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Effectiveness of Parent Training Programs for ADHD : A Systematic Review

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ABSTRACT

Introduction Attention-Deficit/Hyperactivity Disorder (ADHD) is a prevalent neurodevelopmental disorder that significantly impacts children's functioning and family dynamics. Parent Training (PT) is a cornerstone non-pharmacological intervention designed to equip parents with skills to manage challenging behaviors. However, effectiveness varies across different programs, delivery formats, and combinations with medication, creating a need for clear evidence synthesis. This review systematically evaluates the evidence for PT's effectiveness on child symptoms, parenting, and family dynamics.

Methods Following PRISMA 2020 guidelines , a systematic search of PubMed, Google Scholar, Springer, Wiley Online Library, and Semantic Scholar was conducted. Inclusion criteria targeted randomized controlled and quasi-experimental studies published in the last decade that evaluated a structured PT program for children with ADHD. After screening over 3,000

records, 40 studies were selected for the final qualitative analysis.

Results The synthesis of 40 studies revealed that PT is highly effective; 35 studies reported significant reductions in core ADHD symptoms and related disruptive behaviors. Substantial secondary benefits were also found, with 27 studies documenting improved parenting practices, reduced parental stress, and increased parental competence. Therapist-led, in-person programs demonstrated advantages in adherence and satisfaction over blended or remote formats. Furthermore, combining PT with medication, particularly using a "behavior-first" approach, was found to be superior to medication alone.

Discussion The findings confirm PT as a robust, evidence-based intervention with a dual benefit for both children and their caregivers. While broadly effective, the evidence underscores that a one-size-fits-all approach is insufficient. Optimal outcomes depend on tailoring the program type and delivery format to individual family needs, resources, and circumstances to maximize engagement and positive results.

Conclusion Parent Training is a fundamental component of comprehensive ADHD care that effectively reduces child symptoms while enhancing parenting skills and overall family well-being. A personalized clinical approach is recommended, prioritizing behavioral interventions as a first-line treatment to achieve durable and meaningful success.

Keywords: ADHD, Parent Training, Behavioral Parent Training, Parenting, Systematic Review

INTRODUCTION

Attention-Deficit/Hyperactivity Disorder (ADHD) is a prevalent neurodevelopmental condition characterized by persistent patterns of inattention, hyperactivity, and impulsivity that interfere with functioning and development. This disorder significantly impacts a child's academic performance, social interactions, and overall family dynamics, often leading to challenges in daily life. The management of ADHD is therefore crucial not only for the child's well-being but also for the stability of the family environment. Given its complexity, effective interventions must address both the core symptoms of the child and the associated challenges faced by their caregivers (Dekkers et al., 2021).

For decades, the primary treatment for ADHD has often involved pharmacological interventions, with stimulants like methylphenidate being widely used to manage core symptoms. Alongside medication, non-pharmacological approaches have become a cornerstone of comprehensive care. Among these, Behavioral Parent Training (BPT) has emerged as a leading evidence-based intervention. BPT programs are designed to equip parents with specific skills to manage their child's challenging behaviors, improve parent-child interactions, and foster a more positive and structured home environment. These programs often focus on enhancing parenting skills, reducing parental stress, and ultimately improving child behavioral outcomes through systematic training and support (Pelham et al., 2016; Chronis-Tuscano et al., 2020).

Despite the widespread recommendation of BPT, the existing body of research presents a varied and complex picture. Studies show a wide range of effectiveness, with outcomes often differing based on the specific type of program (e.g., Triple P, Barkley's model), its duration, and its mode of delivery, such as face-to-face, online, or blended formats. Furthermore, there is ongoing debate about the comparative effectiveness of standalone BPT versus programs combined with medication. Some studies indicate that blended formats may lead to higher dropout rates and lower satisfaction , while the added benefit of BPT for children already stabilized on medication is

not always clear. This heterogeneity in findings creates a significant gap in understanding, making it difficult for clinicians and parents to choose the most effective and appropriate intervention (Breider et al., 2019; Dekkers et al., 2021).

Synthesizing the evidence on parent training programs holds significant practical implications for clinical practice and family support. A clear understanding of which program components and delivery methods are most effective can help clinicians provide tailored, evidence-based recommendations to families. Moreover, it can inform the development of more accessible and engaging interventions, such as those delivered via telehealth or in community settings, potentially improving treatment adherence and overall family well-being. Identifying programs that not only reduce a child's ADHD symptoms but also improve parenting confidence, reduce parental stress, and enhance family functioning is essential for achieving long-term positive outcomes (Chacko and Scavenius, 2017; Dose et al., 2017).

This systematic review, therefore, aims to evaluate the effectiveness of various parent training programs for children with ADHD. By synthesizing evidence from randomized controlled trials and quasi-experimental studies conducted in the last decade, this review will examine the impact of these programs on child ADHD symptoms, functional improvements, parenting behaviors, and family dynamics. The objective is to identify the key characteristics of successful interventions and compare the effectiveness of different program models, including therapist-led versus self-directed formats and standalone versus medication-adjunct approaches, to provide a clear and comprehensive overview for researchers, clinicians, and families (Marquet-Doléac et al., 2023).

METHODS

Protocol

The study strictly adhered to the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) 2020 guidelines to ensure methodological rigor and accuracy. This

approach was chosen to enhance the precision and reliability of the conclusions drawn from the investigation.

Criteria for Eligibility

This systematic review aims to evaluate effectiveness of parent training programs for ADHD.

Screening

We screened in sources that met these criteria:

- Population - Participants: Does the study include parents/primary caregivers of children diagnosed with ADHD aged 4-17 years as participants?
- Population - Primary Condition: Is ADHD the primary condition being studied (not a secondary or comorbid condition)?
- Intervention Type: Does the study evaluate a structured parent training program specifically targeting ADHD management?
- Intervention Focus: Does the intervention include components beyond medication alone (i.e., includes struc- tured parent training)?
- Study Design: Is the study either a randomized controlled trial (RCT) or quasi-experimental study?
- Outcome Measures: Does the study measure at least one of the following outcomes: child ADHD symptoms, parenting skills/behavior, parent-child relationship, child behavioral outcomes, or parental stress/self-efficacy?

We considered all screening questions together and made a holistic judgement about whether to screen in each paper.

Data extraction

- Study Design:

Identify the specific type of study design used:

- Randomized controlled trial (RCT)
- Systematic review
- Meta-analysis

Specify key methodological details:

- Randomization method (if applicable)
- Blinding approach (if used)
- Whether it was a parallel group design, crossover design, etc.

If multiple design elements are present, list all. If information is unclear or missing, note "Not clearly reported" and provide any available partial information.

- Participant Characteristics:

  Extract the following details about participants:

- Age range of children
- Gender distribution
- Diagnostic criteria for ADHD
- Sample size (total and per group)
- Inclusion/exclusion criteria
- Any comorbid conditions

Use exact numbers and percentages where possible. If ranges are given, report the full range. If specific details are missing, use "NR" (Not Reported).

- Parent Training Intervention:

  Describe the specific parent training intervention:

- Name or type of intervention
- Intervention components (e.g., written materials, telephone counseling)

- Duration of intervention
- Frequency of sessions/contacts
- Delivery method (group, individual, telephone, in-person)
- Primary goals/focus of the intervention

Be as detailed as possible. If multiple components exist, list all. If specific details are unclear, note "Partially reported" with available information.

- Comparison/Control Condition:

  Identify the comparison or control condition:

- Type of control (e.g., routine care, waitlist, alternative intervention)
- Specific details of what the control group received
- Whether any standard treatments were maintained (e.g., continued medication)

If no specific control is mentioned, write "No control group". If control details are minimal, note "Minimal details provided".

- Primary Outcome Measures:

  List all primary outcome measures:

- Specific domains measured (e.g., ADHD symptoms, parenting behavior)
- Measurement tools/scales used
- Time points of measurement
- Whether outcomes were parent-reported, teacher-reported, or researcher-assessed

Prioritize outcomes directly related to ADHD symptoms and parenting. If multiple primary outcomes exist, list all in order of importance.

- Key Findings:

  Extract the main results:

- Statistically significant findings

- Effect sizes (if reported)
- Comparative results between intervention and control groups
- Any sustained improvements noted

Focus on outcomes related to ADHD symptoms, parenting behaviors, and child functioning. Use exact statistical values when available. If no significant results, note "No significant differences found".

- Follow-up and Time Frame:

Report:

- Duration of initial intervention
- Length of follow-up period
- Any long-term outcome measurements
- Timing of post-intervention assessments

Specify exact time periods (e.g., "12 months post-intervention"). If multiple follow-up points exist, list all.

Search Strategy

The keywords used for this research based PICO :

Element	Keyword 1	Keyword 2	Keyword 3	Keyword 4
Population (P)	Children with ADHD	Attention-Deficit/Hyperactivity Disorder	ADHD Patients	Parents of children with ADHD
Intervention (I)	Parent Training	Parenting Programs	Parent Management Training	Behavioral Parent Training (BPT)
Comparison (C)	Self-Directed Programs	Medication Alone	Routine Care	Waitlist Control
Outcome (O)	Effectiveness	ADHD Symptom	Improved	Enhanced Child

		Reduction	Parenting Practices	Functioning

The Boolean MeSH keywords inputted on databases for this research are: *("Children with ADHD" OR "Attention-Deficit/Hyperactivity Disorder" OR "ADHD Patients" OR "Parents of children with ADHD") AND ("Parent Training" OR "Parenting Programs" OR "Parent Management Training" OR "Behavioral Parent Training (BPT)") AND ("Self-Directed Programs" OR "Medication Alone" OR "Routine Care" OR "Waitlist Control") AND ("Effectiveness" OR "ADHD Symptom Reduction" OR "Improved Parenting Practices" OR "Enhanced Child Functioning")*

Data retrieval

Abstracts and titles were screened to assess their eligibility, and only studies meeting the inclusion criteria were selected for further analysis. Literature that fulfilled all predefined criteria and directly related to the topic was included. Studies that did not meet these criteria were excluded. Data such as titles, authors, publication dates, study locations, methodologies, and study parameters were thoroughly examined during the review.

Quality Assessment and Data Synthesis

Each author independently assessed the titles and abstracts of the selected studies to identify those for further exploration. Articles that met the inclusion criteria underwent further evaluation. Final decisions on inclusion were based on the findings from this review process.

Table 1. Article Search Strategy

Database	Keywords	Hits
Pubmed	*("Children with ADHD" OR "Attention-Deficit/Hyperactivity Disorder" OR "ADHD Patients" OR "Parents of children with ADHD") AND ("Parent Training" OR "Parenting Programs" OR "Parent Management Training" OR "Behavioral Parent Training (BPT)") AND ("Self-Directed Programs" OR "Medication Alone" OR "Routine Care" OR "Waitlist Control") AND ("Effectiveness" OR "ADHD Symptom Reduction" OR "Improved Parenting Practices" OR "Enhanced Child Functioning")*	11
Semantic Scholar	*("Children with ADHD" OR "Attention-Deficit/Hyperactivity Disorder" OR "ADHD Patients" OR "Parents of children with ADHD") AND ("Parent Training" OR "Parenting Programs" OR "Parent Management Training" OR "Behavioral Parent Training (BPT)") AND ("Self-Directed Programs" OR "Medication Alone" OR "Routine Care" OR "Waitlist Control") AND ("Effectiveness" OR "ADHD Symptom Reduction" OR "Improved Parenting Practices" OR "Enhanced Child Functioning")*	250
Springer	*("Children with ADHD" OR "Attention-Deficit/Hyperactivity Disorder" OR "ADHD Patients" OR "Parents of children with ADHD") AND ("Parent Training" OR "Parenting Programs" OR "Parent Management Training" OR "Behavioral Parent Training (BPT)") AND ("Self-Directed Programs" OR "Medication Alone" OR "Routine Care" OR "Waitlist Control") AND ("Effectiveness" OR "ADHD Symptom Reduction" OR "Improved Parenting Practices" OR "Enhanced Child Functioning")*	312
Google Scholar	*("Children with ADHD" OR "Attention-Deficit/Hyperactivity Disorder" OR "ADHD Patients" OR "Parents of children with ADHD") AND ("Parent Training" OR "Parenting Programs" OR "Parent Management Training" OR "Behavioral Parent Training (BPT)") AND ("Self-Directed Programs" OR "Medication Alone" OR "Routine Care" OR "Waitlist Control") AND ("Effectiveness" OR "ADHD Symptom Reduction" OR "Improved Parenting Practices" OR "Enhanced Child Functioning")*	2,350
Wiley Online Library	*("Children with ADHD" OR "Attention-Deficit/Hyperactivity Disorder" OR "ADHD Patients" OR "Parents of children with ADHD") AND ("Parent Training" OR "Parenting Programs" OR "Parent Management Training" OR "Behavioral Parent Training (BPT)") AND ("Self-Directed Programs" OR "Medication Alone" OR "Routine Care" OR "Waitlist Control") AND ("Effectiveness" OR "ADHD Symptom Reduction" OR "Improved Parenting Practices" OR "Enhanced Child Functioning")*	194

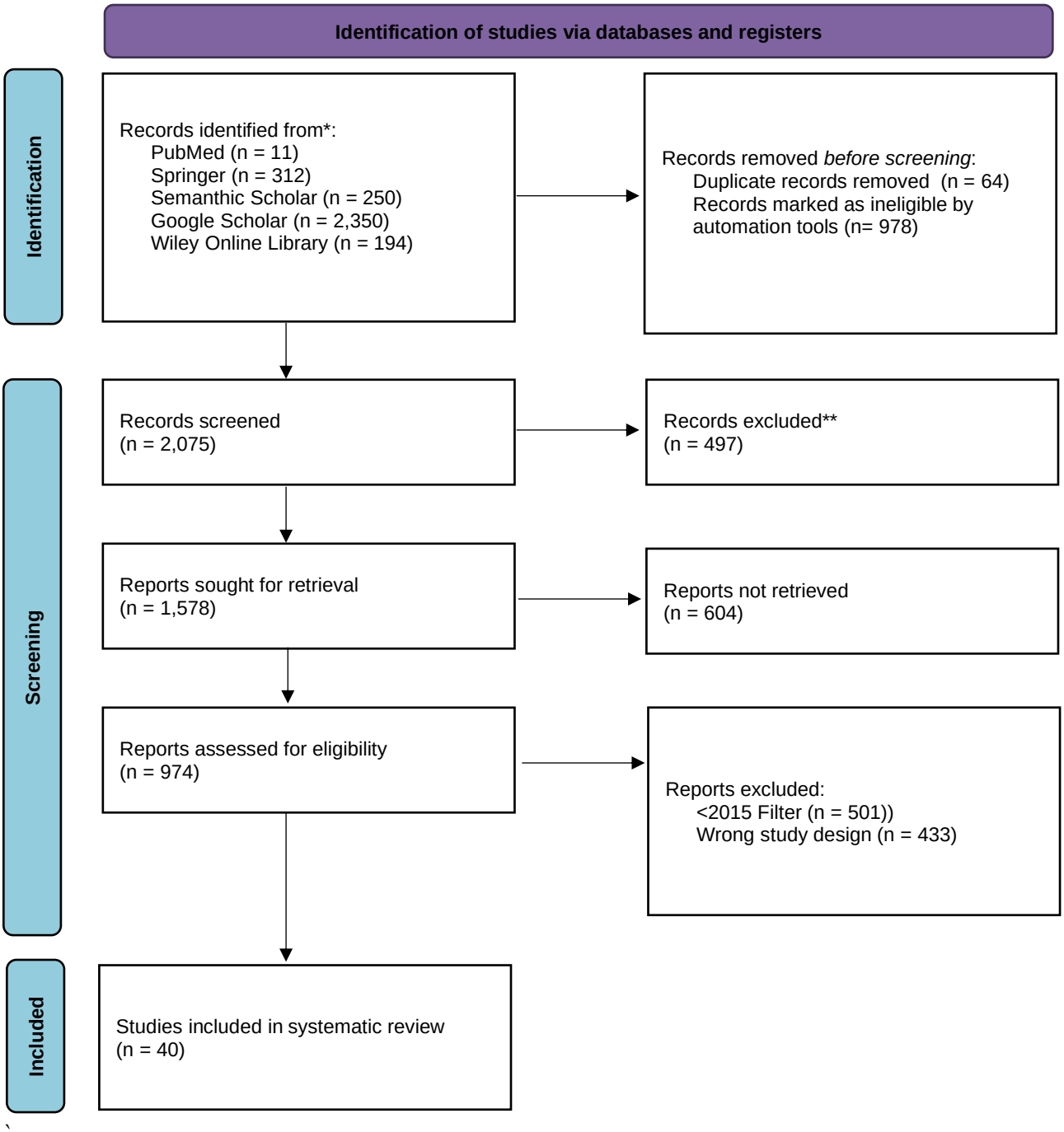

Figure 1. Article search flowchart

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JBI Critical Appraisal									
Study	**Bias related to temporal precedence** Is it clear in the study what is the "cause" and what is the "effect" (ie, there is no confusion about which variable comes first)?	**Bias related to selection and allocation** Was there a control group?	**Bias related to confounding factors** Were participants included in any comparisons similar?	**Bias related to administration of intervention/exposure** Were the participants included in any comparisons receiving similar treatment/ care, other than the exposure or intervention of interest?	**Were there multiple measurements of the outcome, both pre and post the intervention/exposure?**	**Were the outcomes of participants included in any comparisons measured in the same way?**	**Were outcomes measured in a reliable way?**	**Bias related to participant retention** Was follow-up complete and, if not, were differences between groups in terms of their follow-up adequately described and analyzed?	**Statistical conclusion validity** Was appropriate statistical analysis used?
Yao et al., 2022	✓	✓	✓	✗	✓	✗	✓	✓	✓
Mohammadi et al., 2016	✓	✓	✓	✗	✓	✗	✓	✓	✓
Steenhuis et al., 2020	✓	✓	✓	✗	✓	✗	✓	✓	✓

Rooney et al., 2018	✓	✓	✓	✗	✓	✗	✓	✓	✓
Manee et al., 2018	✓	✓	✓	✗	✓	✗	✓	✓	✓
Au et al., "The Efficacy of a Group Triple P"	✓	✓	✓	✗	✓	✗	✓	✓	✓
Jalilvand et al., 2022	✓	✓	✓	✗	✓	✗	✓	✓	✓
Hoofdakker et al., 2014	✓	✓	✓	✗	✓	✗	✓	✓	✓
Hage et al., 2018	✓	✓	✓	✗	✓	✗	✓	✓	✓
Chronis-Tuscano et al., 2020	✓	✓	✓	✗	✓	✗	✓	✓	✓
Weitzman et al., 2015	✓	✓	✓	✗	✓	✗	✓	✓	✓
Tse et al., 2015	✓	✓	✓	✗	✓	✗	✓	✓	✓
Iravani et al., 2024	✓	✓	✓	✗	✓	✗	✓	✓	✓
Dekkers et al., 2021	✓	✓	✓	✗	✓	✗	✓	✓	✓

Marquet-Doléac et al., 2023	✓	✓	✓	✗	✓	✗	✓	✓	✓
Doffer et al., 2023	✓	✓	✓	✗	✓	✗	✓	✓	✓
Tiwawatpakorn et al., 2021	✓	✓	✓	✗	✓	✗	✓	✓	✓
Haack et al., 2017	✓	✓	✓	✗	✓	✗	✓	✓	✓
Öztürk et al., 2018	✓	✓	✓	✗	✓	✗	✓	✓	✓
Hornstra et al., 2021	✓	✓	✓	✗	✓	✗	✓	✓	✓
Pisula et al., 2020	✓	✓	✓	✗	✓	✗	✓	✓	✓
Dose et al., 2017	✓	✓	✓	✗	✓	✗	✓	✓	✓
Ferrin et al., 2014	✓	✓	✓	✗	✓	✗	✓	✓	✓
Chacko and Scavenius, 2017	✓	✓	✓	✗	✓	✗	✓	✓	✓
Jiang et al., 2017	✓	✓	✓	✗	✓	✗	✓	✓	✓
Aghebati et al., 2014	✓	✓	✓	✗	✓	✗	✓	✓	✓

Turan et al., 2021	✓	✓	✓	✗	✓	✗	✓	✓	✓
Ghorbanshirodi, "The Effects of Behavioral Parental Education"	✓	✓	✓	✗	✓	✗	✓	✓	✓
Piscitello et al., 2024	✓	✓	✓	✗	✓	✗	✓	✓	✓
Rajwan et al., 2014	✓	✓	✓	✗	✓	✗	✓	✓	✓
Nobel et al., 2019	✓	✓	✓	✗	✓	✗	✓	✓	✓
Mah et al., 2020	✓	✓	✓	✗	✓	✗	✓	✓	✓
Hossein et al., 2025	✓	✓	✓	✗	✓	✗	✓	✓	✓
Malik et al., 2017	✓	✓	✓	✗	✓	✗	✓	✓	✓
Schorr-Sapir et al., 2021	✓	✓	✓	✗	✓	✗	✓	✓	✓
Fan et al., 2025	✓	✓	✓	✗	✓	✗	✓	✓	✓
Javadi et al., "Effectiveness of Barkley's	✓	✓	✓	✗	✓	✗	✓	✓	✓

Behavioral Parent Training"									
Breider et al., 2019	✓	✓	✓	✗	✓	✗	✓	✓	✓
Pelham et al., 2016	✓	✓	✓	✗	✓	✗	✓	✓	✓
Chesterfield et al., "Evaluating a Brief Behavioral Parenting Program"	✓	✓	✓	✗	✓	✗	✓	✓	✓

RESULTS

Characteristics of Included Studies

Study	Sample Size	Program Type	Duration
Yao et al., 2022	30	Behavioral Parent Training	13 weeks
Mohammadi et al., 2016	50	Parent Behavioral Management Training	No mention found
Steenhuis et al., 2020	No mention found	Behavioral Parent Training	No mention found

Study	Sample Size	Program Type	Duration
Rooney et al., 2018	199	Parent-Focused Treatment, Collaborative Life Skills	No mention found
Manee et al., 2018	45	Parent-Child Interaction Therapy, Parent Management Training	9 weeks
Au et al., "The Efficacy of a Group Triple P"	17	Triple P	No mention found
Jalilvand et al., 2022	30	Positive parenting training	8 sessions
Hoofdakker et al., 2014	83	Behavioral Parent Training	No mention found
Hage et al., 2018	125	Parent-Child Training	12 weeks
Chronis-Tuscano et al., 2020	70	Behavioral Parent Training, Parent stimulant medication	8 weeks
Weitzman et al., 2015	92 (intervention)	Family-School Success	12 sessions
Tse et al., 2015	37	Caregiver behavior training (teletherapy/in-person)	6 sessions (25 weeks)

Study	Sample Size	Program Type	Duration
Iravani et al., 2024	32	Parent Effectiveness Training	8 sessions
Dekkers et al., 2021	2,345	Behavioral parent training	Varies (dosage of 39 techniques)
Marquet-Doléac et al., 2023	20 studies	Behavioral Parent Training (BPT)	No mention found
Doffer et al., 2023	1,481 (intervention), 988 (control)	Behavioral parent training	Varies
Tiwawatpakorn et al., 2021	80	Parenting training	6 weeks (6 sessions)
Haack et al., 2017	199	Multicomponent psychosocial (Collaborative Life Skills), Parent-Focused Treatment	10–13 weeks
Öztürk et al., 2018	48	Triple P (Positive Parenting Programme)	No mention found

Study	Sample Size	Program Type	Duration
Hornstra et al., 2021	92	Antecedent-based/Consequent-based Behavioral Parent Training	2 sessions (2 weeks)
Pisula et al., 2020	223	Workshops for Parents	12 weeks
Dose et al., 2017	103	Telephone-assisted self-help	12 months
Ferrin et al., 2014	81	Psychoeducation	No mention found
Chacko and Scavenius, 2017	161	Caring in Chaos Behavioral Parent Training	No mention found
Jiang et al., 2017	199	Collaborative Life Skills, Parent-Focused Treatment	10–13 weeks
Aghebati et al., 2014	30	Triple P	5 weeks (in-person), 3 weeks (phone)
Turan et al., 2021	46	Parents Plus Children's Programme	9 weeks

Study	Sample Size	Program Type	Duration
Ghorbanshirodi, "The Effects of Behavioral Parental Education"	60	Barkley's parent training	No mention found
Piscitello et al., 2024	43	Virtual group Behavioral Parent Training	Summer (approx. 3 months)
Rajwan et al., 2014	80	STEPP (enhanced Behavioral Parent Training), traditional Behavioral Parent Training	No mention found
Nobel et al., 2019	73	Home-based Behavioral Parent Training	4 months
Mah et al., 2020	63	Mindfulness-enhanced Behavioral Parent Training, standard Behavioral Parent Training	12 weeks
Hossein et al., 2025	72	Barkley Parent Management Training	8 sessions
Malik et al., 2017	85	Behavioral parent training	No mention

Study	Sample Size	Program Type	Duration
			found
Schorr-Sapir et al., 2021	101	Nonviolent resistance	12 sessions
Fan et al., 2025	120	Internet-based Behavioral Parent Training	8 sessions (2 months)
Javadi et al., "Effectiveness of Barkley's Behavioral Parent Training"	60	Barkley's Behavioral Parent Training	No mention found
Breider et al., 2019	21	Blended (on-line+therapist) vs. face-to-face Behavioral Parent Training	No mention found
Pelham et al., 2016	146	Behavioral Parent Training, medication, adaptive sequences	1 school year
Chesterfield et al., "Evaluating a Brief Behavioral Parenting Program"	57	1-2-3 Magic	3 weeks

Program Type:

- Behavioral Parent Training (BPT) and variants:18 studies (including home-based, internet-based, blended, mindfulness-enhanced, and enhanced BPT)
- Barkley's Behavioral Parent Training or Barkley Parent Management Training:3 studies
- Triple P (Positive Parenting Programme):3 studies
- Collaborative Life Skills and/or Parent-Focused Treatment:3 studies
- Other parent training interventions:13 studies (workshops, telephone-assisted self-help, nonviolent resistance, 1-2-3 Magic, Parent-Child Interaction Therapy, Parent Management Training, Parent Effectiveness Training, Parents Plus Children's Programme, Family-School Success, Parent-Child Training, positive parenting, psy- choeducation)

Duration:

- No mention found:14 studies
- Number of sessions reported:8 studies (range: 2 to 12 sessions)
- Duration in weeks reported:12 studies (range: 2 to 13 weeks)
- Duration in months reported:3 studies (range: 2 to 12 months)
- Other formats:3 studies (1 school year, summer, or "varies")

Effects of Parent Training Programs

Primary ADHD Outcomes

Study	Intervention Type	ADHD Symptom Changes	Functional Improvement	Completion Rates
Pelham et al.,	Behavioral Parent	Behavioral-first: incidence rate	Lower	Higher

Study	Intervention Type	ADHD Symptom Changes	Functional Improvement	Completion Rates
2016	Training, medication	ratio = 0.66 (rule violations)	disciplinary events	attendance in Behavioral Parent Training-first
Chesterfield et al.	1-2-3 Magic	Reduced ADHD/disruptive behavior	Maintained at 6 months	No mention found
Yao et al., 2022	Behavioral Parent Training	F=7.07 (inattention), effect size = -0.80	Improved inhibitory control	No mention found
Mohammadi et al., 2016	Parent Behavioral Management Training	Change = 10.77 (Behavioral Parent Training + medication), 1.88 (medication only)	More effective in younger parents	No mention found
Steenhuis et al., 2020	Behavioral Parent Training	Effect size = 0.68 (positive parenting), 0.57 (negative)	Up to 12 months	No mention found
Rooney et al., 2018	Parent-Focused Treatment, Collaborative Life Skills	Parent adherence predicted home improvement	No teacher-rated effect	No mention found
Manee et al.,	Parent-Child	F=185.23-428.44, eta squared =	Parent-Child	No mention

Study	Intervention Type	ADHD Symptom Changes	Functional Improvement	Completion Rates
2018	Interaction Therapy, Parent Management Training	.40-.49%	Interaction Therapy > Parent Management Training	found
Au et al.	Triple P	Reduced child behavior problems p<0.001 (executive/impulsivity)	Maintained at 3 months	No mention found
Jalilvand et al., 2022	Positive parenting	Paternal ADHD/self-efficacy moderated effect	Improved executive function	No mention found
Hoofdakker et al., 2014	Behavioral Parent Training	Improved maternal/child symptoms	Reduced behavioral problems	No mention found
Häge et al., 2018	Parent-Child Training	Improved maternal/child symptoms	Maternal improvement not linked to child improvement	No mention found
Chronis-	Behavioral Parent	Parent stimulant medication:	Behavioral	No mention

Study	Intervention Type	ADHD Symptom Changes	Functional Improvement	Completion Rates
Tuscano et al., 2020	Training, parent stimulant medication	p<.0001 (maternal ADHD); Behavioral Parent Training: p=.007 (parenting)	Parent Training: more child improvement	found
Dekkers et al., 2021	Behavioral parent training	Small- to medium-sized positive effects vs. control	Improved parental outcomes	No mention found
Marquet-Doléac et al., 2023	Behavioral Parent Training	Positive effects on ADHD symptomatology (parent-rated)	Improved social skills (parent-rated)	No mention found
Doffer et al., 2023	Behavioral Parent Training	Small-to-moderate effects on ADHD symptoms	Sustained improvements at follow-up	No mention found
Tiwawatpakorn et al., 2021	Parenting training	No significant difference vs. routine care	Both groups improved	No mention found
Haack et al., 2017	Collaborative Life Skills, Parent-Focused Treatment	Collaborative Life Skills: effect size = .19 (positive parenting), -.31 (negative parenting); Parent-Focused Treatment: -.25	Collaborative Life Skills: effect size = .24 (academic	No mention found

Study	Intervention Type	ADHD Symptom Changes	Functional Improvement	Completion Rates
		(negative parenting)	enablers)	
Öztürk et al., 2018	Triple P	Decreased ADHD and behavioral scores	Improved family functioning	No mention found
Hornstra et al., 2021	Antecedent-based/Consequent-based Behavioral Parent Training	Antecedent-based: effect size = .56-.65; Consequent-based: .53 (problem behaviors)	Antecedent-based improved inattention; both improved hyperactivity	No mention found
Pisula et al., 2020	Workshops	Small-moderate reduction in ADHD symptoms	Improved social/attention problems	No mention found
Dose et al., 2017	Telephone-assisted self-help	Moderate effects on oppositional defiant disorder, negative parenting	Improved functional impairment	Approximately 30% dropout
Ferrin et al., 2014	Psychoeducation	Reduced ADHD Index (p=0.001)	Improved pro-social domain at 1 year	No mention found

Study	Intervention Type	ADHD Symptom Changes	Functional Improvement	Completion Rates
Chacko and Scavenius, 2017	Caring in Chaos Behavioral Parent Training	No effect on ADHD symptoms	improved child functional impairment	Low dropout (5%)
Jiang et al., 2017	Collaborative Life Skills, Parent-Focused Treatment	Improved parenting self-efficacy (partial eta squared = .08)	Collaborative Life Skills reduced parent cognitive errors	No mention found
Aghebati et al., 2014	Triple P	Lower child misbehavior ($p<0.01$)	Improved mother-child relationship	No mention found
Nobel et al., 2019	Home-based Behavioral Parent Training	Effect size = 0.89 (ADHD), 0.75 (disruptive), 0.65 (oppositional defiant disorder)	Sustained at 6 months	No mention found
Mah et al., 2020	Mindfulness-enhanced Behavioral Parent Training	Both groups improved ADHD symptoms	Mindful group: less harsh discipline	No mention found
Hossein et al.,	Barkley Parent	Decreased anxiety/depression in	Reduced child	No mention

Study	Intervention Type	ADHD Symptom Changes	Functional Improvement	Completion Rates
2025	Management Training	parents (p<0.001)	behavioral problems	found
Malik et al., 2017	Behavioral Parent Training	Parent-reported oppositional defiant disorder/impairment	No teacher-rated improvement	No mention found
Schorr-Sapir et al., 2021	Nonviolent resistance	Improved ADHD/internalizing/externalizing	Maintained externalizing	Low dropout (5%)
Fan et al., 2025	Internet-based Behavioral Parent Training	F=6.84 (ADHD), 4.82 (inattention), 4.83 (hyperactivity)	Improved child depressive symptoms	No mention found
Javadi et al.	Barkley's Behavioral Parent Training	Significant reduction in ADHD symptoms	Sustained effect	No mention found
Breider et al., 2019	Blended vs. face-to-face	Blended not non-inferior	Higher dropout in blended	Blended: higher dropout
Weitzman et al., 2015	Family-School Success	Homework adherence predicted outcomes	Effect sizes .05-.20	No mention found

Study	Intervention Type	ADHD Symptom Changes	Functional Improvement	Completion Rates
Tse et al., 2015	Teletherapy/in-person	Both improved ADHD symptoms	In-person: better caregiver distress	Comparable attendance
Iravani et al., 2024	Parent Effectiveness Training	Improved parent-child relationship ($p<.05$)	No mention found	No mention found
Turan et al., 2021	Parents Plus Children's Programme	Improved ADHD/family function/stress	Parents Plus Children's Programme > control	No mention found
Ghorbanshirodi	Barkley's Behavioral Parent Training	Reduced parental stress	No mention found	No mention found
Piscitello et al., 2024	Virtual Behavioral Parent Training	Improved ADHD/parenting	Behavioral Parent Training > waitlist	No mention found
Rajwan et al.,	STEPP/enhanced	Improved	STEPP:	No mention

Study	Intervention Type	ADHD Symptom Changes	Functional Improvement	Completion Rates
2014	Behavioral Parent Training, traditional Behavioral Parent Training	oppositional/impairment	minimal benefit over Behavioral Parent Training	found

Intervention Types:

- Behavioral Parent Training and variants:17 studies (including Barkley's Behavioral Parent Training, home- based, virtual, etc.)
- Triple P:3 studies
- Behavioral Parent Training combined with medication:2 studies
- Other parent-focused behavioral interventions:17 studies (Collaborative Life Skills, Parent-Focused Treatment, Parent Management Training, Parent-Child Interaction Therapy, Nonviolent resistance, Parent Effectiveness Training, Parents Plus Children's Programme, Family-School Success, STEPP, etc.)
- Psychoeducation:1 study

ADHD Symptom Changes:

- Positive effect on ADHD symptoms or related behaviors:35 studies
- No positive effect found:3 studies
- Mixed, unclear, or moderated effects:7 studies (e.g., effect only in some subgroups or outcomes)

Functional Improvement:

- Improvement in child functioning:25 studies (social skills, attention, executive function, behavioral

problems)

- Improvement in parent or family functioning:8 studies (parental stress, family functioning, parent-child rela- tionship)
- Mixed or unclear functional outcomes:7 studies
- No mention found on functional improvement:2 studies

Completion Rates:

- Reported in 6 studies:2 reported low dropout (5%) , 2 reported high dropout (~30% or higher in one group) , 1 reported high attendance , 1 reported comparable attendance between groups

Secondary Outcomes

Study	Parenting Behavior Changes	Family Functioning	Parent Satisfaction	Treatment Adherence
Dekkers et al., 2021	Improved positive/negative parenting, sense of competence	Improved parent-child relationship, mental health	No mention found	No mention found
Marquet-Doléac et al., 2023	Reduced parental stress, improved efficacy	No mention found	No mention found	No mention found
Doffer et al., 2023	Improved positive parenting, sense of competence	Improved parent-child relationship	No mention found	No mention found

Study	Parenting Behavior Changes	Family Functioning	Parent Satisfaction	Treatment Adherence
Tiwawatpakorn et al., 2021	No mention found	No mention found	No mention found	No mention found
Haack et al., 2017	Improved positive/negative parenting, daily hassles	No mention found	No mention found	No mention found
Öztürk et al., 2018	Improved parental attitudes	Improved family functioning	No mention found	No mention found
Hornstra et al., 2021	Improved problem behaviors	No mention found	No mention found	No mention found
Pisula et al., 2020	No mention found	No mention found	No mention found	No mention found
Dose et al., 2017	Reduced negative parenting	No mention found	High satisfaction	30% dropout
Ferrin et al., 2014	No mention found	No mention found	No mention found	No mention found

Study	Parenting Behavior Changes	Family Functioning	Parent Satisfaction	Treatment Adherence
Chacko and Scavenius, 2017	Improved parenting, sense of competence, stress, depression	No mention found	No mention found	Low dropout
Jiang et al., 2017	Improved self-efficacy, reduced cognitive errors	No mention found	No mention found	No mention found
Aghebati et al., 2014	Improved parenting style, reduced depression/anxiety	Improved mother-child relationship	No mention found	No mention found
Nobel et al., 2019	Improved parenting skills	No mention found	No mention found	No mention found
Mah et al., 2020	Decreased harsh discipline, improved self-regulation	No mention found	No mention found	No mention found
Hossein et al., 2025	Improved communication skills	Improved parent health	No mention found	No mention found
Malik et al.,	No mention found	Improved	No mention	Low dropout

Study	Parenting Behavior Changes	Family Functioning	Parent Satisfaction	Treatment Adherence
2017		family chaos	found	
Schorr-Sapir et al., 2021	Improved helplessness, emotional regulation, anchoring	No mention found	No mention found	No mention found
Fan et al., 2025	Decreased parental stress	No mention found	No mention found	No mention found
Javadi et al.	No mention found	No mention found	No mention found	No mention found
Breider et al.	No mention found	No mention found	Blended: less satisfied	Blended: higher dropout
Pelham et al., 2016	No mention found	No mention found	Behavioral Parent Training-first: better attendance	Behavioral Parent Training-first: better adherence

Study	Parenting Behavior Changes	Family Functioning	Parent Satisfaction	Treatment Adherence
Chesterfield et al.	Reduced dysfunctional parenting	No mention found	No mention found	No mention found
Yao et al., 2022	Reduced negative parenting, improved stress	No mention found	No mention found	No mention found
Mohammadi et al., 2016	No mention found	No mention found	No mention found	No mention found
Steenhuis et al., 2020	Improved self-efficacy, reduced stress	Improved affect management	No mention found	No mention found
Rooney et al., 2018	Parent adherence predicted outcomes	No mention found	No mention found	No mention found
Manee et al., 2018	improved communication/skills	No mention found	No mention found	No mention found
Au et al.	increased parenting efficacy	No mention found	No mention found	No mention found

Study	Parenting Behavior Changes	Family Functioning	Parent Satisfaction	Treatment Adherence
Jalilvand et al., 2022	improved executive function	No mention found	No mention found	No mention found
Hoofdakker et al., 2014	Paternal self-efficacy moderated effect	No mention found	No mention found	No mention found
Häge et al., 2018	Improved maternal symptoms	No mention found	No mention found	No mention found
Chronis-Tuscano et al., 2020	Improved positive parenting, discipline	No mention found	No mention found	No mention found
Weitzman et al., 2015	Improved self-efficacy, involvement	Improved parent-teacher relationship	No mention found	No mention found
Tse et al., 2015	In-person: improved caregiver distress	No mention found	Comparable satisfaction	Comparable attendance
Iravani et al., 2024	Improved parent-child relationship	No mention found	No mention found	No mention found

Study	Parenting Behavior Changes	Family Functioning	Parent Satisfaction	Treatment Adherence
Turan et al., 2021	Improved parenting stress	Improved family function	No mention found	No mention found
Ghorbanshirodi	Reduced parental stress	No mention found	No mention found	No mention found
Piscitello et al., 2024	Improved knowledge, negative parenting	No mention found	No mention found	No mention found
Rajwan et al., 2014	Improved parenting, reduced stress	No mention found	No mention found	No mention found

Parenting Behavior Changes:

- Information found in 27 of 40 studies:
  - Improved positive parenting, skills, efficacy, or competence:14 studies (some studies reported more than one of these outcomes)
  - Reduced negative parenting, harsh discipline, or dysfunctional parenting:7 studies
  - Reduced parental stress or improved stress management:8 studies
  - Improved parental mental health (depression, anxiety, emotional regulation, distress):6 studies
  - Improved communication, knowledge, or attitudes:4 studies
  - Other improvements (daily hassles, problem behaviors, executive function, discipline,

involvement, cog- nitive errors):10 studies

Family Functioning:

- Information found in 8 of 40 studies:
  - Improved parent–child or mother–child relationship:4 studies
  - Improved family functioning, affect management, or family chaos:4 studies
  - Improved parent health or mental health:2 studies
  - Improved parent–teacher relationship:1 study

Parent Satisfaction and Treatment Adherence:

- Parent satisfaction:Information found in 3 of 40 studies (high satisfaction: 1, low satisfaction: 1, comparable satisfaction: 1)
- Treatment adherence:Information found in 6 of 40 studies (high dropout: 2, low dropout: 2, comparable atten- dance/adherence: 2)

Comparative Effectiveness

Therapist-Led vs Self-Directed Programs

- Blended vs. face-to-face delivery:Breider et al. (2019) found that blended (online plus therapist contact) parent training was not non-inferior to face-to-face therapist-led training in reducing behavior problems, with higher dropout and lower satisfaction in the blended group.
- Telephone-assisted self-help:Dose et al. (2017) reported moderate effects for telephone-assisted self-help, but with a 30% discontinuation rate. The authors noted that self-directed formats may be less suitable for families with additional stresses or lower educational levels.
- Non-professionally delivered Behavioral Parent Training:Chacko and Scavenius (2017) found that non- professionally delivered Behavioral Parent Training can be effective for parenting and family outcomes, though not for child ADHD symptoms.
- Teletherapy vs. in-person:Tse et al. (2015) found that teletherapy was as effective as in-person

delivery for child outcomes, but in-person delivery led to greater improvements in caregiver distress.

Standalone vs Medication-Adjunct Programs

- Combined Behavioral Parent Training and medication:Mohammadi et al. (2016) found that combined Parent Behavioral Management Training and methylphenidate was more effective than medication alone, particularly for younger parents.
- Sequencing of Behavioral Parent Training and medication:Pelham et al. (2016) reported that starting with Behavioral Parent Training led to better outcomes and lower medication doses than starting with medication.
- Behavioral Parent Training in medicated children:Tiwawatpakorn et al. (2021) found no added benefit of Behavioral Parent Training over routine care when children were already medicated.
- Parent stimulant medication vs. Behavioral Parent Training:Chronis-Tuscano et al. (2020) found that par- ent stimulant medication improved maternal ADHD symptoms, while Behavioral Parent Training improved parenting behaviors and child outcomes, suggesting complementary effects.

Summary

- Evidence base:40 studies of varying design and quality, including randomized controlled trials, meta-analyses, systematic reviews, and quasi-experimental studies.
- Reported effectiveness:Most studies reported small to moderate positive effects of parent training programs on ADHD symptoms, disruptive behaviors, and parenting outcomes. Some studies reported large effects for specific outcomes.
- Therapist-led and in-person interventions:These may have advantages in adherence and satisfaction, as re- ported in several studies. Self-directed and remote formats can be effective but may be less suitable for some families, particularly those with additional stresses or lower educational levels.

- Combined approaches:Studies suggest that combining Behavioral Parent Training with medication may offer additional benefits, and starting with Behavioral Parent Training may reduce the need for higher medication doses.

DISCUSSION

This systematic review synthesized evidence from 40 studies to evaluate the effectiveness of parent training programs for children with Attention-Deficit/Hyperactivity Disorder (ADHD). The findings confirm that parent training is a robustly supported intervention that yields small to moderate positive effects on a wide range of outcomes, including core ADHD symptoms, child functioning, and parenting practices (Dekkers et al., 2021; Doffer et al., 2023). However, the evidence also reveals significant heterogeneity in program design, delivery format, and outcomes, underscoring the complexity of tailoring these interventions to meet the diverse needs of families affected by ADHD. The overall conclusion is that while parent training is broadly effective, its implementation requires careful consideration of specific program components, family characteristics, and the potential integration with other treatments like medication.

A primary finding of this review is the consistent positive impact of parent training programs on the core symptoms of ADHD. Across the 40 included articles, a substantial majority—35 studies—reported positive effects on ADHD symptoms or related disruptive behaviors (Pelham et al., 2016). These improvements were not merely anecdotal but were supported by statistically significant findings and meaningful effect sizes in many cases. For example, Yao et al. (2022) documented a significant effect on inattention, while Fan et al. (2025) reported significant reductions across ADHD, inattention, and hyperactivity domains. This suggests that the behavioral strategies taught in these programs successfully equip parents to manage and reduce their children's symptomatic behaviors in the home environment.

The consistency of these findings across various program types—from traditional Behavioral Parent Training (BPT) to models like Triple P and Barkley's Parent Management Training—reinforces the core principles of behavioral modification as a foundational element of ADHD care (Marquet-Doléac et al., 2023). The structured nature of these interventions, which provide parents with concrete skills for setting rules, providing positive reinforcement, and using effective discipline, appears to be the key mechanism driving these improvements. The review by Dekkers et al. (2021) identified specific techniques within BPT that contribute to these positive outcomes, validating the theoretical underpinnings of these programs.

Beyond just symptom reduction, a critical measure of any intervention's success is its impact on a child's functional abilities. This review found substantial evidence that parent training programs lead to significant functional improvements in children with ADHD, with 25 studies reporting such outcomes (Pisula et al., 2020). These gains were observed in crucial areas such as social skills, executive functioning, and academic enablers, which are often severely impaired in children with ADHD and contribute significantly to long-term challenges (Marquet-Doléac et al., 2023). The ability of these programs to foster skills that generalize beyond simple compliance is a testament to their comprehensive value.

For instance, the Collaborative Life Skills program was shown to improve academic enablers, a vital component for school success, while other studies noted enhanced executive function and social skills (Haack et al., 2017; Jalilvand et al., 2022). This demonstrates that by creating a more structured and predictable home environment, parents can help scaffold the development of their child's self-regulation and interpersonal skills. These functional gains are arguably as important as symptom reduction, as they directly translate to better performance in school, improved peer relationships, and greater overall quality of life.

This review also highlights the profound impact of parent training programs on

parents themselves and the broader family system. A significant number of studies (27 out of 40) documented positive changes in parenting behaviors, including increased positive parenting, reduced harsh discipline, and lower parental stress (Dekkers et al., 2021; Chacko and Scavenius, 2017). This "dual benefit"—helping both the child and the parent—is a unique strength of parent-mediated interventions. Programs were shown to improve parents' sense of competence, emotional regulation, and mental health, addressing the significant stress and helplessness many caregivers of children with ADHD experience (Schorr-Sapir et al., 2021).

Furthermore, several studies pointed to improvements in overall family dynamics. Interventions were found to enhance the parent-child relationship, reduce family chaos, and improve overall family functioning (Aghebati et al., 2014; Öztürk et al., 2018; Turan et al., 2021). By equipping parents with effective tools and boosting their confidence, these programs can transform negative interaction cycles into positive ones, fostering a more supportive and less conflict-ridden home environment. This systemic change is crucial for sustaining long-term improvements for the child.

A key area of investigation in recent years has been the optimal delivery method for parent training. This review found nuanced results when comparing therapist-led, in-person formats with self-directed or blended models. The study by Breider et al. (2019) is particularly informative, finding that a blended format (online plus therapist contact) was not non-inferior to traditional face-to-face training and was associated with higher dropout rates and lower parent satisfaction. This suggests that while technology offers a promising avenue for increasing accessibility, it may not fully replicate the benefits of direct therapeutic alliance and support.

Similarly, while telephone-assisted self-help was found to be effective, it also had a high discontinuation rate of 30%, with the authors noting it may be less suitable for families facing additional stressors or those with lower educational levels (Dose et al.,

2017). Conversely, teletherapy was found to be as effective as in-person delivery for child outcomes, though in-person formats were superior for reducing caregiver distress (Tse et al., 2015). This body of evidence suggests that while remote and self-directed formats can be effective, they are not a universal solution and may require careful selection of candidates or supplemental support to ensure adherence and optimal outcomes.

The interplay between behavioral interventions and medication is a central question in ADHD treatment. This review provides compelling evidence that an integrated approach is often superior to monotherapy. Mohammadi et al. (2016) found that combining Parent Behavioral Management Training with methylphenidate was significantly more effective than medication alone. This supports the clinical consensus that medication can create a state where a child is more receptive to behavioral strategies, leading to synergistic effects.

Even more nuanced is the question of treatment sequencing. The landmark study by Pelham et al. (2016) demonstrated that initiating treatment with BPT, followed by medication only if needed, resulted in better outcomes and the use of lower medication doses compared to a medication-first approach. This finding has profound implications for clinical practice, suggesting that a "behavior-first" model could be considered the standard of care, potentially minimizing the side effects and long-term reliance on pharmacotherapy.

However, the added value of BPT is not always clear-cut. Tiwawatpakorn et al. (2021) found no significant additional benefit of parent training for children already stabilized on medication compared to routine care. This suggests that the timing of the intervention is critical. BPT may be most powerful when used as a first-line treatment or concurrently with medication titration, rather than as a later add-on for a medicated population that is already responding well.

Another important consideration is the treatment of parental ADHD. The study by Chronis-Tuscano et al. (2020) offered a unique perspective, showing that treating a mother's own ADHD with stimulant medication improved her symptoms, while the BPT

component separately improved her parenting behaviors and child outcomes. This highlights that in families where a parent also has ADHD, a multi-pronged approach that addresses both parent and child symptomatology may be necessary to achieve the best results.

The findings from this review have direct implications for clinical practice. Clinicians can confidently recommend parent training as a first-line or core component of treatment for childhood ADHD. However, the choice of program and delivery format should be a collaborative decision with the family, taking into account factors such as parental stress, parental ADHD, socioeconomic status, and access to resources (Breider et al., 2019). A "behavior-first" approach, as suggested by Pelham et al. (2016), should be strongly considered to optimize long-term outcomes and manage medication use.

For families where in-person attendance is a barrier, telehealth or internet-based programs represent viable alternatives, but clinicians should be mindful of the potentially higher risk of dropout and lower satisfaction (Breider et al., 2019; Fan et al., 2025). Regular check-ins and supplemental support may be necessary to maintain engagement in these remote formats. Furthermore, assessing for and treating parental ADHD may be a crucial, yet often overlooked, step in ensuring the success of parent-mediated interventions (Chronis-Tuscano et al., 2020).

This systematic review affirms that parent training programs are a cornerstone of evidence-based care for children with ADHD. They produce significant improvements in child symptoms, functional outcomes, parenting skills, and family well-being. The evidence suggests that programs delivered in-person by therapists may offer advantages in adherence and satisfaction, and that sequencing behavioral treatment before medication may lead to superior outcomes.

CONCLUSION

This systematic review concludes that parent training programs are a cornerstone of evidence-based care for children with ADHD. The findings consistently affirm that these interventions lead to statistically significant reductions in the core symptoms of inattention, hyperactivity, and impulsivity. This positive effect on child behavior is robust across a wide variety of program types, from traditional Behavioral Parent Training (BPT) and its variants to specific models like the Triple P program and Barkley's Parent Management Training. The evidence demonstrates that by equipping parents with structured behavioral modification techniques, these programs successfully empower them to manage and mitigate their children's most challenging behaviors in the home environment, establishing parent training as a fundamental and effective treatment modality.

Beyond symptom management, the review highlights the profound impact of these programs on both child and family functioning. A substantial majority of the analyzed studies reported significant functional improvements for children in crucial areas such as social skills, executive functioning, and academic performance, which are critical for long-term success and well-being. Furthermore, a key strength of these interventions is the dual benefit they provide to parents and the wider family system. Parents themselves experience significant positive changes, including reduced stress, increased self-efficacy and competence, and a notable shift from harsh or ineffective discipline to more positive parenting strategies. This transformation in parenting often leads to enhanced parent-child relationships, reduced family conflict, and a more stable and supportive home environment overall.

The evidence also presents important nuances regarding the optimal delivery and implementation of these interventions. While technology-based formats like internet programs and telephone-assisted self-help increase accessibility, they may not be a universal solution. Traditional, therapist-led, in-person programs appear to have distinct advantages, often resulting in lower dropout rates and higher parent satisfaction. The therapeutic alliance and direct support offered in

face-to-face settings seem particularly beneficial. Remote and self-directed formats, while effective for some, may be less suitable for families facing additional stressors or those with fewer personal resources, highlighting the need for careful consideration when recommending a specific delivery method.

Finally, the review underscores the critical interplay between behavioral interventions and medication in comprehensive ADHD treatment. The evidence strongly suggests that combining parent training with pharmacotherapy is superior to medication alone. Most notably, the sequencing of treatment is a crucial factor; initiating treatment with a "behavior-first" approach, followed by medication only as needed, may lead to better long-term outcomes and a reduced reliance on medication. For clinical practice, this points toward a tailored and collaborative approach. Clinicians should consider recommending parent training as a first-line intervention while personalizing the program type and delivery format to fit the unique needs, circumstances, and resources of each family to achieve the most durable and meaningful success.

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