MULTIDISCIPLINARY APPROACHES IN EDUCATION AND THERAPY: A CASE STUDY OF INTEGRATED STRATEGIES FOR A CHILD WITH AUTISM[1]

Multidisciplinárne prístupy vo vzdelávaní a terapii: Prípadová štúdia integrovaných stratégií pre dieťa s autizmom

Barbora Lanková,[2] *Michal Vostrý,*[3] *Ilona Pešatová,*[4] *Otakar Fleischmann,*[5] *Ladislav Zilcher,*[6] *Andrea Ježková*[7]

Abstract: *The article presents a case study of a four-year-old boy diagnosed with ASD (Autism Spectrum Disorder), a severe receptive language disorder, pronounced hyperactivity, and dyspraxia. The study evaluates a comprehensive approach to care and education, encompassing medical, psychological/occupational therapy, and educational interventions. The main aim of the article is to analyze the effectiveness of integrated therapeutic and educational strategies focused on supporting social and communication skills, cognitive development, and the management of sensory challenges in children with atypical autism. A longitudinal design was used, collecting data from regular neurological, psychological, and speech therapy assessments, as well as from observations of behavior and learning in both home and school settings. The data were analyzed qualitatively to identify key success factors and areas requiring further support. The results indicate that a consistent and structured pedagogical environment, combined with targeted therapy, significantly contributed to the boy's progress in social adaptability and communication skills. Improvement was observed in his ability to maintain attention, verbal expression, and motor skills. The study confirms that a multidisciplinary approach in education and therapy is crucial for supporting the comprehensive development of children with atypical autism. Emphasis on individualized educational strategies and continuous supervision and adaptation of therapeutic plans appears to be an effective practice for integrating these children into mainstream education.*

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2 Barbora Lanková, PhDr., Ph.D., Univerzita J. E. Purkyně v Ústí nad Labem, Katedra primárního a preprimárního vzdělávání, Hoření 13, 400 01 Ústí n. Labem, Česká republika (https://orcid.org/0009-0006-9193-212X). E-mail: *Barbora.Lankova@ujep.cz* Osobní údaje zveřejněné s písemným souhlasem autorky.

3 Michal Vostrý, doc., PhDr., Ph.D., Univerzita J. E. Purkyně v Ústí nad Labem, Pedagogická fakulta, Katedra speciální a sociální pedagogiky, Fakulta zdravotnických studií, Katedra ergoterapie Hoření 13, 400 01 Ústí n. Labem, Česká republika (https://orcid.org/0000-0003-4749-3095). E-mail: *Michal.Vostry@ujep.cz* Osobní údaje zveřejněné s písemným souhlasem autora.

4 Ilona Pešatová, doc., PhDr., PaedDr., Ph.D., Univerzita J. E. Purkyně v Ústí nad Labem, Pedagogická fakulta, Katedra speciální a sociální pedagogiky, Hoření 13, 400 01 Ústí n. Labem, Česká republika (https://orcid.org/0000-0001-7036-5652). E-mail: *Ilona.Pesatova@ujep.cz.* Osobní údaje zveřejněné s písemným souhlasem autorky.

5 Otakar, Fleischmann, PhDr., Ph.D., Univerzita J. E. Purkyně v Ústí nad Labem, Fakulta zdravotnických studií, Katedra záchranářství, radiologie a biomedicínské techniky, Sociální péče 3652/13, 400 11 Ústí nad Labem, Česká republika (https://orcid.org/0009-0006-7635-3563). E-mail: *Otakar.Fleischmann@ujep.cz*. Osobní údaje zveřejněné s písemným souhlasem autora.

6 Ladislav Zilcher, doc., PhDr., Ph.D., Univerzita J. E. Purkyně v Ústí nad Labem, Pedagogická fakulta, Katedra speciální a sociální pedagogiky, Hoření 13, 400 01 Ústí n. Labem, Česká republika (https://orcid.org/0000-0002-9551-1035). E-mail: *Ladislav.Zilcher@ujep.cz*. Osobní údaje zveřejněné s písemným souhlasem autora.

7 Andrea Ježková, Mgr., Univerzita J. E. Purkyně v Ústí nad Labem, Fakulta zdravotnických studií, Katedra fyzioterapie, Sociální péče 3652/13, 400 11 Ústí nad Labem, Česká republika. E-mail: *Andrea.Jezkova@ujep.cz.* Osobní údaje zveřejněné s písemným souhlasem autorky.

***Keywords**: autism spectrum disorder, ADHD, dyspraxia, integrated care, multidisciplinary approach, educational strategies, supervision.*

***Abstrakt:** Článok predstavuje prípadovú štúdiu štvorročného chlapca s diagnózou ASD (porucha autistického spektra), závažnou poruchou receptívnej reči, výraznou hyperaktivitou a dyspraxiou. Štúdia hodnotí komplexný prístup k starostlivosti a vzdelávaniu, ktorý zahŕňa lekárske, psychologické/pracovné terapie a vzdelávacie intervencie. Hlavným cieľom článku je analyzovať účinnosť integrovaných terapeutických a vzdelávacích stratégií zameraných na podporu sociálnych a komunikačných zručností, kognitívneho rozvoja a zvládanie senzorických problémov u detí s atypickým autizmom. Bol použitý longitudinálny dizajn, pričom sa zbierali údaje z pravidelných neurologických, psychologických a logopedických hodnotení, ako aj z pozorovaní správania a učenia v domácom aj školskom prostredí. Údaje boli analyzované kvalitatívne s cieľom identifikovať kľúčové faktory úspechu a oblasti, ktoré si vyžadujú ďalšiu podporu. Výsledky naznačujú, že dôsledné a štruktúrované pedagogické prostredie v kombinácii s cielenou terapiou významne prispelo k pokroku chlapca v oblasti sociálnej adaptability a komunikačných zručností. Zlepšenie bolo pozorované v jeho schopnosti udržať pozornosť, verbálnom vyjadrovaní a motorických zručnostiach. Štúdia potvrdzuje, že multidisciplinárny prístup vo vzdelávaní a terapii je kľúčový pre podporu komplexného rozvoja detí s atypickým autizmom. Dôraz na individualizované vzdelávacie stratégie a priebežný dohľad a prispôsobovanie terapeutických plánov sa javí ako účinný postup pri integrácii týchto detí do bežného vzdelávania.*
***Kľúčové slová:** poruchy autistického spektra, ADHD, dyspraxia, integrovaná starostlivosť, multidisciplinárny prístup, vzdelávacie stratégie, supervízia.*

Introduction

Autism Spectrum Disorder (ASD) represents one of the most complex challenges in neurodevelopmental disorders, with its prevalence steadily increasing worldwide over the past decades (Salari et al., 2022; Kassim, & Mohamed, 2024). ASD encompasses a wide range of symptoms affecting social interaction, communication, and behavior, which necessitates a multidisciplinary approach to diagnosis, therapy, and education (Kardara, & Andromachi, 2021; Frye, 2022; Sousa et al., 2024). Historically, atypical autism was defined in ICD-10 (F84.1) as a form of autism that did not meet all diagnostic criteria for childhood autism, such as later onset of symptoms or incomplete deficits in areas like social interaction or communication (Freitag, 2020; Karla et al., 2021). The transition to the broader category of ASD in ICD-11 and DSM-5 marked a significant shift in diagnosis, bringing both advantages and challenges. On one hand, unified diagnostic criteria facilitate international collaboration and data comparability (Freitag, 2020). On the other hand, there remains an important need to understand the variability of symptoms and individual needs of children who previously fell under the category of atypical autism (Anglinskas, & Anzellotti, 2022). The management support of individuals with ASD, particularly in cases involving complex needs such as atypical autism, requires a highly integrated and individualized approach (Oommen et al., 2017; Frye, 2022). Effective care often depends on close collaboration among medical professionals, psychologists, speech therapists, educators, and families, ensuring that each child's unique challenges and strengths are addressed holistically (Will et al., 2018; Nadler et al., 2019; Mammas et al., 2021). This multidisciplinary framework not only supports the child's

developmental progress but also facilitates their integration into educational and social environments (Coelho, 2019; Widianti, & Chamidah, 2024). Case studies play a crucial role in understanding and addressing the specific needs of children with ASD. By closely examining individual cases, researchers and practitioners can identify effective interventions, document challenges, and provide evidence-based recommendations that inform broader practices (Singh Bunyak, 2018; Widianti, & Chamidah, 2024). By closely examining individual cases, researchers and practitioners can identify effective interventions, document challenges, and provide evidence-based recommendations that inform broader practices. Additionally, these studies often shed light on how interventions can be adapted to specific contexts, underlining the importance of tailoring strategies to meet diverse needs (Hayes et al., 2018). The growing understanding of Autism Spectrum Disorder (ASD) has led to a significant focus on individualized and interdisciplinary care strategies (Frye, 2022; Salari et al., 2022). Effective intervention for individuals with ASD requires integrating medical, psychological, educational, and therapeutic approaches tailored to the unique strengths and challenges of each child (Oommen et al., 2017; Sousa et al., 2024). Atypical autism, characterized by variable symptom presentation, exemplifies the complexity and diversity within the ASD spectrum, necessitating precision in both diagnosis and intervention strategies (Freitag, 2020; Kalra et al., 2021).

Objectives

The objectives of this study are twofold. First, it aims to explore the impact of a personalized multidisciplinary intervention plan on the development of a child with atypical autism (ASD by ICD-11). This involves analyzing improvements in social interaction, communication, sensory regulation, and adaptive skills over a defined period (Will et al., 2018). Second, the study seeks to highlight the practical implications of integrating educational and therapeutic practices in a single framework, with a focus on the role of case-specific adjustments and family involvement in the intervention process (Mussetti et al., 2021). This case study provides a detailed examination of a four-year-old boy diagnosed with atypical autism and associated conditions, such as receptive language disorder and dyspraxia. Data collected through longitudinal assessments and real-world observations underscore the importance of tailoring interventions to the child's developmental needs and the contextual factors of their educational and family environments (Fayette Bond, 2018).

Methodogogy

Case Selection

The case of a four-year-old boy diagnosed with atypical autism, a severe receptive language disorder, pronounced hyperactivity, and dyspraxia was selected based on the recommendation of a multidisciplinary team of specialists

from neurology, psychology, and phoniatrics departments. This specific case was chosen for its complexity and the need for an integrated approach to care and education, which allows for a more in-depth examination of the effectiveness of various interventions. The data collected was processed on the basis of signed informed consent. This consent was signed by the child's legal representative. The data has been anonymised.

Data Collection

Multidisciplinary Assessment: neurological Evaluation: An electroencephalogram (EEG) performed in October 2021 showed no pathological findings. Psychological Evaluation: conducted by a clinical psychologist, this assessment ruled out a fully developed picture of childhood autism and identified a severe mixed developmental communication disorder. Phoniatric and Audiological Examination: the phoniatric evaluation revealed immature phonological analysis and attention difficulties during communication tasks. Audiological tests confirmed normal peripheral hearing.

Regular Monitoring and Evaluation

Neurological, Audiological, and Speech Therapy Examinations: These examinations are conducted regularly as part of the boy's medical follow-up. Behavioral and Learning Observations: Data were collected through observations of the boy's behavior and learning in both home and school environments. These observation records were analyzed to identify patterns and developmental changes. Counseling Reports: reports from counseling centers and educational advisory services were used to obtain a comprehensive picture of the boy's needs in the educational process.

Therapeutic Interventions

Psychological Support: an individualized educational plan featuring visual support materials and structured learning activities. Educational Measures: integration into a mainstream preschool class with the support of a teaching assistant, utilizing visual and structured methods. Speech Therapy: focused on stimulating orofacial functions, improving articulation, and developing communication skills. Occupational Therapy: regular sessions aimed at developing fine motor skills and improving hand and finger coordination.

Analytical Methods

The data were analyzed qualitatively using thematic analysis. This method facilitated the identification of key patterns and themes in the boy's development and responses to various interventions. The process involved the following steps:

Coding

Data from observations, interviews, and reports were coded to identify significant patterns and themes.

Thematic Analysis

The coded data were examined to determine the main themes and patterns, which were further interpreted within the context of existing literature and theoretical frameworks.

Triangulation

To confirm the validity and reliability of the findings, data triangulation from various sources (e.g., observations, counseling reports, medical and therapeutic records) was employed.

Transparency and Replicability

The methodological approach of this study is described in detail to ensure transparency and the possibility of replication. Case selection was conducted based on expert recommendations and a diagnosis confirmed by a multidisciplinary team. Data collection was systematic and involved various methods and sources, allowing for triangulation and enhancing the validity of the findings. The analytical procedures were clearly defined and based on standard qualitative methods.

Case Study

Introduction

Autism is a complex neurodevelopmental disorder requiring a multidisciplinary approach to diagnosis and therapy. This case study focuses on a four-year-old boy diagnosed with autism, a severe receptive language disorder, pronounced hyperactivity, and dyspraxia. The study examines the effectiveness of integrated therapeutic and educational strategies aimed at developing social and communication skills, cognitive development, and the management of sensory challenges.

Diagnostic Findings

Neurological Assessment: The patient (4 years, 1 month) underwent an electroencephalogram (EEG) in October 2021, which was interpreted as showing no pathological findings. Nevertheless, symptoms of hyperactivity and limited self-regulation were noted, leading to the diagnosis of Attention Deficit Hyperactivity Disorder (ADHD).

Psychological Assessment: Further evaluation by a clinical psychologist excluded a fully developed picture of childhood autism. The psychologist concluded that the boy shows signs of a severe mixed developmental communication disorder, likely symptomatic of attention and concentration difficulties.

Phoniatric and Audiological Assessment: A phoniatric evaluation identified an immature phonological analysis and difficulties maintaining attention during communication tasks, fleeting eye contact, emotional outbursts at the

suggestion of tasks, and low motivation to communicate. Audiological tests confirmed normal peripheral hearing.

Conclusions of Counseling and School Advisory Centers: These reports emphasized the boy's impaired social interaction and the need for supportive measures in the educational process, including a teaching assistant.

Medical and Developmental Profile

The boy undergoes comprehensive medical monitoring, including regular neurological, audiological, and speech therapy evaluations.

Motor Development

In terms of developmental milestones, the boy began walking at 15 months, a slight delay compared to typical expectations. Although his motor skills were evaluated as relatively strong, he exhibits weaker fine motor skills, manifested in difficulties manipulating small objects and uncoordinated pencil grasp. Speech Development: His speech development has been significantly affected, with the boy initially speaking in his own jargon, which impacts his ability to express himself and communicate effectively.

Therapeutic Interventions

Psychological Support: The boy is regularly monitored by a clinical psychologist who assesses his adaptation to social and educational settings, as well as his cognitive development. An individualized educational plan has been implemented, emphasizing visual support materials and structured learning activities. Educational Measures: He is integrated into a mainstream preschool class with the support of a teaching assistant. An individualized approach is used, featuring visual and structured methods to better organize daily routines and manage instructions. Visual supports and structured educational activities are applied in the school environment to help him navigate the daily routine more effectively. Speech Therapy: Intensive work with a speech therapist focuses on stimulating orofacial functions, improving articulation, and developing communication skills. Occupational Therapy: Regular sessions with an occupational therapist aim to improve fine motor skills, object manipulation, and coordination of the hands and fingers.

Social and Developmental Context

Family Environment: The boy lives in a complete family unit with both parents and a younger brother. The family environment is supportive and actively participates in his upbringing and therapy. Educational Environment: The boy attends preschool, where his integration into a mainstream class is complemented by special educational measures. Observations show progress in social adaptability and communication skills when interacting with peers and engaging in educational activities. While his overall motor skills are considered above average, his fine motor skills remain an area of weakness.

Conclusion

This case study highlights the importance of a multidisciplinary approach in caring for a child with atypical autism and related neurodevelopmental disorders. Collaboration among medical professionals, educators, therapists, and the family is vital for supporting the boy's special educational needs and his overall development. Individualized educational strategies, specially adapted teaching methods, and therapeutic interventions enable more effective social integration and improve his quality of life. This study confirms that placing emphasis on individualization, continuous supervision, and adaptation of therapeutic plans is key to the successful inclusion of children with atypical autism in mainstream education. Analysis of interviews and observations revealed several key thematic categories concerning the boy's social and communication development. In terms of social adaptability, the boy shows greater interest in peer interaction during structured activities. Observations indicate improvements in his ability to maintain eye contact and participate in play over the past six months. Teachers and therapists stressed the importance of visual supports and structured activities to enhance social skills. One teacher, for example, noted that visualizing the daily schedule and using structured activities significantly help the boy remain engaged and focused. Regarding communication skills, the boy's ability to express himself verbally has gradually improved thanks to intensive speech therapy. Improvements were observed in articulation and the use of simple sentences. According to the speech therapist, the boy has begun using more words and can even construct simple sentences, representing a significant advancement. Moreover, he has also shown improvement in nonverbal communication skills, such as using gestures and facial expressions to convey his needs and emotions. The parents have noted that he now uses gestures more often to express what he wants or needs, which helps them better understand him. In the area of cognitive development, there has been an observed improvement in attention span both at school and at home. Structured activities and visual supports have proven essential. Observers noted a marked increase in the boy's ability to concentrate on tasks, particularly during structured activities. An individualized educational plan emphasizing visual supports also helped him make progress in academic skills such as reading and counting. Teachers observed notable improvement in his ability to count and recognize letters, which they attribute to the use of visual aids and structured exercises.

Intervention

Psychology

Numerous studies have revealed a positive causal relationship between ADHD and the risk of Autism Spectrum Disorder (ASD). Moreover, ADHD shows a positive link to an increased risk of schizophrenia (Guo et al., 2024). For instance, Carson et al. (2023) found that children diagnosed with ASD and epilepsy have almost double the risk of developing ADHD. Conversely, ADHD

tends not to be linked to the risk of tic disorders, intellectual disability, mood disorders, or anxiety disorders (Guo et al., 2024). These findings underscore the need for early interdisciplinary therapy. From a psychological perspective, several combined approaches can be used, including both individual and group therapy. Given the causal links between ADHD and other issues, we assume that a positive change in one area will lead to positive changes in ASD-related and motor difficulties. When working with an individual diagnosed with ADHD (or mild brain dysfunction, which is considered to be a consequence of diffuse brain damage), the goal is to mitigate the symptoms, particularly impulsivity, hyperactivity, hyperexcitability, and ultimately attention deficits. These symptoms are often reflected in behavior, which can be inappropriate given the context. Such problematic behavior can result in either being ignored by others or receiving negative feedback, leaving the individual feeling rejected, abandoned, lonely, and both emotionally and socially deprived. If the individual demands attention from others, it is often done in an inappropriate or even aggressive manner, causing further rejection from those around them. This vicious cycle of negative interactions can be broken by providing an emotional corrective experience, in which the therapist—or close family members, such as parents—behaves toward the patient differently from what the patient has grown to expect based on past experiences. That means being calm, helpful, kind, and patient, and not being provoked into rejecting, becoming aggressive, cold, or withdrawing. This new experience leads the patient to differentiate interactional situations in which they once felt rejected, and to realize that relationships can evolve differently and more positively. An emotional corrective experience fosters both a change in the patient's experience during interactions and cognitive insights. Its effectiveness can be enhanced by combining it with the principles of Albert Ellis's (1962) Rational Emotive Therapy (the ABC theory), wherein the current emotional response (C) does not correspond to the external event (A) but rather to the meaning attached to it by the individual (B). If we help modify the patient's inappropriate beliefs and expectations, we reduce negative emotional states and thus diminish undesired behaviors.

It is also appropriate to apply the principles of social learning (Bandura & Walters, 1977; Barber et al., 2016), especially social reinforcement within the therapy. During interaction, desirable behaviors are reinforced and undesirable ones are eliminated. We rely on the principle that we tend to seek out and repeat what we experience as positive, and avoid what we experience as negative. By linking a pleasing experience with desirable behavior, we strengthen that behavior; linking undesirable behavior with an unpleasant experience helps to eliminate it. In keeping with the emotional corrective experience, the focus should be placed on the individual's positive manifestations, whereas undesirable behaviors should be clarified and interpreted in the patient's own words, thus enhancing self-awareness and self-regulation. A suitable method is internal dialogue, which leverages the regulatory function of speech: children with impulsivity struggle to moderate their motor expressions through verbal instructions. However, children are better able to guide their attention and

perceptual activities when they talk themselves through what they are going to do. Over time, this external speech is internalized. Self-awareness and self-regulation can also be strengthened through imitation—for example, in individual or group therapy. Wahman and Anderson (2021) demonstrated the positive impact of favorable feedback and the application of social stories with role-playing on enhancing self-regulation and adherence to social group rules among preschoolers. This method uses dependent intentional imitation, where a less competent individual imitates a more competent one.

It is important, however, to offer positive, achievable, and attractive models to prevent a boomerang effect in which the patient ignores or reacts negatively to those models—particularly if they are presented too frequently or with undue pressure. Presenting a negative model can be helpful, too, if the individual becomes aware of behavior they do not wish to adopt and learns the reasons why. The differentiation between positive and negative models is strengthened through role-playing and reflection on different kinds of feedback; positive feedback is associated with pleasant emotional experiences, reinforcing desired behavior.

Given the interplay between cognition and emotion, it is advisable to reduce potential internal tension and induce a pleasant emotional state of relaxation before introducing the aforementioned approaches. For instance, daily practice of Schultz's autogenic training can reduce overall psychological tension and promote relaxation, which aids in using individualized affirmations (e.g., "think before I speak," "I am friendly…"). Relaxation, positive affirmations, and positive imagery are excellent means of eliminating potential negative mental blocks.

Special Educational Support

The boy is enrolled in a regular preschool (kindergarten) class with a teaching assistant because he requires a higher level of support and individualized attention. He benefits from being included in a mainstream classroom setting. However, he continues to show significant hyperactivity and low self-regulation both at home and at school. He often reacts to instructions with opposition and emotional outbursts, and his speech remains difficult to understand. Our approach involves initiating and supporting shared interactions with him. We aim to develop imitative play and symbolic play, which are crucial for language development. Work with the boy is primarily carried out through individual, structured activities, often visualizing the number of tasks using tokens, followed by a reward—something he likes or a favorite activity. By "playing," we teach him to seek praise and tangible rewards such as pictures or sound-based incentives. We carefully select tasks from a portfolio of structured exercises set at a lower developmental level to ensure success, focusing on visual and auditory perception, spatial orientation, intermodality, and seriation.

Success is intentionally built into these tasks, allowing us to praise and encourage the boy, which strengthens his skills over time. If a task seems too difficult, he tends to leave it, hindering progress. Each new skill—both social and perceptual—is reinforced thoroughly; we do not rush quantity but instead

build quality. We limit and define the time for activities and tasks for him. Using a picture-based system and a structured daily schedule gradually reduces problematic situations. We address his adaptation difficulties by visualizing routines at home and at school. We work with daily and weekly schedules through pictures, photos, and pictograms, consistently informing him of upcoming events to prevent outbursts, crying, and challenging behaviors. Daily and weekly communication boards have proven effective for giving him step-by-step visualization of the day's structure.

We also utilize a motivation calendar, organizational activities, and pictograms to represent various emotions. We slowly integrate him into group activities, carefully monitoring his behavior and concluding the activity before any unwanted behavior arises. Special educational support extends to regular parent education, instructing them to set clear but compassionate boundaries for the child, appropriate to his abilities. This approach allows them to appreciate his positive behaviors. They speak clearly, slowly, and distinctly to the child, communicating instructions gently but firmly and following through. Only one instruction is given at a time, and the child is permitted to complete it with adult support. Realistic demands are set, gradually increasing them. Together with the preschool, parents create behavioral routines and practice appropriate social behavior. It is necessary to maintain the same structured daily schedule and communication boards both at home and in the preschool setting. Parents learn to establish clear rules and to enforce them kindly yet firmly, as the boy is continually testing boundaries.

He requires frequent motivation, with a strong emphasis on positive feedback to reinforce desirable behaviors. Parents also provide appropriate feedback—specific praise or commentary on what worked or what did not. Even attempts and willingness to cooperate are valued. Throughout the day, parents announce changes in advance to prevent negative reactions. Over time, this consistent approach helps the boy develop correct behavioral patterns. Parents learn to seek activities in which he can experience success (and receive rewards) and gradually develop a motivational reward system. They also utilize social activation services for individual practice of social skills. When successful interactions occur, the boy is introduced to cooperation in pairs and eventually in a small group of children. A sensory integration program is being employed as well. The presence of a teaching assistant remains crucial to help enhance the boy's limited self-regulation and to prevent oppositional behavior. The assistant works with him on emotional regulation, addresses problematic behavior, and encourages positive interactions with other children. The assistant also assists in structuring his day, transitioning between tasks, and outdoor activities. Weekly short consultations and evaluations of the boy's educational progress are conducted with the special education teacher, the preschool teacher, the boy's legal guardian, and the teaching assistant. Daily evaluations involving parents, the preschool teacher, and the assistant ensure consistent educational approaches are applied at home and school, leading to gradual progress.

Systemic Music Therapy

Systemic music therapy methods, procedures, and techniques are applied when working with the boy and his parents to develop an effective plan for managing his hyperactive and impulsive behavior. Through collaborative musical creations and joint music-making with the therapist, the biological, mental, and social aspects are integrated, thereby accelerating learning. This process helps consolidate the solution to a given task and motivate the next therapeutic steps. The boy enjoys "brumendo" (humming), which engages his interest. He learns to vary volume, rhythm, and melody in group music-making, supported by simple motivation and guidance. Rhythmic exercises strengthen creativity, improving cooperation with the boy through instruments like the Boomwhackers, an ocean drum, and Orff instruments. Rhythm training positively affects speech, motor functions, auditory and memory skills. It also offers a non-intrusive way for the boy to express and release emotional tension—he might, for example, beat on a drum to vent stress—while enhancing his attention span. Gradually, therapy introduces rhythmic nursery rhymes and simple children's songs accompanied by movement, singing, and basic percussion instruments. The boy finds music, singing, and musical instruments very soothing. At home and in preschool, relaxing music with a slow tempo and harmonious melodies is used in the background during play, helping to prevent or reduce hyperkinetic behaviors and limit excessive noise levels.

Speech Therapy

Intensive collaboration with a speech therapist focuses on stimulating orofacial functions, improving articulation, and developing communication abilities and comprehension skills. The therapist maintains eye contact and communicates at the child's eye level. Therapeutic intervention takes the child's developmental stage into account in line with standard developmental scales for his age, tailoring interventions accordingly because his speech progresses slowly. Communication takes place in short sentences, avoiding unnecessary details. A system of nonverbal signals is built in parallel with verbal ones. Concept introduction is facilitated via pictures and simple storylines. Parents are taught to describe and comment on all activities to expand the child's vocabulary and reinforce comprehension. Speech and language are further stimulated through rhymes, poems, picture discussions, naming objects, and narrating everyday situations. Emphasis is placed on understanding and using simple prepositions, initially in comprehension tasks, then in production.

We reinforce understanding of simple instructions by combining them with demonstrations, gestures, and communication boards, thus strengthening the child's willingness to communicate.

Occupational Therapy (Ergoterapie – Expanded)

Regular occupational therapy sessions target the boy's fine motor skills, object manipulation, and hand-eye coordination. In this context, the therapist

conducts activities to improve finger dexterity, grip strength, and the formation of a stable pencil grasp. An essential part of the therapy is sensory integration training, during which the boy engages in tasks that enhance his tactile, vestibular, and proprioceptive processing. This might include using textured bins or sensory paths to stimulate exploration and body awareness, as well as tailored exercises on therapy balls or balance boards to improve posture and stability. The occupational therapist also works on functional daily living skills (e.g., dressing, utensil handling, and hygiene tasks) at a level suited to the boy's developmental stage. The therapist breaks each activity into structured steps, often using visual supports (such as step-by-step picture cards) to aid comprehension and maintain focus. Over time, increasing levels of complexity are introduced, encouraging problem-solving, impulse control, and self-regulation in various play and learning activities. The boy gradually learns to modulate his responses, developing more controlled movements and the ability to sustain his attention on a given task. If toe-walking (noted as "walks on tiptoe") persists, the occupational therapist may integrate exercises to encourage heel-to-toe gait patterns and stretch tight lower-leg muscles.

Physical Therapy (Fyzioterapie – Expanded)

Comprehensive physical therapy focuses primarily on movement therapy and animal-assisted therapy, leading to significant improvement in both somatognosis (awareness of one's own body) and stereognosis (ability to recognize objects by touch). Intensive movement therapy, generally twice a week, helps decrease the presence of stereotypical behaviors. Through the use of balance-based sensory–motor aids, such as balance cushions, beams, and obstacle courses, the boy works on strengthening somatic awareness, stability, and gross motor coordination. During these sessions, the parent is often involved as a supportive element, fostering a sense of security for the child. Engaging in new movement patterns under supervision can significantly enhance communication and social interaction between the boy and the parent, who may become an "anchor" during unfamiliar exercises. Therapy in lower developmental postures (e.g., crawling, half-kneeling) helps the boy become aware of simple body movements, improves coordinated limb movement, and facilitates relaxation. Regular sessions are critical; periods of absence are associated with a lower acceptance of physical activities, reduced enthusiasm for movement, and diminished cooperation. Animal-assisted therapy supplements these interventions, offering positive effects on communication and psychosocial skills. This typically involves hippotherapy (therapeutic horseback riding) and canisterapy (therapy with dogs) every three to four weeks for 20 sessions. During hippotherapy, the focus is on improving stability and strengthening postural muscles, which indirectly benefits walking, running, and motor patterns in activities of daily living. Canisterapy further supports social interaction, enhances communication, mitigates stereotypical behaviors, and boosts the boy's engagement with his surroundings.

Over time, this multifaceted physical therapy program promotes greater body awareness, improved balance, and an expanded range of functional movements. The therapist frequently consults with other professionals—such as occupational therapists, special educators, and psychologists—to align therapeutic goals and maintain consistency across interventions. This collaboration ensures that the physical therapy component supports cognitive, behavioral, and emotional development, ultimately encouraging the child's independence and quality of life.

Social and Developmental Context

The boy lives in a nuclear family with his parents and younger brother. His family environment is supportive and actively involved in his upbringing and therapy. He attends preschool, where his inclusion in a mainstream classroom is supplemented with special educational measures. In interactions with peers and during educational activities, he has shown progress in social adaptability and communication skills. Although his overall motor abilities are assessed as above average, fine motor skills remain an area of weakness.

Discussion

The findings of this case study demonstrate the critical role of a multidisciplinary approach in addressing the unique challenges faced by children with atypical autism, emphasizing the need for integrated therapeutic and educational strategies. The child showed marked progress in social adaptability, communication skills, and motor development, which aligns with existing evidence supporting individualized, structured interventions for children with Autism Spectrum Disorder (ASD) (Will et al., 2018; Sousa et al., 2024). This case underlines the complexity of addressing neurodevelopmental conditions, particularly in atypical cases where symptom variability necessitates precision in diagnosis and intervention (Freitag, 2020; Kalra et al., 2021). The combination of medical, psychological, educational, and therapeutic interventions proved essential for the child‘s development. Consistent with prior research, the use of structured visual supports and individualized educational plans significantly improved the child‘s ability to engage with educational and social activities (Nadler et al., 2019; Mammas et al., 2021). Moreover, the importance of parental involvement was reaffirmed; parents were integral in maintaining consistency across home and educational settings, mirroring findings that family participation enhances outcomes in children with ASD (Mussetti et al., 2021; Widianti, & Chamidah, 2024). The study highlights the role of speech therapy and sensory integration techniques in facilitating communication and adaptive skills. The improvement in verbal and nonverbal communication echoes findings that targeted speech therapy fosters functional language use in children with ASD (Singh, & Bunyak, 2018; Frye, 2022). Similarly, sensory regulation strategies mitigated hyperactivity and dyspraxia-related challenges, contributing to better engagement in structured activities (Oommen et al., 2017; Sousa et al., 2024).

Challenges and Limitations

Despite these advancements, the child continued to face difficulties in self-regulation and social interactions, particularly in unstructured settings. This aligns with previous findings that generalized improvements in ASD are often limited without long-term, intensive interventions (Hayes et al., 2018). Additionally, while structured supports were effective, their reliance on adult facilitation raises questions about the development of independent skills (Mammas et al., 2021). Another challenge was the persistence of motor coordination deficits, which highlights the need for ongoing occupational therapy. While improvements in fine motor skills were noted, achieving developmental milestones in this area may require prolonged intervention (Sousa et al., 2024). The findings underscore the importance of contextualized interventions, where the needs of the child, family, and educational setting are jointly considered. The use of multidisciplinary teams and regular evaluation ensures that interventions remain flexible and responsive to the child's developmental trajectory. This approach aligns with emerging frameworks advocating for precision psychiatry in ASD care, which emphasizes tailoring interventions to individual profiles (Aglinskas, & Anzellotti, 2022).

Limitations

This study has several limitations. As a single-case study, the findings cannot be generalized without caution. The longitudinal design, while valuable for tracking progress, may not fully capture the impact of interventions that require longer implementation periods. Future studies should explore larger sample sizes and incorporate quantitative measures to strengthen the evidence base.

Future Directions

Building on these findings, future research should investigate the long-term sustainability of skills acquired through multidisciplinary interventions and explore methods to foster independence in self-regulation and adaptive behavior. Additionally, studies could examine the efficacy of technology-assisted interventions, such as digital tools for communication and behavior monitoring, which are increasingly accessible in ASD care (Sousa et al., 2024).

Conclusion

A case study involving a four-year-old boy with atypical autism and comorbidities highlights the importance of comprehensive diagnostics and ongoing monitoring conducted by a multidisciplinary team of specialists from various fields. This approach enables the effective identification and targeting of the child's individual needs in areas such as social adaptation, communication, cognitive functions, and motor skills. The integration of therapeutic and educational strategies tailored to the specific needs of the child significantly contributes to his overall development and adaptation. In particular, support for fine motor skills and sensory integration has been shown to be crucial for

improving daily functioning and independence. The study also underscores the role of the family and a strong family background, which are essential for supporting the child's social and emotional development. Active family involvement in both the educational and therapeutic process is indispensable for maximizing the effectiveness of interventions. In terms of practical application, the recommendation is to establish multidisciplinary teams and regularly evaluate and adjust intervention plans in order to flexibly respond to the child's evolving needs. It is likewise essential to provide education and support to families caring for children with similar diagnoses and to utilize visual and structured teaching aids to enhance learning effectiveness and simplify communication with the child. This holistic approach can considerably help in better integrating the child into society and improving his quality of life. The present article is qualitative in nature. Its aim was to highlight a specific case and the related issue of intervention procedures of a multidisciplinary team. In the case of quantitative methods it would be very difficult to have a similar vase sample of children. Thus, from the outset, the article and the qualitative research was directed specifically in the direction of a case study that can specifically and in depth describe the problems associated with working with individuals with PAS.

Recommendations for Practice

Establishment of a Multidisciplinary Team: For children with atypical autism and other developmental disorders, it is recommended to create a multidisciplinary team comprising physicians, therapists, educators, and psychologists. This team will collaborate to develop and update individual therapeutic and educational plans. Regular Evaluation and Adaptation of Interventions: It is crucial to regularly assess the effectiveness of implemented interventions and adapt them to the child's current needs. This should include flexible approaches to education and therapy that respond to changes in the child's behavior and development. Education and Support for Families: Parents and caregivers should have access to professional training and support that will enable them to better understand their children's specific needs and to be more effective partners in their upbringing and therapy. Use of Visual and Structured Teaching Aids: To enhance learning efficiency and facilitate communication with the child, it is recommended to make broader use of visual aids, structured activities, and technologies.

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