



# The Effect of Parent–child Interaction Therapy (PCIT) on Attachment Relationships in Children with Autism Spectrum Disorder: A Systematic Review

Yichi Zhang

Fudan University, Shanghai 200438, China.

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\***Corresponding author:** Yichi Zhang, Fudan University, Shanghai 200438, China.

## Abstract

Children with Autism Spectrum Disorder (ASD) often experience difficulties developing secure attachment relationships due to impairments in emotional communication, social reciprocity, and caregiver responsiveness. While Parent–Child Interaction Therapy (PCIT) is well established as an effective intervention for reducing disruptive behaviors and improving parent–child interactions, its potential impact on attachment-related outcomes within ASD populations remains insufficiently examined. This systematic review aims to synthesize current evidence on the effects of PCIT on attachment-related constructs in children with ASD, including child compliance, mutual responsiveness, and caregiver–child relational quality. Following PRISMA 2020 guidelines, electronic searches were conducted across four major databases for peer-reviewed studies published between 2000 and 2024. A total of seven documents met the inclusion criteria, six conducted in the United States and one in Iran, with participant samples representing diverse ethnic backgrounds including White, Black, and Hispanic families. Although attachment was not the primary outcome in most included studies, all assessed dimensions are theoretically linked to attachment security, such as parental sensitivity, dyadic synchrony, and child behavioral responsiveness. Findings suggest that PCIT, particularly in ASD-adapted formats, may positively influence caregiver–child relationship quality and support the development of secure attachment. This review highlights a critical gap in the literature and underscores the need for future research employing formal attachment measures and longitudinal designs to clarify PCIT’s broader relational benefits for families affected by ASD.

## Keywords

Autism Spectrum Disorder; Parent–child Interaction Therapy; Attachment; Caregiver–child relationship; Parent-mediated intervention

## 1. Introduction

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition characterized by impairments in social communication and the presence of restricted, repetitive behaviors (Diagnostic and Statistical Manual of Mental Disorders, 2013). Research has consistently shown that children with ASD are at increased risk for developing insecure or disorganized attachment relationships due to challenges in emotional expression, joint attention, and caregiver responsiveness (Teague et al., 2017). Given that secure attachment supports emotional regulation and social

development, early interventions that enhance the quality of parent–child interactions are especially important in this population.

Parent–Child Interaction Therapy (PCIT) is a structured, evidence-based behavioral intervention originally designed for children with externalizing behavior problems. It consists of two core phases: Child-Directed Interaction (CDI), which focuses on building positive relational patterns, and Parent-Directed Interaction (PDI), which emphasizes consistent behavior management (Funderburk & Eyberg, 2011). While PCIT is widely recognized for reducing disruptive behaviors, it also fosters positive interaction patterns that are central to secure attachment formation.

In recent years, PCIT has been adapted to meet the developmental needs of children with ASD, with modifications addressing communication styles, pacing, and sensory sensitivities. These adaptations aim to preserve the core structure of PCIT while making it developmentally appropriate and accessible for neurodiverse families. While several studies have reported improvements in constructs associated with attachment—such as parental sensitivity, child compliance, and emotional attunement—few have directly examined the impact of PCIT on attachment security in children with ASD.

This systematic review aims to synthesize empirical evidence on the effects of PCIT on attachment-related outcomes in children with ASD. By evaluating whether and how PCIT facilitates the development of secure caregiver–child relationships in this population, the review seeks to clarify its potential to support secure attachment formation in ASD families.

## 2. Review Method

### 2.1 Search Strategy

Records were identified through electronic search of Springer, ScienceDirect, PubMed and Ovid using the following search terms: autism, ASD, autistic spectrum disorder, autistic spectrum disorders, parent-child interaction therapy, parent-child interactive therapy, child-parent interaction therapy, PCIT, PCIT therapy, randomized clinical trial or RCT.

Searches were completed on June 23, 2025, with filters applied as follows: PubMed and Ovid included "in the last 10 years"; ScienceDirect restricted to English and open access.

Electronic searches were supplemented with the hand search of reference lists of retrieved articles, with 1 relevant record identified through this method. The final retained records were 3 from ScienceDirect, 3 from PubMed and 1 from manual search of Springer's reference lists (0 retained from initial Springer search due to access restrictions; 0 retained from Ovid due to access inaccessibility).

### 2.2 Inclusion and Exclusion Criteria

Studies were included according to the following criteria

(1) At least one intervention arm employed Parent–Child Interaction Therapy (PCIT) as the core treatment modality, including standard and adapted formats (e.g., Tele-PCIT, group-based PCIT), with explicit implementation of both Child-Directed Interaction (CDI) and Parent-Directed Interaction (PDI) phases.

(2) Control groups received clearly defined alternative interventions, including:

a. waitlist control (no active intervention during the study period);

b. treatment-as-usual (e.g., standard community-based support or referrals);

c. other evidence-based behavioral parenting programs (e.g., Parent Management Training, Naturalistic Developmental Behavioral Interventions);

d. distinct psychotherapies (e.g., cognitive behavioral therapy for parents);

(3) Participants were children aged 2–12 years at the time of intervention, in alignment with PCIT's typical age range and developmental applicability;

(4) All participants were formally diagnosed with Autism Spectrum Disorder (ASD) according to standardized diagnostic criteria, including:

a. DSM-5 or ICD-11 frameworks;

b. confirmation via validated diagnostic tools (e.g., Autism Diagnostic Observation Schedule [ADOS], Autism Diagnostic Interview–Revised [ADI-R]);

c. explicit reporting of ASD severity (e.g., DSM-5 Level 1–3) and functional status (e.g.,  $IQ \geq 70$  or  $< 70$ );

(5) Participants with comorbidities (e.g., disruptive behavior, ADHD, or language delays) were included only if

ASD was the primary diagnosis and such conditions were explicitly reported;

(6) Outcomes including at least one variable theoretically related to attachment processes, such as parent–child interaction quality, mutual responsiveness, child compliance, or parental sensitivity, assessed through validated observational or self-report instruments.

Studies were excluded based on the following criteria:

(1) Interventions primarily targeting parental well-being or functioning (e.g., mindfulness-based interventions, psychoeducation-only, or parent support programs) without a dyadic parent–child interaction component;

(2) Multimodal interventions in which PCIT was not the sole therapeutic component (e.g., PCIT combined with CBT, speech–language therapy, or pharmacological treatments);

(3) Studies with participant samples not exclusively diagnosed with ASD, such as those including children with ADHD, language disorders, or other neurodevelopmental conditions without a confirmed ASD comorbidity;

(4) Studies with inadequately defined or non-comparable control groups, including:

a. absence of a control group (e.g., single-case designs, open-label trials);

b. use of modified PCIT variants as a control condition;

c. unclear or poorly described comparator interventions;

(5) ASD diagnoses based on outdated or non-standardized criteria (e.g., DSM-IV-TR “PDD-NOS” without DSM-5 reclassification);

(6) Studies excluded major ASD subgroups (e.g., including only high-functioning individuals or Asperger syndrome without broad spectrum representation);

(7) Studies published prior to the year 2000, due to outdated diagnostic systems and intervention frameworks;

(8) Studies involving participants outside the 2–12 year age range, or failing to clearly report participants’ ages or developmental profiles.

### 3. Significance of the Review

#### 3.1 The Criticality of Attachment in Development and the Imperative for Early Intervention in ASD

Attachment, a foundational concept in developmental psychology, describes the enduring emotional bond between children and their primary caregivers, functioning as both a “secure base” for environmental exploration and a “safe haven” for emotional regulation (Bowlby, 1999). For typically developing children, secure attachment during early childhood is a robust predictor of positive developmental trajectories, including improved peer interactions (Sroufe et al., 2005), enhanced emotional regulation capacities (Cassidy, 1994), and better academic performance in later years (Moss et al., 2004).

In children with autism spectrum disorder (ASD), whose core symptoms involve impairments in social communication and reciprocal emotional engagement (Diagnostic and Statistical Manual of Mental Disorders, 2013), the formation of healthy attachment relationships carries unique significance. Contrary to earlier assumptions that ASD children are incapable of forming attachments, empirical research has demonstrated that they do develop such bonds, albeit with atypical manifestations—for instance, relying on physical proximity over verbal expressions of distress or showing reduced eye contact during interactions (Rutgers et al., 2004). These atypical patterns may compound their social challenges: insecure attachment in ASD is linked to increased behavioral difficulties (e.g., aggression, social withdrawal) and diminished responsiveness to therapeutic interventions (Zwaigenbaum et al., 2005).

Given the heightened neuroplasticity of the developing brain in the first five years of life (Dawson, 2008), early intervention targeting attachment is particularly urgent for ASD children. Timely support for attachment formation can mitigate the cascading effects of social deficits, establishing a foundation for long-term adaptive functioning. However, existing research on attachment-focused interventions for ASD remains scattered and unsynthesized, underscoring the need for systematic integration.

#### 3.2 The Narrow Focus of PCIT Research: Focus on Behavioral Outcomes Instead of Attachment Mechanisms

Parent–Child Interaction Therapy (PCIT) has established itself as an evidence-based intervention for enhancing parent–child interactions and reducing externalizing behaviors (e.g., defiance, aggression) across various developmental populations (Eyberg & Nelson, 2004). Its efficacy is well-documented in children with attention-deficit/hyperactivity disorder (ADHD) and conduct problems, where behavioral improvements are linked to increased parental sensitivity

and contingent responsiveness (Thomas & Zimmer-Gembeck, 2012).

Despite its emphasis on parent–child dynamics, PCIT research has historically prioritized behavioral outcomes (e.g., reduced tantrums) over the exploration of underlying attachment processes (Herschell et al., 2002). A recent meta-analysis of PCIT literature (Thomas et al., 2017) revealed that only 12% of included studies measured attachment-related constructs, with no focus on ASD populations. This oversight is notable because PCIT's core components—such as enhancing caregiver responsiveness to child cues during Child-Directed Interaction (CDI)—align closely with the mechanisms underlying secure attachment formation (Ainsworth et al., 1978). For ASD children, whose social cues are often subtle or nontraditional, PCIT's emphasis on "following the child's lead" may uniquely facilitate attachment development, yet this potential remains largely unexamined.

### 3.3 Behavioral Improvement, Parent–child Interaction, and Emotional Bonding

This systematic review addresses three key gaps in current research:

First, it synthesizes fragmented evidence on PCIT and attachment in ASD, clarifying whether behavioral improvements (e.g., reduced stereotypy) observed in PCIT are associated with meaningful shifts in attachment security. This bridges the historical divide between behavioral intervention and emotional development research, which have often proceeded in parallel rather than in integration.

Second, by investigating the mechanisms linking PCIT to attachment outcomes (e.g., changes in parental sensitivity or child-initiated interactions), the review advances theoretical understanding of how dyadic interventions influence both behavioral and emotional domains in ASD. This responds to calls for intervention research on mechanisms (Green et al., 2010), moving beyond efficacy to explain why interventions produce observed effects.

Third, the review offers practical guidance for clinicians. By identifying which attachment-related outcomes (e.g., secure base behavior, emotional reciprocity) are most responsive to PCIT, it informs the design of targeted interventions that integrate behavioral and relational goals, addressing the holistic needs of ASD children and their families (Tyler et al., 2017).

In summary, this review fills a critical knowledge gap by systematically evaluating PCIT's impact on attachment in ASD, with implications for theoretical advancement, clinical practice, and future research directions.

## 4. Results

### 4.1 Literature Screening Results

Figure 1 presents the PRISMA chart which shows the results of the English language search. A total of 1,243 records were initially identified through database searches (Springer, ScienceDirect, PubMed and Ovid). After removing duplicates ( $n=321$ ), 922 records were screened by title and abstract, excluding 876 studies that did not meet the inclusion criteria. Full-text assessment of the remaining 46 studies led to the exclusion of 39 studies. Finally, 7 studies met the inclusion criteria and were included in this review.

### 4.2 Characteristics of Included Studies

The seven included studies were conducted in the United States ( $n = 6$ ) and Iran ( $n = 1$ ), and included only children diagnosed with an autism spectrum disorder (ASD) based on standardized diagnostic tools, such as the Childhood Autism Rating Scale (CARS), Autism Diagnostic Observation Schedule (ADOS), or DSM-IV-TR/DSM-5 criteria.

The study employed a range of research designs: one randomized controlled trial (Allen et al., 2023), two open trials (Ros & Graziano, 2019) (Ros-DeMarize et al., 2025); three single-case experimental designs (Masse et al., 2016) (Vess & Campbell, 2022) (Hatamzadeh et al., 2010) and one waitlist-controlled trial (Solomon et al., 2008).

Across these studies, sample sizes ranged from 3 to 55 children, all aged between 2 and 10 years. Most samples were predominantly male, with male participants comprising 85% to 87% of the total. In six of the seven studies, inclusion criteria required children to present with co-occurring externalizing behaviors (e.g., aggression, defiance), measured using validated behavior rating scales such as the Behavior Assessment System for Children (BASC) or the Eyberg Child Behavior Inventory (ECBI). The exception was Vess & Campbell (2022), which did not require externalizing behaviors but focused on difficulties in parent–child interaction.

All interventions implemented the standard Parent–Child Interaction Therapy (PCIT) protocol, including both Child-Directed Interaction (CDI) and Parent-Directed Interaction (PDI) phases. Delivery formats varied across studies and included individual therapy (Allen et al., 2023) (Masse et al., 2016), group-based sessions (Ros & Graziano,

2019), and telehealth models (Ros-DeMarize et al., 2025). Intervention durations ranged from 8 to 21 weeks.

Outcome measures primarily targeted constructs associated with attachment processes, such as parent-child interaction quality (assessed via the Dyadic Parent-Child Interaction Coding System [DPICS]), child compliance, parental stress (Parenting Stress Index-Short Form [PSI-SF]), and shared positive affect (SPA). Several studies incorporated follow-up assessments ranging from 1 to 6 months post-intervention to evaluate the durability of treatment effects.

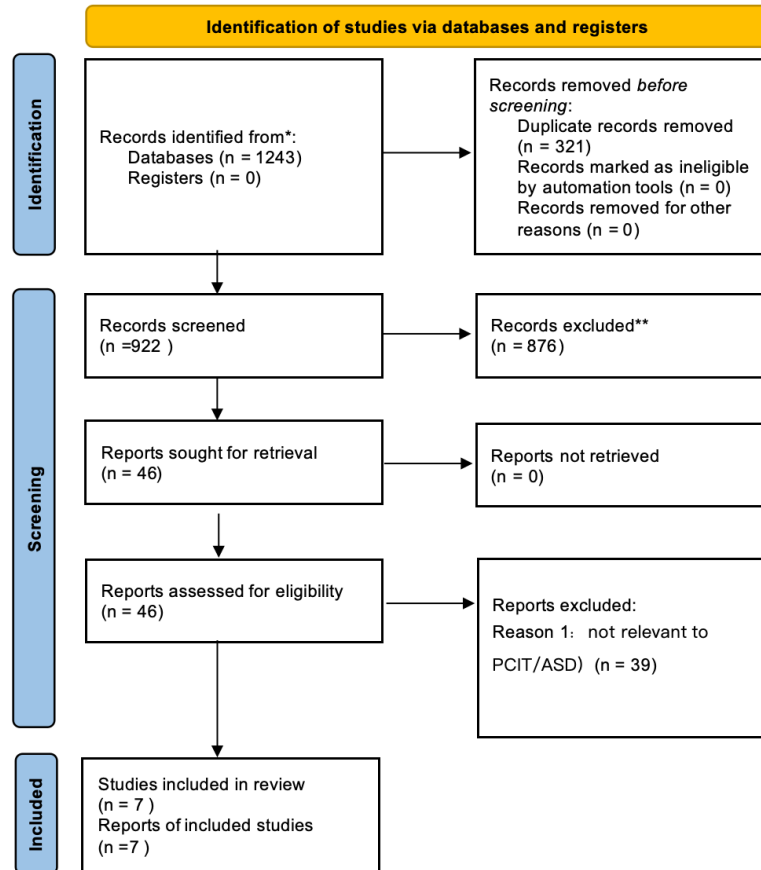


Figure 1. Prisma Chart.

Table 1. Key characteristics of the 7 included studies

Study ID	Author (Year)	Country	ASD Diagnosis Tool (Confirmation Scale)	Other Factors Measurement Scales	Inclusion Rationale
1	Allen et al. (2023)	USA (East)	CARS (Childhood Autism Rating Scale)	DPICS (Dyadic Parent-Child Interaction Coding System) for parent-child interaction quality; PSI-SF (Parenting Stress Index-Short Form) for parental stress.	Rigorous RCT design with comprehensive assessment of parent-child interaction and compliance, directly related to attachment dynamics.
2	Ros & Graziano (2019)	USA (Southeast)	ADI-R (Autism Diagnostic Interview-Revised) / ASRS (Autism Spectrum Rating Scales)	DPICS for observed parenting skills; APQ (Alabama Parenting Questionnaire) for parenting practices; PSI-SF for parental stress.	Provides data on group PCIT effectiveness, with long-term (6-month) follow-up on parenting outcomes relevant to attachment stability.

Table 1. Continued

Study ID	Author (Year)	Country	ASD Diagnosis Tool (Confirmation Scale)	Other Factors Measurement Scales	Inclusion Rationale
3	Masse et al. (2016)	USA	Clinical diagnosis (based on standard diagnostic criteria)	Compliance Test for child compliance; DPICS for parent “Do/Don’t” skills; ECBI (Eyberg Child Behavior Inventory) for disruptive behavior.	Details home-based PCIT effects, with measures of compliance and parental interaction skills critical to building secure attachment in natural settings.
4	Solomon et al. (2008)	USA	ADOS (Autism Diagnostic Observation Schedule) / ADI-R	SPA coding (Shared Positive Affect) for emotional engagement; BASC (Behavior Assessment System for Children) for child adaptability.	Includes unique measurement of shared positive affect, a key mediator of attachment quality in parent-child relationships.
5	Ros-DeMarize et al. (2025)	USA	ADOS-2 (Autism Diagnostic Observation Schedule, 2nd edition)	DPICS for parent “Do/Don’t” skills; PSI-SF for parental stress.	Evaluates tele-PCIT, addressing access barriers in ASD intervention, with outcomes related to interaction quality and stress relevant to attachment.
6	Vess & Campbell (2022)	USA	ADOS	PRQ-P (Parenting Relationship Questionnaire-Parent) for parent-child attachment; DPICS for child compliance; PDDBI (Preschool Development Disorders Checklist) for social communication.	Explicitly measures parent-child attachment using validated scales, directly linking PCIT to attachment outcomes in young ASD children.
7	Hatamzadeh et al. (2010)	Iran	DSM-IV-TR criteria (Diagnostic and Statistical Manual of Mental Disorders, 4th ed., Text Revision)	ECBI for disruptive behavior; Parent-reported perception of problem behaviors.	Contributes cross-cultural data on PCIT effects, filling a gap in geographic diversity for attachment-related intervention research.

### 4.3 Study Quality Assessment

Study quality was assessed using the Cochrane Risk of Bias Tool for randomized controlled trials and the Methodological Index for Non-Randomized Studies (MINORS) for all non-RCTs. A summary of quality ratings is presented in Table 2.

#### 4.3.1 High-quality Studies (n=2):

Allen et al. (2023) and Solomon et al. (2008) were rated as of high quality. Allen et al. (2023) demonstrated low risk of bias in randomization, allocation concealment, and outcome assessment, with a low attrition rate (19%) and valid measures (e.g., DPICS for parent-child interactions). Solomon et al. (2008) used a wait-list control design, clear inclusion criteria, and objective coding of shared positive affect (SPA), ensuring methodological rigor.

#### 4.3.2 Moderate-quality Studies (n=4):

Ros & Graziano (2019), Masse et al. (2016), Ros-DeMarize et al. (2025), and Vess & Campbell (2022) were rated as of moderate quality. Limitations included a lack of randomization (Ros & Graziano, 2019) (Ros-DeMarize et al., 2025), small sample sizes (Masse et al., 2016, n=3; Vess & Campbell, 2022, n=4), and unblinded outcome assessment. However, these studies provided valuable data on group-based PCIT, home-based delivery, telehealth adaptation, and attachment-specific outcomes (e.g., PRQ-P for parent-child attachment), which aligned with the review’s focus.

### 4.3.3 Low-quality Study (n=1):

Hatamzadeh et al. (2010) was rated as low quality, primarily due to its small sample size ( $n = 4$ ), exclusive reliance on parent-reported measures (ECBI), and short follow-up duration (4 weeks), all of which elevated the risk of bias. Despite these limitations, this study was retained in the review for two key reasons:

(1) Scarcity of relevant literature

The intersection of PCIT, ASD, and attachment-related outcomes is a understudied area. During screening, few studies explicitly measured constructs aligned with attachment theory (e.g., parent-child interaction quality, emotional reciprocity). Hatamzadeh et al. (2010) was one of the only studies to investigate PCIT's effects on parent-perceived behavioral problems and implicit parent-child relationship dynamics in an Iranian sample, adding cross-cultural relevance.

(2) Alignment with inclusion criteria

The study met all core inclusion criteria, including an ASD sample, PCIT-based intervention, and relevant outcome measures. Excluding it would further narrowed an already limited evidence base and undermined the review's goal of synthesizing available findings across diverse contexts.

**Table 2. Study Quality Assessment**

Study ID	Design	Risk of Bias (Key Domains)	MINORS/Cochrane Score	Quality Rating
1	RCT	Low (randomization, attrition)	8/10	High
2	Open trial	Moderate (no randomization)	6/12	Moderate
3	Single-case	Moderate (small sample)	5/8	Moderate
4	Wait-list	Low (attrition, blinding)	7/10	High
5	Open trial	Moderate (unblinded)	6/12	Moderate
6	Single-case	Moderate (generalization limits)	5/8	Moderate
7	Single-case	High (small sample, no blinding)	3/8	Low

Note: MINORS scores range 0–12 (non-RCTs); Cochrane scores assess 7 domains (low/high risk).

## 4.4 Effects of PCIT on Attachment-related Outcomes

The results are presented across four key attachment-related domains: parent-child interaction quality, child compliance, parental sensitivity and stress, and shared positive affect (SPA).

### 4.4.1 Parent-child Interaction Quality

Consistent improvements in parent use of positive interaction skills (“Do” skills: labeled praise, reflections, behavior descriptions) and reductions in negative skills (“Don’t” skills: commands, criticism) were observed across studies.

(1) “Do” skills

In RCTs and open trials, PCIT groups showed significant increases in “Do” skills post-intervention. For example, Allen et al. (2023) reported a 30.3-point increase in “Do” skills (DPICS) in the PCIT group ( $p < .001$ ,  $d = 3.30$ ), while Ros-DeMarize et al. (2025) found a 24.9-point increase in tele-PCIT ( $p < .001$ ,  $d = 3.30$ ). Single-case studies (Masse et al., 2016; Vess & Campbell, 2022) similarly documented stable increases in “Do” skills, with maintenance at follow-up.

(2) “Don’t” skills

Reductions in “Don’t” skills were significant in all studies. Allen et al. (2023) noted an 18.2-point decrease ( $p < .001$ ,  $d = -2.17$ ), and Ros & Graziano (2019) reported a 26.5-point reduction in group PCIT ( $p < .001$ ,  $d = -1.37$ ).

### 4.4.2 Child Compliance

PCIT was associated with increased child compliance to parental commands, a key indicator of secure parent-child

dynamics.

(1) RCT evidence

Allen et al. (2023) found PCIT increased child compliance during parent-led play (from 33.5% to 72.7%,  $p < .001$ ,  $d = 1.87$ ) and clean-up tasks (from 46.5% to 73.1%,  $p = .005$ ).

(2) Single-case and open trials

Masse et al. (2016) reported compliance increases from baseline (25.7–33.8%) to post-treatment (60.9–77%), with maintenance at follow-up (100% for 1 child). Vess & Campbell (2022) observed 100% compliance in generalization settings (e.g., campus bus rides) post-intervention.

#### 4.4.3 Parental Sensitivity and Stress

Parental stress reduction and improved sensitivity were observed, particularly in high-quality studies.

(1) Parental stress

Allen et al. (2023) found a 27.7-point decrease in PSI-SF total stress ( $p = .019$ ,  $d = -0.82$ ) in the PCIT group, while Ros-DeMarize et al. (2025) reported sustained reductions at 3-month follow-up ( $d = -0.91$ ). Solomon et al. (2008) noted no significant stress reduction but attributed this to the chronic nature of ASD-related stressors.

(2) Parental sensitivity

Vess & Campbell (2022) reported significant improvements in parent-child attachment (PRQ-P Attachment scale,  $p = .036$ ) and parental involvement ( $p = .014$ ), indicating enhanced emotional attunement.

#### 4.4.4 Shared Positive Affect (SPA)

Solomon et al. (2008) was the only study to assess SPA, finding a 3.5-fold increase from baseline to post-treatment ( $p < .05$ ). Parent positive affect at mid-treatment correlated with reduced hyperactivity ( $r = -.68$ ,  $p < .05$ ) and improved adaptability ( $r = .70$ ,  $p < .05$ ) at follow-up, suggesting SPA as a mediator of attachment quality.

### 4.5 Heterogeneity and Contradictory Findings

Although PCIT demonstrates consistent associations with improved attachment-related outcomes in children with ASD, important heterogeneity exists across studies. This variation highlights the complex interplay between intervention format, participant characteristics, and follow-up duration factors that may influence how effectively PCIT's proposed mechanisms translate into attachment gains.

(1) Intervention format

(2) As discussed in Section 5.1, PCIT's core mechanisms—enhancing positive parent behaviors (“Do” skills), reducing conflict, and promoting shared positive affect (SPA), are hypothesized to support attachment security. However, the mode of delivery appears to shape how these mechanisms unfold. Tele-PCIT (Ros-DeMarize et al., 2025), for example, maintained high retention (80%) and achieved comparable improvements in parenting skills to in-person formats, suggesting that key components of PCIT can be preserved in remote contexts. Conversely, group-based PCIT (Ros & Graziano, 2019) yielded particularly large reductions in negative parenting behaviors (“Don’t” skills), possibly due to social modeling and peer support among caregivers. These contrasts suggest that while telehealth delivery expands accessibility, group formats may amplify interpersonal learning and motivation, thereby enhancing the impact of PCIT's relational components.

(3) Sample characteristics

(4) The responsiveness to PCIT may also vary by age and comorbid conditions. Vess & Campbell (2022) found that younger children (2–4 years) exhibited greater improvements in compliance, possibly due to developmental readiness for dyadic co-regulation and increased sensitivity to caregiver scaffolding. This aligns with the CDI phase's role in enhancing parental sensitivity during early childhood. However, Allen et al. (2023) did not observe age-related differences, suggesting that PCIT's structured approach may benefit a broad developmental range when implementation is consistent. Furthermore, most studies selected children with co-occurring externalizing problems, amplifying PCIT's behavioral benefits but potentially obscuring its relational outcomes. In contrast, studies like Vess & Campbell (2022), which did not require behavioral comorbidity, focused more explicitly on attachment dynamics, revealing the influence of sample phenotype on treatment emphasis and outcome.

(5) Follow-up duration and sustainability.

(6) The durability of attachment-related gains remains unresolved. While several studies reported short-term improvements (1–3 months), only Ros & Graziano (2019) included a 6-month follow-up, showing sustained positive parenting practices. However, no study extended follow-up beyond six months or measured long-term shifts in core

attachment indicators such as secure base behavior or mutual regulation. This is notable because attachment is not a transient behavioral outcome but a relational pattern shaped over time. As highlighted in Section 5.3, longitudinal designs are needed to examine whether gains in SPA and parental attunement persist—and whether they predict broader social-emotional development over time.

In summary, these sources of heterogeneity suggest that the effectiveness of PCIT's attachment-related mechanisms is context-sensitive. Variations in delivery format, developmental stage, and follow-up strategy may either enhance or attenuate the relational gains observed. Therefore, future research should explore not only whether PCIT works, but also how and under what conditions it optimally promotes secure caregiver–child relationships.

## 5. Discussion

### 5.1 Mechanisms Linking PCIT to Attachment-related Outcomes in Children with ASD

Parent–Child Interaction Therapy (PCIT) appears to improve several attachment-related outcomes in children with autism spectrum disorder (ASD), despite its original design for managing disruptive behaviors. Its therapeutic components—particularly the emphasis on warmth, consistency, and responsiveness—align closely with mechanisms known to support the formation of secure attachment relationships.

One central pathway lies in the enhancement of parental sensitivity during the Child-Directed Interaction (CDI) phase. Through structured coaching on positive relational behaviors such as labeled praise, reflections, and behavior descriptions, caregivers are supported in becoming more emotionally attuned to their child's cues. For instance, in Vess and Campbell's (2022) study, post-intervention gains in these "Do" skills were significantly associated with increased attachment scores on the Parenting Relationship Questionnaire. Similarly, Allen et al. (2023) documented large improvements in "Do" skill use ( $d = 3.30$ ), reinforcing the idea that warm, contingent responses can help foster trust and relational safety—especially critical for children with ASD who often face challenges initiating and sustaining social engagement.

In parallel, the Parent-Directed Interaction (PDI) phase reduces coercive interactions by promoting consistent discipline strategies and minimizing negative verbalizations. Such behavioral predictability is crucial for cultivating a sense of reliability in the caregiver. Reductions in "Don't" skills, such as commands or criticisms, were observed across multiple studies, including a 26.5-point drop reported by Ros and Graziano (2019). These changes not only improve behavioral compliance but also help stabilize the emotional climate of the home, which supports the development of secure relational expectations.

The contribution of shared positive affect (SPA) also deserves emphasis. Solomon et al. (2008), SPA increased more than threefold from baseline to post-treatment and was linked to improvements in child adaptability and reductions in hyperactivity at follow-up. These findings suggest that mutual enjoyment and affective resonance, though not always explicitly targeted in PCIT, may act as relational mediators of its long-term effects.

Improvements in parent–child dynamics were not confined to clinical settings. Both Masse et al. (2016) and Ros-DeMarize et al. (2025) found that relational and behavioral gains transferred to home and community environments, reinforcing the ecological validity of PCIT and its relevance to daily family life. For children with ASD, such generalization is especially valuable given the consistency often required to sustain developmental gains.

### 5.2 Limitations of the Existing Evidence

Despite the promising associations observed, several methodological and conceptual limitations temper the strength of current conclusions.

One major concern is that few studies conceptualized attachment as a distinct outcome of interest. While measures such as child compliance or parental stress were frequently assessed, only two studies directly evaluated attachment-related constructs using validated tools like the PRQ-P and SPA. This leaves unanswered questions about how, and to what extent, PCIT modifies core attachment patterns beyond improving behavioral functioning.

Another limitation relates to the narrow geographic and cultural scope of the existing research. Six of the seven studies were conducted in the United States, with only one (Hatamzadeh et al., 2010) based in a non-Western context. This raises concerns about cultural generalizability, as parenting practices, emotional expression, and notions of attachment security vary widely across cultural contexts. For instance, in collectivist societies where interdependence and hierarchy are emphasized, the interpretation and impact of PCIT techniques may differ significantly.

Sample characteristics further limit generalizability. Most studies included relatively small samples, often fewer

than 30 participants, with several employing single-case or open-trial designs. Demographic diversity was also limited; participants were predominantly White and middle-class, with only one study (Ros & Graziano, 2019) reporting a primarily Hispanic/Latino sample. Moreover, children with severe cognitive or communicative impairments were underrepresented, suggesting that findings may not extend to the full spectrum of ASD presentations.

The temporal scope of existing studies is also constrained. Longitudinal data beyond six months are rare, making it difficult to determine whether the observed relational improvements are sustained over time. This is particularly important in the context of attachment, which by nature is a developmentally dynamic and long-term construct.

Measurement bias is another issue. Many outcomes were parent-reported, raising concerns about response bias and social desirability effects. Objective observational assessments of attachment—such as the Attachment Q-Sort or the Strange Situation Procedure—were notably absent from the reviewed studies.

### 5.3 Directions for Future Research

To strengthen the evidence base, future studies should adopt more targeted, inclusive, and longitudinal approaches.

There is a clear need for trials that treat attachment as a primary outcome, rather than an incidental benefit. Employing observational tools that assess relational security, caregiver availability, or child proximity-seeking behaviors could provide a more direct understanding of PCIT's impact on attachment dynamics.

Expanding the cultural and geographic diversity of the research is also essential. Cross-national studies comparing the effectiveness of PCIT in different cultural settings could illuminate how parenting norms and interactional expectations shape therapeutic outcomes. These studies may also guide the adaptation of PCIT protocols to contexts in which Western behavioral paradigms are less applicable.

Larger, more heterogeneous samples would enhance statistical power and support subgroup analyses. Recruiting families with diverse racial, socioeconomic, and diagnostic profiles would allow researchers to examine differential effects and tailor interventions accordingly. For instance, children with limited verbal ability or significant sensory sensitivities may require modified versions of PCIT that emphasize nonverbal communication and environmental regulation.

Moreover, long-term follow-up data are needed to evaluate whether relational gains persist, evolve, or diminish over time. This is especially relevant for understanding whether improvements in early attachment behaviors translate into broader developmental benefits in adolescence or adulthood.

Another promising avenue is the exploration of mediating mechanisms. Variables such as SPA, caregiver attunement, or reductions in parenting stress could help explain how PCIT exerts its influence on attachment, providing targets for refinement and enhancement of the model.

Finally, integrating PCIT with other interventions that explicitly target social communication and emotional reciprocity—such as joint attention training or play-based therapies—may yield additive benefits. Multimodal approaches could better address the complex interplay of behavioral, emotional, and relational challenges common among children with ASD.

## 6. Conclusion

This systematic review synthesizes findings from seven empirical studies, collectively indicating that Parent–Child Interaction Therapy (PCIT) holds promise in enhancing attachment-related outcomes among children with Autism Spectrum Disorder (ASD). Across a range of study designs—including randomized controlled trials, open trials, single-case studies, and wait-list controls—PCIT has consistently demonstrated improvements in parent–child interaction quality, a foundational element for fostering emotional bonding and attachment security.

Mechanistically, the Child-Directed Interaction (CDI) phase promotes parental sensitivity through structured use of positive relational behaviors (e.g., labeled praise, reflections), while the Parent-Directed Interaction (PDI) phase introduces consistent discipline strategies that enhance predictability and trust within the caregiver–child dyad. Notably, shared positive affect (SPA) has emerged as a potential mediator, linking intervention effects to broader emotional and behavioral adaptability.

Despite these promising outcomes, current evidence is constrained by several methodological limitations. The majority of studies are geographically concentrated in the United States, with limited cultural representation. Sample sizes are small, ranging from 3 to 55 participants, and few investigations explicitly prioritize attachment as a primary endpoint. Moreover, follow-up durations are typically short, restricting conclusions about the long-term sustainability of PCIT's effects.

In conclusion, PCIT demonstrates potential as an attachment-informed intervention for children with ASD by targeting the core relational processes that underlie secure caregiving relationships. Future research should expand cultural and demographic diversity, employ validated attachment-specific measures, and include extended follow-up assessments to strengthen the evidence base. Through these refinements, PCIT can be more precisely adapted to support the social-emotional development of autistic children and enhance caregiver–child relationships in diverse clinical contexts.

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