

---

## **Parental Interventions for Problems and Issues in Children with ADHD: A Systematic Review**

---

**Hakami, M. H.\***

**Che Ahmad, A.\***

*PhD student at USM, Penang, Malaysia & Lictural at Taif University, KSA  
Program Chairperson Special Education, School of Educational Studies,  
Universiti Sains Malaysia, 11800 USM, Penang, Malaysia  
Hakami.mona@student.usm.my*

**Abstract:** This paper systematically reviews randomized controlled trial evidence of the effectiveness of parental interventions for problems and issues in children with ADHD. A comprehensive review of randomized controlled trials or non-randomized but properly controlled trials involving children with ADHD or high levels of ADHD symptoms was conducted. This systematic analysis focuses on parent-administered behavioural interventions for ADHD children. Eight studies met the review's inclusion criteria. This review found that parent-administered behavioural interventions improved ADHD symptom outcomes in children. Parent-administered behaviour interventions generally reduced ADHD symptoms and behavioural issues. These results confirm clinical practice recommendations and imply that parental treatments are efficacious. Therefore, the availability of parenting interventions should be ensured to deal with behavioural problems and issues among children with ADHD.

**Keywords:** ADHD, Parental Interventions, Behavioural Therapies, ADHD Symptoms, Self-esteem, Self-control.

---

Received: 12/05/2022

Accepted: 15/07/2022

Proofreading: 20/07/2022

Available online: 31/12/2022

### **Introduction:**

Attention Deficit Hyperactivity Disorder, sometimes known as ADHD, is a mental illness that has been recognized for a long time as impacting the capability of children to operate (Aliye et al, 2022; Magnus et al., 2022). It is considered to be the most prevalent neurobehavioral disorder in school-aged children (Poznanski et al, 2021). According to studies, 8%–12% of children (9.2% of boys and 3.0% of girls) meet diagnostic criteria for the clinical disorder ADHD (Zachor et al., 2009). The disorder is characterized by developmentally inappropriate patterns of inattentiveness, hyperactivity, and impulsivity. Patients with this condition often display behaviours that are abnormal for their developmental stage, such as excessive levels of impulsivity, inattention, or hyperactivity (Poznanski et al, 2021). Usually, this disorder co-occurs with another disorder. More than two thirds of clinical samples of ADHD-affected children had at least one co-occurring mental health condition, which is more frequently an anxiety or oppositional defiant disorder. This high risk of mental problems is not just seen in children; it is also reported in their families (Ghanizadeh, 2011).

The Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM IV) merged the previously distinct Attention Deficit Disorder and Attention Deficit Hyperactivity Disorder into a single disorder with three subtypes: predominantly inattentive, predominantly hyperactive, and a combined type (Magnus et al., 2022). ADHD is characterized by a pattern of persistent inattention and/or hyperactivity-impulsivity that interferes with functioning or development (National Institute of Mental Health (NIMH)). Some individuals with ADHD primarily exhibit symptoms of inattention. Others predominantly exhibit hyperactivity-impulsivity symptoms. Some individuals exhibit both types of symptoms. Numerous individuals exhibit inattention, unfocused motor activity,

and impulsivity (National Institute of Mental Health (NIMH), n.d.).

Typical early-onset symptoms include inattention, lack of concentration, disorganization, difficulty completing tasks, forgetfulness, and losing things (Magnus et al., 2022). The American Psychiatric Association's Diagnostic and Statistical Manual, Fifth Edition (DSM-5) is used to assist in the diagnosis of ADHD. This diagnostic standard ensures that individuals with ADHD are correctly diagnosed and treated (CDC, 2022). To receive a diagnosis of ADHD, a child's symptoms must: Be present for a minimum of six months and before age 12; (ADHD - Seattle Children's, n.d.) and interfere with daily life. This must be present in multiple contexts (i.e., at home and school, or school and after-school activities). It can have significant repercussions, including impaired social interactions, increased risky behaviours, job loss, and academic difficulties (Aliye et al, 2022).

The causes of ADHD are multifaceted (Moore et al., 2018). Both genetic and environmental risk factors can interact to cause the core symptoms. However, the severity of the manifestation of the core symptoms varies across the population. Some children who do not meet all of the diagnostic criteria for ADHD may still be severely impaired by their symptoms (Moore et al., 2018).

There are numerous treatment options, and the most effective one may depend on the child and his or her family. Several treatments, including medication and behaviour therapy, are effective for treating children with ADHD (NIMH, n.d.). Before resorting to medication, the American Academy of Pediatrics (AAP) recommends parent training in behaviour management for children with ADHD younger than six years of age. For children 6 years and older, the recommendations include both medication and behaviour therapy—parent training in behaviour management for children up to 12 years of age, and other forms of behaviour therapy and training for adolescents (CDC, 2020). Behavioural interventions for ADHD typically involve a variety of psychological

---

\*Corresponding Author: | Email: Hakami.mona@student.usm.my

Copyright©2022 The Author(s): This work is licensed under a Creative Commons Attribution-Non Commercial 4.0 (CC BY-NC 4.0) International License

treatments (e.g. parent-administered, teacher-administered, and combined parent- and teacher-administered behavioural interventions as well as direct work with affected children and adolescents). This paper systematically reviews randomized controlled trial evidence of the effectiveness of parental interventions for problems and issues in children with ADHD.

### Parental non-pharmacological interventions

ADHD is effectively treated with behaviour therapy, which can improve a child's behaviour, self-control, and self-esteem. Parents have the most influence on the behaviour of young children. Therefore, young children benefit most from therapy when it is administered by their parents. Young children with ADHD are not mature enough to change their own behaviour without their parents' assistance; therefore, therapy that focuses on parent training is highly recommended (Price et al., 2019).

### The research questions were:

What is the effectiveness of parental interventions for children with ADHD?

What are some of the parental interventions for problems and issues for children with ADHD?

Are some types of parental interventions for children with ADHD more effective?

What components of the interventions reviewed are effective for addressing problems and issues in children with ADHD?

### Systematic review methods

A systematic review and meta-analysis of relevant, peer-reviewed literature was conducted to compile empirical evidence regarding the efficacy of parent-administered behavioural interventions in reducing ADHD problems and issues. In this review, the parent-administered behavioural interventions were defined as those interventions aimed at the parents of children with ADHD considering the most common symptoms such as inattention, hyperactivity, and impulsivity. Research evaluating interventions were included designed to provide parents with strategies to manage their children's behaviour with the aim of reducing undesirable behaviours such as inattention, hyperactivity, and impulsivity.

### Search terms and inclusion criteria

To identify the literature on behavioural interventions for ADHD, initial search terms were developed. These were particularly programs that included parenting interventions. This was done in preparation for a larger systematic review of non-pharmacological interventions for ADHD, and all identified papers were categorized according to their applicability to this review based on the inclusion criteria as follows:

- Articles were required to be peer-reviewed and written in English.

- All participants were required to have a diagnosis of ADHD or to exhibit ADHD symptoms at a diagnosable level according to the established cutoffs of an existing ADHD scale (e.g., above the 90th percentile on the Inattention or Hyperactivity-Impulsivity factor of the ADHD Rating Scale-IV School Version) (Moore et al., 2018).

- Children ranged in age from 3 to 18 years.

- Studies were either randomised controlled trials (RCTs) or adequately controlled non-randomized trials.

- Only studies that allowed analysis of the unique effect of parent training on ADHD outcomes were included.

### Search Strategy

Possible studies were identified by searching electronic databases such as Medline, Psych INFO, PubMed, and CINAHL. Articles were identified using the keywords behavioural parent training, parent training, parent group, behaviour problems, attention deficit hyperactivity disorder, and ADHD. The obtained articles' citations were researched. The references of book chapters, significant reviews, and meta-analytic papers on parent training and children with ADHD or disruptive conduct were also examined.

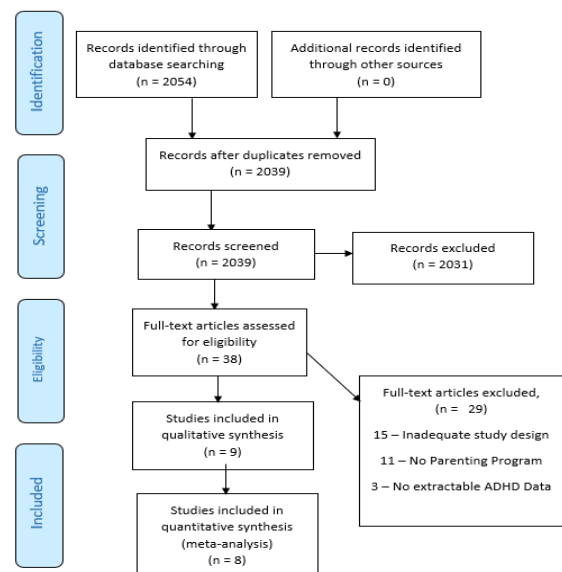


Figure Error! No text of specified style in document.: Prisma Flow Chart (Page et al., 2020).

### Study Selection

On the basis of the inclusion criteria mentioned above, pertinent studies were found in phases. Based on the titles, abstracts, summaries, and keywords, the initial screening of the chosen papers was done to determine which would be included in the screening for complete articles. Two reviewers separately screened the title and

abstract, and any discrepancies were settled by both reviewers. After choosing the pertinent materials, two reviewers separately looked over the whole articles. When there was a dispute, the papers were referred to a third reviewer to be settled. Study type, country, settings, methodology (population and sample size, sampling techniques, data collection, and data analysis), intervention, and outcome data extraction were all done. The technique for searching the database included the following three components: e(1) terms pertaining to ADHD; (2) terms pertaining to parenting; and (3) terms pertaining to therapies. The search algorithms used a combination of regulated vocabulary terms, known as subject headings, and free text terms. The PRISMA flow chart, which can be found in Figure 1, illustrates the total number of papers found as a result of the initial search as well as the procedure followed to find the papers that were ultimately selected for this review.

### Results

A total of 8 studies were used for this systematic review. Each study had its own study characteristics with different outcome measures. Even so what is important to point out is that each were assessing the parental interventions and associated efficacy in dealing with problems and issues in children diagnosed with ADHD. In all the studies, there was child ADHD symptom outcome which was assessed either using clinical interview, or a validated parental reported questionnaire.

### Summary of Articles

The table below summarize the finding of the articles.  
Table 1.1; Summary of Findings

Author	Title	Place of Publication	Main Findings
Smit, Mikami, & Normand, (2022)	Effects of the parental friendship coaching intervention on parental emotion socialization of children with ADHD	Research on Child and Adolescent Psychopathology	Parental friendship coaching (in comparison to Coping with ADHD through Relationships and Education (CARE)) resulted in parents offering more emotional strategies and praise at post-treatment and follow-up, as well as more warmth at follow-up, and children displaying less withdrawn or depressed behaviour.

Van Den Hoofdkker et al., (2007)	Effectiveness of behavioural parental parent training for children with ADHD in routine clinical practice: a randomized controlled study	Journal of the American Academy of Child & Adolescent Psychiatry	Adjunctive behavioural parent training (BPT) improved the efficacy of routine treatment for ADHD-affected children, especially in reducing behavioural and internalizing issues, but it had no effect on the symptoms of the disorder or the stress of parenting.
Chacko et al., (2009)	Enhancing traditional behavioural parent training for single mothers of children with ADHD.	Journal of Clinical Child & Adolescent Psychology	Participating in behavioural parent training in general and the Strategies to Enhance Positive Parenting (STEPP) program in particular had positive effects on child and parental functioning right after treatment. Additionally, the STEPP program led to higher treatment engagement. Results showed that treatment gains are not maintained and that behavioural parent training does not normalize behaviour for the majority of children.
Jones et al., (2007)	Efficacy of the Incredible Years Basic parent training program as an early intervention for children with conduct problems and ADHD	Child: care, health and development	After the intervention, there were significantly fewer instances of inattention and hyperactive/impulsive issues reported by parents in the intervention group.
Fabiano, et al., (2012)	A waitlist-controlled trial of behavioural parent training for fathers of children with ADHD	Journal of Clinical Child & Adolescent Psychology	In parent-child observations, fathers in the COACHES group showed lower rates of critical talk and higher rates of praise. Father ratings of the severity of problem behaviours were also lower compared to the waitlist condition. This study offers preliminary proof of the COACHES parenting program's effectiveness for fathers of children with ADHD.

Webster-Stratton et al, (2011)	Combining parent and child training for young children with ADHD	Journal of Clinical Child & Adolescent Psychology	Independent observations showed that mothers' coaching and praising, mothers' critical remarks, and children's overall deviant behaviours all improved after treatment. The treatment's effects on children's emotional vocabulary and problem-solving skills, as well as on externalizing, hyperactivity, inattentive and oppositional behaviours, emotion regulation, and social competence, were all reported.
Webster-Stratton et al, (2013)	Combining parent and child training for young children with ADHD.	Journal of Clinical Child & Adolescent Psychology	Treatment effects on children's externalizing, hyperactivity, inattentive, oppositional, emotion regulation, social competence, emotion vocabulary, and problem-solving ability.
Matos et al, (2009)	Parent-child interaction therapy for Puerto Rican preschool children with ADHD and behaviour problems: A pilot efficacy study.	Family process Journal	Reported a significant reduction in pretreatment hyperactivity, inattention, aggressive and oppositional-defiant behaviours, conduct problems, parenting stress, and an increase in the use of adequate parenting practices.

opposed to medication only for children with ADHD which contributes to further evidence to support recommended clinical guidelines (American Academy of Pediatrics, (2011); National Institute for Health and Clinical Excellence (NICE), 2008).

It is worth pointing out that this review considered international evidence such that the studies used were developed from different countries from all over the world. This contributes to making the findings reputable. In addition, the interventions that were used were relatively short-term in terms of duration. Most of them were a couple of weeks indicating that parent administered behavioural interventions are largely cost-effective treatment options. This boosts their potential for the ability to be considered as feasible treatment options for most children dealing with ADHD.

The intervention options also do not only benefit children but also their parents as some studies indicated improvement in parental self-esteem. Even so, there is need for more studies to be done to seek evidence for the improvement of parental well-being and potential reduction of parental stress. In as much as parental administered interventions have the potential in improving the well-being of children it is also important to seek to find out if there is similar improvement on parental well-being and levels of parental stress.

### Strengths and Limitations

This review was comprehensive in terms of date and publication status and adhered to recommended practices for systematic reviews (Centre for Reviews and Dissemination, 2009) in order to take into account as much pertinent, comparable evidence as feasible. All study participants had to meet the review's very stringent inclusion criteria, which included an RCT design and either an ADHD diagnosis or baseline symptoms that might be used to make a diagnosis.

This review's scope is constrained by a number of issues. In order to analyze the fundamental mechanisms of change, it was first not able to investigate various mediators. Also, there was a lack of information about the effects of ADHD symptoms on other aspects of a child's functioning and the ways in which therapies can influence these aspects, such as a child's social skills, academic achievement, and readiness for school.

In addition, it was not possible to evaluate the potential influence of outcome modifiers, such as the severity of the ADHD or the mental health issues of the parents, including parental ADHD symptoms, which may also have an effect on the success of the therapy. It is also essential to keep in mind that, despite not being evaluated in this analysis, the mode of delivery (for example, group versus individual intervention) and implementation integrity of each intervention in the various studies may potentially contribute to varying outcomes. This is something that needs to be taken into consideration.

It is also highly likely that the fundamental tenets that underpin any given program will have some bearing on

### Discussion

This systematic literature review found that parent-administered behavioural interventions improved significant symptom-related outcomes for children with or at risk for ADHD. Specifically, it demonstrated that parent-administered behaviour interventions led to a moderate reduction in ADHD symptoms and conduct issues. This analysis focuses on parent-administered behavioural interventions, and provides substantial support for parenting interventions for children with ADHD.

Considering that parents have a particular influence on the growth and development of their children, it goes to show why parent-administered behavioural interventions are effective for the age group considered in this systematic review and most of the studies used herein. In as much as some studies show some improvement when medication is used, the findings from this systematic review support the growing evidence that point to the use of parent-administered behavioural interventions as

how successful it is. The many studies that were considered in this analysis made use of a wide array of therapies and were aimed at a variety of different outcomes. Other issues are stress in parenting, ineffective parenting, and the general health of the parent. According to the findings, problematic parenting behaviours, stress levels, and overall parental well-being did not improve over time. Similar increases would have presumably been reported for these variables as well if there had been rating bias, which demonstrates that parent evaluations are accurate indicators of how effectively behavioural therapies that parents employ are working to improve children's conduct.

#### Implications for Future Research

On the long-term efficacy of therapies, there was very little information. As a result, it was challenging to conduct a meta-analysis of long-term results in this review. Future studies should include more follow-up evaluations in order to assess the long-term effects of the treatments. These assessments should be recorded for both the intervention and control groups. Making this information easily accessible would enable more thorough evaluations of the longer-term efficacy of behavioural therapies delivered by parents. Future study should take note of this as the underlying ADHD may possibly continue despite the short-term advantages of behavioural therapies and call for additional treatment.

The cost-effectiveness analyses were not included in any of the research. Therefore, it is only possible to evaluate the potential economic advantages of parent administered interventions using modelling assumptions. Future RCTs of parent administered interventions should consider evaluating the program's efficacy and cost-effectiveness. This would be important for evaluating the efficacy of parent-administered therapies for children with ADHD and should be taken into account.

Finally, while taking into account the accessibility to and availability of parental treatments in their own clinical practice, it is logical that physicians would need more rapid choices. Given this, physicians may want to advise self-directed parenting therapies to parents of children with ADHD while they wait for the local availability of behavioural therapy.

#### Conclusion

This systematic review, which used many data synthesis techniques, offers a thorough analysis of RCTs evaluating the efficacy of parental interventions for difficulties and challenges in ADHD-affected children. Meta-analysis shows that multi-component therapies can have some positive impacts. This data implies that parenting treatments can be successful and complement clinical practice recommendations. Therefore, the accessibility of parenting interventions should be ensured to properly deal with problems and issues in children with ADHD.

the empirical findings, results and discussions. Lastly, section 5 presents the conclusions and recommendations.

#### REFERENCES:

1. Aliye, K., Tesfaye, E., & Soboka, M. (2022). High Rate of Attention Deficit Hyperactivity Disorder Among Children 6 To 17 Years Old in Southwest Ethiopia. Findings from A Community-Based Study.
2. American Academy of Pediatrics. (2011). ADHD: Clinical practice guideline for the diagnosis, evaluation, and treatment of Attention-Deficit/Hyperactivity Disorder in children and adolescents. *Pediatrics*, 128:1007–22.
3. Attention Deficit Hyperactivity Disorder (ADHD) - Seattle Children's. (n.d.). Retrieved August 2, 2022, from <https://www.seattlechildrens.org/conditions/adhd/>
4. CDC. (2020). Centers for Disease Control and Prevention. [www.cdc.gov. https://www.cdc.gov/ncbddd/adhd/treatment.html](https://www.cdc.gov/ncbddd/adhd/treatment.html)
5. CDC. (2022). Centers for Disease Control and Prevention. [www.cdc.gov. https://www.cdc.gov/ncbddd/adhd/diagnosis.html](https://www.cdc.gov/ncbddd/adhd/diagnosis.html)
6. Centre for Reviews and Dissemination, (2009). Systematic reviews: CRDs guidance for undertaking reviews in health care, 3rd edn (York, University of York).
7. Chacko, A., Wymbs, B. T., Wymbs, F. A., Pelham, W. E., Swanger-Gagne, M. S., Girio, E., ... & O'Connor, B. (2009). Enhancing traditional behavioural parent training for single mothers of children with ADHD. *Journal of Clinical Child & Adolescent Psychology*, 38(2), 206-218.
8. Fabiano, G. A., Pelham, W. E., Cunningham, C. E., Yu, J., Gangloff, B., Buck, M., ... & Gera, S. (2012). A waitlist-controlled trial of behavioural parent training for fathers of children with ADHD. *Journal of Clinical Child & Adolescent Psychology*, 41(3), 337-345.
9. Ghanizadeh A. (2011). Sensory processing problems in children with ADHD, a systematic review. *Psychiatry investigation*, 8(2), 89–94. <https://doi.org/10.4306/pi.2011.8.2.89>
10. Jones, K., Daley, D., Hutchings, J., Bywater, T., & Eames, C. (2007). Efficacy of the Incredible Years Basic parent training programme as an early intervention for children with conduct problems and ADHD. *Child: care, health and development*, 33(6), 749-756.
11. Magnus, W., Nazir, S., Anilkumar, A. C., & Shaban, K. (2022, May 8). Attention Deficit Hyperactivity Disorder - StatPearls - NCBI

- Bookshelf. [www.ncbi.nlm.nih.gov/https://www.ncbi.nlm.nih.gov/books/NBK441838/](http://www.ncbi.nlm.nih.gov/https://www.ncbi.nlm.nih.gov/books/NBK441838/)
12. Matos, M., Bauermeister, J. J., & Bernal, G. (2009). Parent-child interaction therapy for Puerto Rican preschool children with ADHD and behaviour problems: A pilot efficacy study. *Family process, 48*(2), 232-252.
  13. Moore, D., Russell, A., Matthews, J., Ford, T., Rogers, M., & Ukoumunne, O. et al. (2018). School-based interventions for attention-deficit/hyperactivity disorder: A systematic review with multiple synthesis methods. *Review of Education, 6*(3), 209-263. <https://doi.org/10.1002/rev3.3149>
  14. National Institute for Health and Clinical Excellence (NICE). (2008). Attention Deficit Hyperactivity Disorder: diagnosis and management of ADHD in children, young people, and adults (Clinical Guideline 72), London, UK: NICE.
  15. National Institute of Mental Health (NIMH). (n.d.). [www.nimh.nih.gov](http://www.nimh.nih.gov). Retrieved August 2, 2022, from <https://www.nimh.nih.gov/health/topics/attention-deficit-hyperactivity-disorder-adhd>
  16. Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., . . . Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Systematic Reviews, 10*(1). <https://doi.org/10.1186/s13643-021-01626-4>
  17. Poznanski, B., Hart, K. C., & Graziano, P. A. (2021). What do preschool teachers know about attention-deficit/hyperactivity disorder (ADHD) and does it impact ratings of child impairment? *School Mental Health, 13*(1), 114-128.
  18. Price, A., Newlove-Delgado, T., Eke, H., Paul, M., Young, S., Ford, T., & Janssens, A. (2019, December 17). PubMed Central (PMC). [www.ncbi.nlm.nih.gov/https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6918680/](http://www.ncbi.nlm.nih.gov/https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6918680/)
  19. Smit, S., Mikami, A. Y., & Normand, S. (2022). Effects of the parental friendship coaching intervention on parental emotion socialization of children with ADHD. *Research on Child and Adolescent Psychopathology, 50*(1), 101-115.
  20. Van Den Hoofdakker, B. J., Van der Veen-Mulders, L., Sytema, S., Emmelkamp, P. M., Minderaa, R. B., & Nauta, M. H. (2007). Effectiveness of behavioural parent training for children with ADHD in routine clinical practice: a randomized controlled study. *Journal of the American Academy of Child & Adolescent Psychiatry, 46*(10), 1263-1271.
  21. Webster-Stratton, C. H., Reid, M. J., & Beauchaine, T. (2011). Combining parent and child training for young children with ADHD. *Journal of Clinical Child & Adolescent Psychology, 40*(2), 191-203.
  22. Webster-Stratton, C., Reid, M. J., & Beauchaine, T. P. (2013). One-year follow-up of combined parent and child intervention for young children with ADHD. *Journal of Clinical Child & Adolescent Psychology, 42*(2), 251-261.
  23. Zachor, D., Hodgins, B., & Patterson, C. (2009). Treatment of Attention-Deficit/Hyperactivity Disorder (ADHD). *Treating Childhood Psychopathology and Developmental Disabilities, 139-181*. [https://doi.org/10.1007/978-0-387-09530-1\\_6](https://doi.org/10.1007/978-0-387-09530-1_6)