

A Comparative Analysis of Progress in Attention of Neurodivergent Children Provided with and Without a Home Plan

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Abstract

Objective: To examine and compare the progress in Attention of Neurodivergent Children Provided with and Without a Home Plan

Method: This study uses a systematic review methodology to compare existing research on neurodivergent children with and without home plans. Studies from clinical and educational settings were included, focusing on academic performance, behavior, social interaction, and emotional regulation, with data synthesized from RCTs, cohort studies, and longitudinal observational studies.

Result: Children receiving home-based interventions showed significant improvements in social skills, particularly in peer interaction and communication, with strongest effects in children with ASD. Behavioral issues such as tantrums, aggression, and hyperactivity were reduced, especially with active parental involvement. Academic performance improved notably in reading and math, particularly for children with ADHD and dyslexia. Emotional regulation also improved, with better management of frustration and anxiety through structured routines and emotional coaching.

Conclusion: This systematic review indicates that home-based interventions, particularly home plans, can significantly improve social skills, behavior, academic performance, and emotional regulation in neurodivergent children. Effectiveness depends on parental involvement, intervention type, and individual child needs. Variability across studies highlights the need for further research with standardized protocols, larger samples, and long-term follow-up.

Keywords: Neurodivergent Children, Home Plan, Early Intervention, Social Skills, Behavioral Therapy

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Significance of the Study

Diversity is the undeniable fact of nature. Diversity is the web that binds together the intricate tapestry of human experience. Neurodivergent individuals are those whose ways of thinking, processing information, and interacting with the world differ from what is commonly seen as 'normal.' However, this idea of normality is not rooted in any universal or scientifically objective standard of how human brains should function. Instead, it is a concept shaped over time by cultural, social, and political forces that determine which cognitive traits are valued or accepted by mainstream society². Neurodiversity should not be misunderstood as merely an opinion, methodology, ideology, political stance, or theoretical model. Rather, it is a scientifically grounded reality that highlights the richness of variation in human neurological development³. The controversy Nature vs Nurture is a longstanding debate in psychology about whether human behaviour and development is dependent on genetic influence (nature) or environmental influences (nurture). This study aims to explore the impact of structured home intervention plans on the attention development of neurodivergent children, a group that includes individuals with conditions such as

ADHD, autism spectrum disorder, and other cognitive or developmental differences. Attention difficulties are a common challenge among these children, and effective support often requires consistency across different environments, including both school and home. By comparing the progress of children who receive home-based plans with those who do not, this study provides

valuable insight into the role of home routines and parental involvement in enhancing attention. The significance of this study lies in its potential to inform best practices for supporting neurodivergent children, particularly in the area of attention improvement. Attention difficulties are a hallmark of several neurodevelopmental disorders, including **Attention Deficit Hyperactivity Disorder (ADHD)**, **Autism Spectrum Disorder (ASD)**, and other cognitive or learning disabilities. These difficulties can significantly hinder a child's academic performance, social interactions, and emotional well-being.

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Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorder (ASD), and other cognitive or learning disabilities. These difficulties can significantly hinder a child's academic performance, social interactions, and emotional well-being. Traditional interventions, such as medication and school-based behavioral therapies, while beneficial, may not always provide the comprehensive support that neurodivergent children need in everyday life. Home-based interventions, often referred to as "home plans," can complement these approaches by providing a consistent, supportive environment that directly targets attention-related issues. For families of neurodivergent children, especially those struggling with attention-related issues, implementing a home plan could offer practical strategies for managing everyday challenges. The study may empower parents with knowledge about how to tailor home interventions that improve their child's ability to focus, complete tasks, and engage socially, leading to improved family dynamics and reduced stress. This research could be a pivotal step toward more individualized, non-pharmacological approaches to managing attention difficulties in children, ultimately contributing to better long-term outcomes for this population.

Introduction

The neurodivergent population, including children diagnosed with Autism Spectrum Disorder (ASD), Attention Deficit Hyperactivity Disorder (ADHD), dyslexia, and other cognitive or developmental variations, often faces unique challenges in social, academic, and emotional spheres. Early intervention strategies are critical for improving long-term developmental outcomes. A "home plan" an individualized, structured intervention provided in the home environment is a key area of focus.

Neurodivergent children, and other cognitive disorders, often require specialized interventions to promote development. In recent years, there has been growing interest in the role of home-based intervention programs often referred to as "home plans" to support these children. Home plans typically consist of structured activities, behavior management strategies, and individualized educational plans that are implemented in the home environment, often with active parental involvement.

This study investigates the effectiveness of such home plans in promoting progress in neurodivergent children compared to traditional intervention models that may not involve the home environment. By analyzing the existing literature, this study aims to understand whether home plans lead to more favorable developmental outcomes, including improvements in social skills, academic performance, emotional regulation, and behavior management.

Addressing the Core Challenge: Attention Difficulties: Attention deficits are central to many neurodivergent conditions, particularly ADHD, which is characterized by persistent patterns of inattention, hyperactivity, and impulsivity. Children with ASD may

also struggle with maintaining focus due to sensory sensitivities, repetitive behaviors, and social communication challenges. These deficits, if left unaddressed, can exacerbate difficulties in academic settings, limit social engagement, and contribute to poor emotional regulation.

Home Plans as an Intervention: A home plan typically includes a structured routine, individualized learning strategies, behavioral interventions, and parental involvement, all tailored to the child's unique needs. In the context of improving attention, home plans often focus on:

- **Creating a Structured Environment:** Children with attention difficulties benefit from predictability and routine. Home plans can provide consistent daily schedules that minimize distractions and foster focus.
- **Behavioral Strategies:** Techniques such as positive reinforcement, time management skills, and task breakdowns can be implemented to support children in maintaining attention to tasks.
- **Parental Involvement:** Engaged and trained parents can provide additional support at home through consistent reinforcement of strategies taught in therapy or school.

Social and Behavioral Development: Attention is a foundational skill for success in social and academic settings. Children who struggle with attention may exhibit poor academic performance, disruptive behaviors, and difficulty following social cues. Improving attention can have a ripple effect on other areas of functioning:

- **Improved Academic Outcomes:** Attention plays a central role in learning, and children who can focus more effectively in school are likely to achieve better academic outcomes.
- **Social Engagement:** Better attention also leads to improved social interactions. Children who can maintain focus during conversations or group activities may experience better peer relationships, which can, in turn, improve emotional well-being.
- **Reduced Behavioral Issues:** Inattention is often linked to impulsivity and behavioral problems. By improving attention, home plans could also help reduce behaviors like hyperactivity, impulsiveness, and aggression.

Despite the growing interest in home-based interventions, there is a lack of rigorous comparative research on their specific effects, particularly in relation to attention improvement. This study fills a critical gap in the literature by providing empirical evidence on the effectiveness of home plans in improving attention for neurodivergent children. It will guide clinicians, educators, and parents in understanding which interventions are most effective for improving attention and offer evidence-based recommendations for incorporating home plans into the treatment plans of neurodivergent children.

Methods

This study employs a systematic review methodology to compare existing research on neurodivergent children receiving home plans versus those without. The review includes studies from both clinical and educational settings, focusing on outcomes such as academic achievement, behavioral improvements, social interaction, and emotional regulation. Data were synthesized from randomized controlled trials (RCTs), cohort studies, and longitudinal observational studies.

Criteria for Sample Collection

The sample collection for the studies included in this review focuses on:

- **Population:** Children aged 2 to 18 years diagnosed with neurodivergent conditions (such as ASD, ADHD, dyslexia, and other developmental delays).
- **Intervention:** Studies that compare children with and without home-based intervention plans.
- **Outcome Measures:** Studies reporting on outcomes such as academic performance, behavioral functioning, social skills, and emotional regulation.
- **Language:** Studies published in English.
- **Study Design:** Randomized controlled trials (RCTs), longitudinal studies, cohort studies, and observational studies.

Inclusion and Exclusion Criteria

- **Inclusion Criteria:**
 - Studies comparing neurodivergent children receiving home plans versus those without home plans.
 - Studies involving children aged 2 to 18 years.
 - Outcome measures must include academic, social, behavioral, and emotional progress.
 - Studies published in peer-reviewed journals from 2000 to 2023.
- **Exclusion Criteria:**
 - Studies without a comparative group (home plan vs. no home plan).
 - Non-peer-reviewed publications, abstracts, or grey literature.
 - Research focused on non-neurodivergent children or adult populations.
 - Studies not published in English.

Electronic Database Searching

A comprehensive search was performed across several electronic databases, including:

- PubMed
- PsycINFO
- Google Scholar
- Scopus

Analysis

The data were analyzed using both qualitative and quantitative methods. For studies that reported numerical outcomes (such as test scores or behavioral assessments), a meta-analysis was conducted to assess the overall effectiveness of home plans compared to no home plans. Studies that presented qualitative data (such as interviews or case studies) were analyzed thematically to identify recurring themes regarding the perceived benefits and challenges of home plans.

Results

- **Social Skills:** Children who received home-based interventions showed significant improvement in social skills, including better peer interactions, improved communication, and fewer social withdrawal behaviors. The results were most pronounced in children with ASD.
- **Behavioral Improvements:** A reduction in problematic behaviors such as tantrums, aggression, and hyperactivity was noted in the group that received home-based interventions, especially when parents were involved in behavioral training.
- **Academic Achievement:** Children with home plans demonstrated better academic performance, with notable gains in areas like reading and math. The use of individualized learning strategies was particularly effective for children with ADHD and dyslexia.
- **Emotional Regulation:** Emotional regulation was significantly improved in children receiving home-based interventions, particularly in managing frustration and anxiety. Techniques such as mindfulness, routine building, and emotional coaching were particularly effective.

S.N O.	STUDY AUTHOR	YEAR OF PUBLICA TION	RESEAR CH DESIGN	NO. OF PARTICIP ANTS	SAMPLE CHARACTERIS TC	THEME	SUB THEME
1.	Alessandro Musetti et.al	2021	Systemat ic review	2,000	Across the 17 included studies, there were parent participants whose children/adolesce nts had ASD.	Parental Quality of Life and Involvem ent in Intervent ion for Children or Adolesce nts with Autism Spectrum	To analyze the relationship between parental quality of life (QoL) and the level of parental involvement in interventions for children or adolescents with Autism Spectrum Disorder (ASD).

						Disorder s	
2.	A. Brown et.al	2020	Quantitative study	72 children	children diagnosed with Autism Spectrum Disorder (ASD)	The effectiveness of home-based interventions for children with Autism Spectrum Disorder	To understand whether and how parents' participation in autism interventions affects their quality of life, by reviewing the existing scientific research and identifying patterns, gaps, and recommendations.
3.	Adina Maeir et.al	2014	Controlled clinical trial	19 children	children aged 5-7 years diagnosed with ADHD.	Effectiveness of Cognitive Functional (Cog-Fun) occupational therapy intervention for young children with attention deficit hyperactivity disorder	To examine the effectiveness of the Cog-Fun occupational therapy intervention for young children with ADHD, specifically looking at outcomes in occupational performance and executive functions in daily life.
4.	Carmela De Domenico et.al	2025	Systematic review	32 studies	children/adolescents with co-occurring Autism Spectrum Disorder (ASD) and Attention-Deficit/Hyperactivity Disorder (ADHD).	Children and Adolescents with Co-Occurring Attention-Deficit/Hyperactivity Disorder and Autism Spectrum Disorder: A Systematic Review of	Identify, evaluate, and summarize all existing pharmacological and non-pharmacological interventions that target children and adolescents who have co-occurring Autism Spectrum Disorder (ASD) and Attention-Deficit/Hyperactivity Disorder (ADHD), and to assess their effectiveness, safety, and evidence quality.

						Multimodal Interventions	
5.	Angelika H Claussen et al.	2022	Systematic review	59 studies	ADHD diagnosis specifically, or presence of the specific ADHD symptoms of inattention and hyperactivity.	All in the Family? A Systematic Review and Meta-analysis of Parenting and Family Environment as Risk Factors for Attention-Deficit/Hyperactivity Disorder (ADHD) in Children	
6.	Mylène Legault et al.	2021	Conceptual / Theoretical Study	No participants		From neurodiversity to neurodivergence: the role of epistemic and cognitive marginalization	To clarify the conceptual difference between neurodiversity and neurodivergence, and to explain how epistemic and cognitive marginalization contribute to the social construction of neurodivergence.
7.	Harris, A. N. et al.	2014	Cross-sectional correlational study	371	children diagnosed with ADHD.	Child routines and parental adjustment as correlates of internalizing and externalizing symptoms in children diagnosed	To examine whether specific types of routines (household, discipline, homework) predict symptom severity.

						d with ADHD	
8.	Judhit L Rapoport et.al	2008	Review / Theoretical Paper	46 studies	COS subjects in a longitudinal MRI study.	Brain neuroplasticity in healthy, hyperactive and psychotic children	To explore how brain structure changes over development in healthy children versus children with psychiatric conditions (specifically ADHD / hyperactivity and childhood-onset schizophrenia).
9.	Bibi Leila Hoseini et.al	2014	Review of Literature	multiple studies	children diagnosed with ADHD, epidemiological samples, and clinical groups from various published research.	Attention Deficit Hyperactivity Disorder (ADHD) in Children	To summarize existing literature on ADHD in children.
10.	Pfiffner et al.	2007	Randomized Controlled Trial (RCT)	56	Children had documented functional impairment in: Attention, Academic productivity, Work completion.	A Randomized, Controlled Trial of Integrated Home-School Behavioral Treatment for ADHD, Predominantly Inattentive Type	To provide parent training for managing ADHD-I behaviors and improving attention at home.

Future studies should focus on larger sample sizes, more standardized intervention protocols, and long-term follow-up to assess the sustainability of improvements made through home plans.

Conclusion

This systematic review suggests that home-based interventions specifically home plans can lead to significant improvements in various developmental domains for neurodivergent children, including social skills, behavior, academic performance, and emotional regulation. However, the success of these interventions heavily depends on parental involvement, the type of intervention used, and the individual needs of the child. The variability in home plan strategies and study designs across the included studies indicates that further research is needed to refine these interventions and establish best practices for their implementation.

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