria.*
40. Eyberg, S. M., Boggs, S. R., & Algina, J. (1995). Parent-child interaction therapy: a psychosocial model for the treatment of young children with conduct problem behavior and their families. Psychopharmacology bulletin, 31(1), 83–91. *Excluded due to population criteria.*

6 articles were added after reviewing the references of the 19 articles that met inclusion criteria.

1. Bagner, D. M., Coxe, S., Hungerford, G. M., Garcia, D., Barroso, N. E., Hernandez, J., & Rosa-Olivares, J. (2016). Behavioral Parent Training in Infancy: A Window of Opportunity for High-Risk Families. Journal of abnormal child psychology, 44(5), 901–912. https://doi.org/10.1007/s10802-015-0089-5
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Children With Communication Difficulties. *Journal of speech, language, and hearing research : JSLHR*, *64*(8), 3159–3185. https://doi.org/10.1044/2021_JSLHR-20-00732

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4. Chronis-Tuscano, A., Novick, D. R., Danko, C. M., Smith, K. A., Wagner, N. J., Wang, C. H., Druskin, L., Dougherty, L. R., & Rubin, K. H. (2021). Early intervention for inhibited young children: a randomized controlled trial comparing the Turtle Program and Cool Little Kids. *Journal of child psychology and psychiatry, and allied disciplines*, 10.1111/jcpp.13475. Advance online publication. https://doi.org/10.1111/jcpp.13475
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6. Kohlhoff, J., Cibralic, S., & Morgan, S. (2020). A qualitative investigation of consumer experiences of the child directed interaction phase of parent–child interaction therapy with toddlers. *Clinical Psychologist*, *24*(3), 306-314. https://doi.org/10.1111/cp.12216