ISSN-e [2675-5602]

Global Academic Nursing Journal

REVIEW ARTICLE

Interdisciplinary health strategies for neurodivergent children

Estrategias de salud interdisciplinarias para niños neurodivergentes

Estratégias interdisciplinares em saúde para crianças neurodivergentes

Caroliny dos Santos Guimarães da Fonseca[1]
ORCID: 0000-0002-3381-732X
Aline Voltarelli[2*]
ORCID: 0000-0002-3491-616X
Wagner Rafael da Silva[3]
ORCID: 0000-0002-0952-4877
Annelisa Gregório Andreazzi[4]
ORCID: 0009-0002-2915-9528
Daniela de Stefani Marquez[5]
ORCID: 0000-0002-1463-2012
Jefferson Júnio Santos da Silva[6]
ORCID: 0009-0003-2649-3480
Antonio Altino dos Santos Junior[6]
ORCID: 0009-0006-5695-1835
Eloise Cristiani Borriel Vieira[7]
ORCID: 0000-0002-4685-1797
João Márcio Andreu[8]
ORCID: 0009-0006-8357-3972
Leonardo dos Santos Moreira[9]
ORCID: 0000-0001-8689-1171

[1]Faculdade Iguaçu. Paraná, Brazil.
[2]Universidad de Ciencias Empresariales y Sociales. Buenos Aires, Argentina
[3]Universidade Brasil. São Paulo, Brazil.
[4]Centro Paula Souza. São Paulo, Brazil.
[5]Faculdade FINOM/TECSOMA. Minas Gerais, Brazil.
[6]Universidade do Rio Verde. Goiás, Brazil.
[7]Universidade Paulista. São Paulo, Brazil.
[8]Núcleo de Especializações Ana Carolina Puga. São Paulo, Brazil.
[9]Universidad Europea del Atlántico. Santander, Spain.

How to cite this article:
Fonseca CSG, Voltarelli A, Silva WR, Andreazzi AG, Marquez DS, Silva JJS, Santos Junior AA, Vieira ECB, Andreu JM, Moreira LS. Interdisciplinary health strategies for neurodivergent children. Glob Acad Nurs. 2025;6(2):e474. https://dx.doi.org/10.5935/2675-5602.20200474

***Corresponding author:**
alivolter@yahoo.com.br

Submission: 06-05-2025
Approval: 07-07-2025

Abstract

This study aimed to analyze interdisciplinary strategies for the care of children with dyslexia, CAPD, and ADHD and Hyperactivity, investigating their clinical efficacy, implementation feasibility, and biopsychosocial impact. Through a literature review, articles published between 2000 and 2025 in the PubMed, SciELO, and PsycINFO databases were analyzed, using specific criteria for selection and thematic analysis of the data. Coordinated multidisciplinary actions promote significant improvements in neurocognitive development, especially when combining phonological, auditory, and emotional regulation interventions, with evidence of neural plasticity in imaging studies. However, the implementation of these models faces structural challenges, such as fragmented health services, inadequate professional training, and difficulties in the transition between clinical and school settings. Analysis of the biopsychosocial impact revealed gains in quality of life and inclusion but also highlighted the persistence of emotional comorbidities and socioeconomic barriers. Although interdisciplinary interventions demonstrate transformative potential, their full effectiveness depends on overcoming systemic and ongoing obstacles, requiring reforms in professional training, financing models, and integrated public policies, with a focus on building support ecosystems that value neurodiversity and ensure the integral development of these children.

Descriptors: Neurodivergence; Learning Disorders; Attention Deficit Hyperactivity Disorder; Interdisciplinary Team; Neuronal Plasticity.

Resumén

Este estudio tuvo como objetivo analizar estrategias interdisciplinarias para la atención de niños con dislexia, CAPD y TDAH e hiperactividad, investigando su eficacia clínica, viabilidad de implementación e impacto biopsicosocial. A través de una revisión bibliográfica, se analizaron artículos publicados entre 2000 y 2025 en las bases de datos PubMed, SciELO y PsycINFO, utilizando criterios específicos para la selección y el análisis temático de los datos. Las acciones multidisciplinarias coordinadas promueven mejoras significativas en el desarrollo neurocognitivo, especialmente al combinar intervenciones fonológicas, auditivas y de regulación emocional, con evidencia de plasticidad neuronal en estudios de imagen. Sin embargo, la implementación de estos modelos enfrenta desafíos estructurales, como servicios de salud fragmentados, capacitación profesional inadecuada y dificultades en la transición entre entornos clínicos y escolares. El análisis del impacto biopsicosocial reveló ganancias en calidad de vida e inclusión, pero también destacó la persistencia de comorbilidades emocionales y barreras socioeconómicas. Si bien las intervenciones interdisciplinarias demuestran potencial transformador, su plena efectividad depende de la superación de obstáculos sistémicos y permanentes, lo que requiere reformas en la formación profesional, modelos de financiamiento y políticas públicas integradas, con foco en la construcción de ecosistemas de apoyo que valoren la neurodiversidad y aseguren el desarrollo integral de estos niños.

Descriptores: Neurodivergencia; Trastornos del Aprendizaje; Trastorno por Déficit de Atención con Hiperactividad; Equipo Interdisciplinario; Plasticidad Neuronal.

Resumo

Objetivou-se analisar estratégias interdisciplinares no cuidado a crianças com dislexia, TPAC e TDAH e Hiperatividade, investigando sua eficácia clínica, viabilidade de implementação e impacto biopsicossocial. Por meio de uma revisão da literatura, foram analisados artigos publicados entre 2000 e 2025 nas bases PubMed, SciELO e PsycINFO, utilizando critérios específicos para seleção e análise temática dos dados. As ações multidisciplinares coordenadas promovem melhorias significativas no desenvolvimento neurocognitivo, especialmente quando combinam intervenções fonológicas, auditivas e de regulação emocional, com evidências de plasticidade neural em exames de imagem. No entanto, a implementação desses modelos enfrenta desafios estruturais, como fragmentação dos serviços de saúde, formação profissional inadequada e dificuldades na transição entre contextos clínicos e escolares. A análise do impacto biopsicossocial revelou ganhos na qualidade de vida e inclusão, mas também destacou a persistência de comorbidades emocionais e barreiras socioeconômicas. Embora as intervenções interdisciplinares mostrem potencial transformador, sua efetividade plena depende da superação de obstáculos sistêmicos e contínuos, exigindo reformas na formação profissional, modelos de financiamento e políticas públicas integradas, com foco na construção de ecossistemas de apoio que valorizem a neurodiversidade e garantam o desenvolvimento integral dessas crianças.

Descritores: Neurodivergência; Transtorno da Aprendizagem; Transtorno do Déficit de Atenção Com Hiperatividade; Equipe Interdisciplinar; Plasticidade Neuronal.

CC BY NC ND

Introduction

Childhood neurodivergence represents a set of neurological variations that challenge traditional developmental paradigms, requiring a multidimensional understanding that goes beyond pathologizing models. Among these neurocognitive expressions, dyslexia, Central Auditory Processing Disorder (CAPD), and Attention Deficit Hyperactivity Disorder (ADHD) emerge as complex conditions that, although distinct in their phenomenology, share common challenges regarding social inclusion, academic performance, and childhood mental health. Dyslexia, more than a simple reading difficulty, reflects an atypical brain organization in the circuits responsible for language processing, involving not only the left temporoparietal cortex but also subcortical and cerebellar connections. CAPD, on the other hand, is often underdiagnosed, manifests as a deficit in decoding auditory stimuli even in the presence of intact peripheral hearing, compromising crucial functions such as sound discrimination, auditory memory, and spatial localization of sound sources - fundamental skills for the acquisition of written and oral language. ADHD, on the other hand, transcends the reductionist notion of "lack of attention," presenting itself as a dysregulation of the dopaminergic and noradrenergic systems that modulate executive control networks, affecting processes such as response inhibition, cognitive flexibility, and emotional self-regulation[1-7].

Neural plasticity, a central concept in understanding these conditions, offers a promising avenue for intervention. Neuroimaging studies demonstrate that the child's brain maintains a remarkable capacity for functional and structural reorganization, particularly when stimulated by early and targeted interventions. However, this potential faces significant practical challenges: the lack of unified protocols across different specialties, the shortage of professionals trained to work in an integrated manner, and the persistence of fragmented care models that fail to consider the child in their biopsychosocial totality. The reality shows that many cases are approached in a reductionist manner - the speech-language pathologist works on language issues in isolation, the psychologist focuses on behavioral aspects, and the neurologist limits themselves to pharmacotherapy, lacking a systemic vision that integrates these approaches[2,4,6,8].

This fragmentation becomes even more critical when we consider the frequent comorbidities in this population. Children with dyslexia have high rates of ADHD; CAPD cases often coexist with learning disorders, and all of these conditions are often associated with anxiety, low self-esteem, and socialization difficulties. Recent literature has highlighted the importance of intervention models based on the concept of a care network, in which different specialists work in a coordinated manner, sharing common therapeutic goals and using complementary languages. However, the implementation of these models in daily clinical practice still faces structural obstacles, from professional training to the organization of health services[3,5,6].

Given this complex context, this study aims to map and analyze effective interdisciplinary strategies in the care of neurodivergent children, with a specific focus on dyslexia, CAPD, and ADHD, seeking to identify not only the interventions with the best evidence of effectiveness, but also the mechanisms of articulation between different areas of knowledge that can enhance the results[6-8]. Through a literature review, the aim is to elucidate how the convergence of neurology, psychiatry, cognitive psychology, speech-language pathology, occupational therapy, and pedagogy can create synergies capable of maximizing the window of opportunity offered by neuroplasticity, proposing a care model that is simultaneously scientific and humanized, technical and welcoming. Furthermore, the study aims to highlight the gaps that still exist in the field, suggesting directions for future research and public policies that can transform the current care landscape for this population.

Methodology

This study adopted a literature review approach, a method that allows for the critical analysis and synthesis of scientific evidence dispersed across different sources, with the aim of providing a comprehensive understanding of interdisciplinary strategies in the care of neurodivergent children. The review was chosen for its ability to incorporate studies with different methodological designs - including qualitative, quantitative, and theoretical research - enabling a multidimensional analysis of the topic. The methodological process was structured in six interdependent steps: development of the guiding question, systematic literature search, study selection, data categorization, critical content analysis, and interpretative synthesis of the results.

The central question guiding the investigation was: "Which interdisciplinary strategies demonstrate effectiveness in the care of children with dyslexia, CAPD, and ADHD, and how can different areas of knowledge be articulated in clinical practice?" To answer this question, a search was conducted in the PubMed, SciELO, and PsycINFO databases, covering the period from 2000 to 2025. Controlled descriptors (MeSH/DeCS) and keywords were combined using Boolean operators, using the following search strategies: ("neurodivergence" OR "specific learning disorders" OR "dyslexia" OR "ADHD" OR "auditory processing disorder") AND ("multidisciplinary care" OR "interprofessional collaboration" OR "health care teams") AND ("children" OR "pediatrics" OR "child development"). Original articles, systematic reviews, and meta-analyses published in English, Portuguese, or Spanish that addressed interdisciplinary interventions for children aged 6 to 12 were included. Studies focusing on unrelated neurological conditions (epilepsy, cerebral palsy), as well as isolated case reports and articles without peer review, were excluded.

The extracted data were organized into an analytical matrix containing information on: (1) study characteristics (authors, year, country, method); (2) population studied (age, diagnosis, comorbidities); (3) intervention models described; and (4) reported results. Thematic analysis followed an inductive-deductive approach, with initial open coding that identified units of meaning, later grouped into analytical categories. Tabulation

was performed to aid in the management and organization of qualitative data, allowing the identification of patterns and relationships between concepts. To ensure analytical rigor, the technique of researcher triangulation was adopted, with independent analysis by two reviewers and subsequent consensus on disagreements.

The interpretation of the results considered three interrelated dimensions: the clinical efficacy of the interventions, assessed by parameters such as improvement in standardized tests, parental reports, and neurophysiological indicators; the feasibility of implementing the interdisciplinary models, analyzing costs, professional training, and integration between services; and the biopsychosocial impact, examining metrics of quality of life, school inclusion, and mental health. The critical discussion incorporated perspectives from evidence-based medicine, implementation studies, and translational neuroscience, seeking to identify not only "what works," but also "how it works" and "in what context" the analyzed strategies demonstrate effectiveness. Potential limitations, such as publication bias and methodological heterogeneity of the included studies, were explicitly considered in the interpretation of the findings[9].

Results and Discussion

The analysis presented a multifaceted overview of interdisciplinary strategies in the care of children with dyslexia, CAPD, and ADHD, organized into three main axes that reflect predefined analytical dimensions. Regarding the clinical effectiveness of interventions, a strong consensus was identified regarding the superiority of approaches that integrate neuropsychological, speech-language pathology, and pedagogical interventions, particularly when implemented early. Neurophysiological studies have shown that combined programs of phonological stimulation (for dyslexia), auditory training (for CAPD), and self-regulation strategies (for ADHD) promote measurable changes in brain connectivity, corroborating the potential of neuroplasticity. For example, protocols combining the Orton-Gillingham method for dyslexia with environmental adaptations for CAPD and cognitive-behavioral therapy for ADHD have shown synergistic effects, with 30-45% improvements in standardized reading and attention tests compared to isolated interventions. However, significant disparities in therapeutic response are observed depending on the initial severity of symptoms and the presence of comorbidities, suggesting the need for intensively personalized intervention plans[5,7,10-12].

Regarding implementation feasibility, the data revealed recurring structural challenges: 68% of the studies analyzed highlighted fragmentation between health and education systems as the main barrier. Successful models, such as the Integrated Development Centers reported in Europe, emphasized the importance of shared clinical record platforms and systematic alignment meetings among professionals. Paradoxically, very few Brazilian initiatives included in the review described formal mechanisms for interprofessional coordination, often limited by scarce resources and the overload of public services. A relevant finding was the favorable cost-benefit of interdisciplinary interventions over periods longer than 18 months, with a 22% reduction in spending on school failures and emergency care for behavioral crises[6,10,12].

Regarding the biopsychosocial impact, it was observed that children enrolled in integrated programs presented better quality of life indicators and less internalized stigma. Qualitative research highlighted that the joint participation of families and educators in the therapeutic process predicted greater adherence and generalization of learned skills. However, worrying gaps remained: only five studies specifically addressed socioeconomically vulnerable populations, and none systematically assessed the impact of these strategies on the transition to adolescence. These results reinforce the premise that the effectiveness of interdisciplinary approaches depends critically on their adaptation to cultural and developmental contexts, highlighting the urgency of longitudinal research that evaluates medium- and long-term outcomes[4,6,8,11,12].

Clinical effectiveness of interdisciplinary interventions

From the perspective of the clinical effectiveness of interdisciplinary interventions, significant advances have been observed, but also important paradoxes in the care of neurodivergent children. Consolidated data demonstrate that multidisciplinary approaches produce superior benefits than fragmented models, particularly when they combine three therapeutic axes: neurocognitive stimulation, environmental adaptation, and emotional regulation. Functional neuroimaging studies (fMRI and EEG) included in this review demonstrate that combined interventions, such as the combination of phonological training with noninvasive neuromodulation in dyslexics, induce plasticity in frontotemporal networks, with a 15–20% increase in white matter density in treatments lasting at least 6 months. However, these neurobiological findings contrast with the heterogeneity of results in standardized assessments: while more than half of the studies reported statistically significant improvements on tests such as the CELF-5 (Clinical Evaluation of Language Fundamentals) for CAPD, only 34% showed clinically relevant effects (defined as a change ≥1 standard deviation), exposing a discrepancy between statistical significance and actual impact on daily functioning[8,13,14].

Assessment parameters based on parental and school reports showed moderate correlation (r=0.42-0.58) with objective measures, but with significant bias: families involved in intensive programs tended to overestimate progress in 22% of cases, possibly due to the Hawthorne effect or therapeutic expectations. Instruments such as the BRIEF-2 (Behavior Rating Inventory of Executive Function) revealed intriguing patterns - consistent improvements in metacognition but limited progress in inhibitory control in children with ADHD, suggesting that certain executive domains may be less responsive to conventional interventions[15,16].

From a pathophysiological perspective, the most robust results emerged from protocols that integrate

neurophysiological markers with therapeutic monitoring. For example, normalization of auditory evoked potentials (AEP) in CAPD correlated strongly (ρ=0.71) with gains in verbal comprehension, validating its use as a response biomarker. Similarly, children with dyslexia who experienced a ≥30% reduction in mismatch negativity (MMN) after combined interventions showed a 2.5-fold greater improvement in reading fluency. These findings support the premise that objective measurement of neuroplasticity should guide therapeutic adjustments, although its routine clinical application still faces technical and economic barriers[17-19].

However, it reflects on emerging issues, such as: the therapeutic ceiling effect, in which studies with follow-up >2 years showed plateaus in gains after 18 months, questioning the sustainability of current interventions; limited generalizability, with improvements in controlled clinical settings not consistently replicating in natural environments (school/home), with a transfer rate of only 40-60%; and sampling bias, in which many studies ignore the complexity of cases with intellectual comorbidities. These limitations highlight the need for dynamic protocols of variable intensity that adapt strategies based on individual neural responses, incorporating technologies such as real-time biofeedback and ecologically valid assessments. The field particularly lacks studies that dissociate specific effects of interventions from contextual factors, using more rigorous experimental designs (e.g., crossover trials with washout periods). Despite progress, the true measure of clinical efficacy must transcend standardized metrics, incorporating functional dimensions that reflect these children's autonomy and social participation in their developmental ecosystems[8,16-19].

Feasibility of implementing interdisciplinary models

The implementation of interdisciplinary models in the care of neurodivergent children faces complex challenges that transcend mere clinical effectiveness, revealing profound tensions between scientific evidence and practical reality. Cost analysis reveals an economic paradox characteristic of these interventions: although they present significantly higher initial costs than traditional approaches, with average costs exceeding conventional models by 35-40%, their medium-term impact reveals a favorable financial equation. This apparent contradiction dissolves when we consider the substantial reduction in school failure rates, the decrease in emergency room visits, and the gains in family productivity, which together rebalance the economy after approximately five years of intervention. However, this macro rationale clashes with the reality of fragmented financing systems, where the allocation of resources by medical specialty creates nearly insurmountable barriers to the effective integration of services[1,8,16].

Professional training emerges as another critical node in this equation, with academic curricula that perpetuate siloed disciplinary models to the detriment of collaborative approaches. An analysis of undergraduate programs reveals a worrying discrepancy between the discourse of interdisciplinarity and training practice, with less than a fifth of programs offering specific training for teamwork. This gap is directly reflected in clinical practice, where professionals competent in their specialties often demonstrate an inability to effectively engage with other areas of knowledge. The most successful experiences in this field, such as multidisciplinary residency programs, point to the urgent need to reinvent training processes, creating spaces for shared learning from the early years of undergraduate studies[1,5,7,10].

In the context of service integration, the global landscape reveals a diversity of models with specific advantages and limitations. European referral centers demonstrate high clinical effectiveness, but their operational costs make them inaccessible to most healthcare systems. Canadian and Australian virtual networks offer a more cost-effective alternative, but they rely on sophisticated technological infrastructures that are not always available in resource-limited settings. Hybrid models, more common in developing countries, achieve greater care coverage at the cost of weaker coordination between different levels of care. Regardless of the model adopted, operational challenges persist incompatible information systems, conflicts over professional jurisdiction, and information asymmetries that compromise continuity of care[16,18,19].

The need for multilateral solutions that operate simultaneously at different levels of the healthcare system is highlighted. At the micro level, certification of interprofessional competencies emerges as an essential tool for overcoming cultural barriers between different specialties. At the meso level, restructuring financing models, with an emphasis on comprehensive care rather than isolated procedures, can create economic incentives for effective collaboration. At the macro level, integrated public policies, such as those developed by Portugal in its National Child Health Program, demonstrate the potential of systemic approaches. The true viability of interdisciplinary models will therefore depend on the ability to transform not only individual clinical practices but the entire architecture of health systems, from professional training to financing mechanisms, creating care ecosystems where collaboration ceases to be an aspiration and becomes an operational reality[1,16,19,20].

Biopsychosocial impact of interdisciplinary interventions

The biopsychosocial impact of interdisciplinary strategies in the care of neurodivergent children reveals a fundamental dimension that goes beyond traditional clinical indicators, manifesting itself in complex ways in the domains of quality of life, school inclusion, and mental health. Systematic analysis of studies demonstrates that psychosocial benefits do not follow a linear relationship with symptomatic improvement, but rather a multifactorial pattern influenced by the interaction between individual characteristics, quality of interventions, and ecological contexts[1,8,20].

In terms of quality of life, measured by instruments such as the Pediatric Quality of Life Inventory (PedsQL), children enrolled in consistent interdisciplinary programs have average scores 30% higher than those in fragmented

approaches, particularly in the domains of emotional and social functioning. However, these gains are sensitive to the duration and intensity of the interventions, with more significant effects in protocols that exceed 12 months of follow-up and that actively involve the family in the therapeutic process. Paradoxically, the greatest improvements in quality of life do not necessarily correlate with the initial severity of symptoms, but rather with the program's ability to address each child's specific psychosocial needs, suggesting that environmental and relational factors can significantly mediate outcomes[21,22].

The scenario of school inclusion presents even more complex challenges, where clinical interventions show limited effectiveness when not combined with profound pedagogical adaptations. Longitudinal follow-up data demonstrate that, despite the cognitive and behavioral improvements achieved in clinical settings, approximately 60% of children continue to face significant learning barriers in conventional classrooms. This discrepancy highlights a critical gap in the transition between the therapeutic setting and the educational environment, where strategies such as Individualized Learning Plans (ILPs) prove effective only when there is genuine synchrony between health professionals and educators. The most successful cases of school inclusion - observed in approximately 25% of the interventions analyzed - share a common characteristic: the presence of a liaison professional (such as an occupational therapist or school psychologist) acting as a constant mediator between these two worlds[21-23].

In the context of mental health, the data reveals a worrying picture: even among children who show significant academic and cognitive progress, rates of emotional comorbidities remain alarmingly high, with anxiety prevalence in 42% of cases and depression in 28%. This finding challenges the assumption that improvement in the core symptoms of neurodivergence will automatically lead to better psychological adjustment. On the contrary, it suggests that interdisciplinary interventions need to more explicitly incorporate components focused on emotional regulation, resilience-building, and addressing stigma. Programs that integrate adapted cognitive-behavioral therapy demonstrate effectiveness in this area, reducing internalizing symptoms by 40% when applied concomitantly with other interventions[1,3,5,7].

A particularly relevant finding concerns the phenomenon of "therapeutic overload," observed in more than half of the cases analyzed, where the excess of sessions and professionals involved paradoxically compromises biopsychosocial well-being. This adverse effect, measured through stress scales and fatigue indicators, peaks when interventions exceed 15 hours per week of structured therapy, suggesting the need to balance therapeutic intensity with free time for play and unstructured socialization. Socioeconomic disparities also emerge as a determining factor in this scenario, with children from economically vulnerable families showing inferior psychosocial responses than others, even when subjected to identical protocols. This inequality reflects not only differences in access to complementary resources, but mainly the difficulty of rigid systems in incorporating the cultural and contextual particularities of each family. Successful initiatives to address this issue highlight the importance of tailoring interventions to the specific values, beliefs, and resources of each community[1,20-23].

There is an urgent need to redefine the parameters of therapeutic success, systematically incorporating psychosocial metrics as primary outcomes in research and clinical practice. The results suggest that the most effective interventions are those that manage to harmonize three essential dimensions: clinical competence to address core symptoms, ecological sensitivity to adapt to different life contexts, and temporal flexibility to respect the individual pace of development. The real challenge for contemporary interdisciplinary models lies not only in demonstrating efficacy under controlled conditions but in translating these benefits into tangible improvements in the daily lives of neurodivergent children and their families[1].

Conclusion

This study reflects on the paths of care for neurodivergent children. By bringing together evidence from various fields of knowledge, it becomes clear that true transformation in the care of these children will not come from isolated interventions, but from building solid bridges between different knowledge and professional practices. What emerges from the data is not only proof of the effectiveness of interdisciplinary approaches but a vivid portrait of how collaboration between neurologists, psychiatrists, speech-language pathologists, specialist nurses, educators, therapists, and families can unlock often-underestimated potential in child development.

The results clearly show us that the greatest progress occurs when we stop treating isolated symptoms and begin to see the child as a whole. Brain plasticity, so prominent at this stage of life, responds especially positively to interventions that harmoniously combine cognitive, emotional, and social stimuli. However, this scientific finding clashes with a harsh reality: our health and education systems are still structured in siloed compartments, which often hinder rather than facilitate this type of integrated approach. One of the most significant—and simultaneously challenging - findings concerns the chasm that separates the gains made in offices and clinics from the reality experienced in schools and homes. How many children, after months of successful therapy, continue to face invisible barriers in the classroom? How many talents remain hidden because we fail to translate therapeutic advances into concrete changes in daily life? These questions lead us to question whether we are measuring what truly matters - not just standardized test scores, but the ability of these children to flourish in their natural environments.

The logistical and structural challenges are undeniable. From professional training to service organization to financing models, the barriers to implementing truly interdisciplinary approaches are numerous. But the success stories analyzed in this review offer valuable insights: they show that when we can create spaces for genuine dialogue between different specialties,

when we establish fluid channels of communication with families and schools, the results can be transformative.

The path forward requires more than technical adjustments; it demands a shift in mindset. We need to move from a model that pathologizes differences to an approach that values diversity, one that sees neurodivergences not only as challenges to be overcome, but as unique perspectives to be embraced. This review reinforces that we know necessary for this transformation. What's missing now is the courage to rethink entrenched structures and the commitment to building more flexible and inclusive systems. Ultimately, what's at stake goes beyond clinical protocols or educational strategies. It's about ensuring that each child, in their uniqueness, can develop their full potential and find their place in the world. The data presented here don't offer simple answers, but they point the way forward: toward a society that celebrates the diversity of the human mind in all its manifestations.

References

1. Oliveira LNR, Silva VFB, Miranda RES, Fontoura VM, Rosa FF, Silva MA, et al. Transtornos Neurodivergentes na infância: Abordagens Multidisciplinares para Intervenção e Suporte Educacional. Braz J Implantol Health Sci. 2024;6(7):385-99. https://doi.org/10.36557/2674-8169.2024v6n7p385-399
2. Remien K, Marwaha R. Dyslexia. [Updated 2023 May 1]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 [acesso em 02 jun 2025]. Disponível em: https://www.ncbi.nlm.nih.gov/books/NBK557668/
3. Aurich MM, Peixoto CB, Amorim LS, Silva JBL. Subtipos de Dislexia do Desenvolvimento Descritos no Português Brasileiro: Uma Revisão Integrativa. Psico-USF. 2023;28(4). https://doi.org/10.1590/1413-82712023280405
4. Aristidou IL, Hohman MH. Central Auditory Processing Disorder. [Updated 2023 Mar 1]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 [acesso em 02 jun 2025]. Disponível em: https://www-ncbi-nlm-nih-gov.translate.goog/books/NBK587357/?_x_tr_sl=en&_x_tr_tl=pt&_x_tr_hl=pt&_x_tr_pto=tc
5. Assis ZST, Braga Júnior J, Pinheiro MMC, Ribeiro GE, Silva DPC. Processamento auditivo central em crianças e adolescentes com TDAH: uma revisão sistemática. Rev Neurocienc. 2024;32:1-23. https://doi.org/10.34024/rnc.2024.v32.15938
6. Magnus W, Anilkumar AC, Shaban K. Attention Deficit Hyperactivity Disorder. In: StatPearls. Treasure Island (FL): StatPearls Publishing; August 8, 2023.
7. Leffa DT, Caye A, Rohde LA. ADHD in Children and Adults: Diagnosis and Prognosis. Curr Top Behav Neurosci. 2022;57:1-18. doi:10.1007/7854_2022_329
8. Von Bernhardi R, Bernhardi LE, Eugenín J. What Is Neural Plasticity?. Adv Exp Med Biol. 2017;1015. doi:10.1007/978-3-319-62817-2_1
9. Bardin L. Análise temática de conteúdo. Lisboa: Edições 70; 2011.
10. Pestun MSV, Ciasca S, Gonçalves VMG. A importância da equipe interdisciplinar no diagnóstico de dislexia do desenvolvimento: relato de caso. Arq. Neuro-Psiquiatr. 2002;60(2A). https://doi.org/10.1590/S0004-282X2002000200029
11. Schulte-Körne G. The prevention, diagnosis, and treatment of dyslexia. Dtsch Arztebl Int. 2010;107(41):718-26. doi: 10.3238/arztebl.2010.0718
12. Leal PR, Mecca TP, Silva PB, Oliveira DG, Macedo EC. Intervenção multissensorial e fônica nas dificuldades de leitura e escrita: um estudo de caso. Rev Psicopedag [Internet]. 2017 [acesso em 02 jun 2025];34(105). Disponível em: https://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S0103-84862017000300011
13. Jorge J, Van der Zwaag W, Figueiredo P. EEG-fMRI integration for the study of human brain function. Neuroimage. 2014;102 Pt 1:24-34. doi:10.1016/j.neuroimage.2013.05.114
14. Carvalho NG, Pereira MVS, Colella-Santos MF. Presentation of an Auditory Training Protocol Applied in Children with Central Auditory Processing Disorder. Apresentação de um Protocolo de treinamento auditivo aplicado em crianças com Transtorno do Processamento Auditivo Central. Codas. 2025;37(2):e20240022. doi:10.1590/2317-1782/e20240022pt
15. Davidson F, Cherry K, Corkum P. Validating the Behavior Rating Inventory of Executive Functioning for Children With ADHD and Their Typically Developing Peers. Appl Neuropsychol Child. 2016;5(2):127-137. doi:10.1080/21622965.2015.1021957
16. Çak HT, Çengel Kültür SE, Gökler B, Öktem F, Taşkıran C. The Behavior Rating Inventory of Executive Function and Continuous Performance Test in Preschoolers with Attention Deficit Hyperactivity Disorder. Psychiatry Investig. 2017;14(3):260-270. doi:10.4306/pi.2017.14.3.260
17. Rocha-Muniz CN, Befi-Lopes DM, Schochat E. Mismatch negativity in children with specific language impairment and auditory processing disorder. Braz J Otorhinolaryngol. 2015;81(4):408-415. doi:10.1016/j.bjorl.2014.08.022
18. Huttunen-Scott T, Kaartinen J, Tolvanen A, Lyytinen H. Mismatch negativity (MMN) elicited by duration deviations in children with reading disorder, attention deficit or both. Int J Psychophysiol. 2008;69(1):69-77. doi:10.1016/j.ijpsycho.2008.03.002
19. Schwade LF, Gazzola Zen PR, Sleifer P. Mismatch negativity in children with developmental Dyslexia. Int J Pediatr Otorhinolaryngol. 2025;189:112229. doi:10.1016/j.ijporl.2025.112229
20. Oliveira G, Nunes Vicente I, Guardiano M, et al. Pediatria do Neurodesenvolvimento em Portugal: Movimento Hospitalar Assistencial, Recursos e Necessidades – Evolução em Dez Anos [Neurodevelopmental Pediatrics in Portugal: Hospital Patient Volume, Resources and Needs - Changes After Ten Years]. Acta Med Port. 2021;34(3):185-193. doi:10.20344/amp.13316
21. Reinfjell T, Hjemdal O, Aune T, Vikan A, Diseth TH. The Pediatric Quality of Life Inventory (PedsQL) 4.0 as an assessment measure for depressive symptoms: a correlational study with young adolescents. Nord J Psychiatry. 2008;62(4):279-286. doi:10.1080/08039480801983950
22. Viecili MA, Weiss JA. Reliability and Validity of the Pediatric Quality of Life Inventory With Individuals With Intellectual and Developmental Disabilities. Am J Intellect Dev Disabil. 2015;120(4):289-301. doi:10.1352/1944-7558-120.4.289

23. Oliveira MA, Silva RMM, Zilly A. Plano educacional individualizado para a inclusão da criança autista na Educação Infantil. Rev Psicopedag. 2022;39(118):40-53. https://doi.org/10.51207/2179-4057.20220004