



Interventions for ADHD and Intellectual Disabilities: A Case Study

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Abstract

The case study explores the therapeutic interventions and educational strategies used in managing RC, a boy diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) and Intellectual Disabilities (ID). RC, enrolled in Asha School, exhibited hyperactivity, impulsiveness, and difficulties in maintaining focus, complicating his learning and behaviour management. A multi-faceted approach incorporating behavioural therapy, sensory integration activities, and structured routines was implemented to address these concerns. After one year of intervention, RC demonstrated significant improvements in impulse control, focus, task

engagement, and social interactions, underscoring the effectiveness of individualized therapeutic strategies for children with ADHD and ID.

Keywords: *ADHD, Intellectual Disabilities, hyperactivity, impulsivity, behavioural therapy, sensory integration, structured routines*

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is characterized by persistent patterns of inattention, hyperactivity, and impulsivity that interfere with daily life and often make structured environments challenging (American Psychiatric Association, 2013). Intellectual Disabilities (ID), which involves limitations in intellectual functioning and adaptive behaviour, further complicate these challenges by impacting cognitive development and social integration (Schalock, Luckasson, & Tassé, 2021). Children diagnosed with both ADHD and ID face compounded difficulties, with ADHD symptoms intensifying due to cognitive impairments, affecting focus, self-regulation, and academic engagement (Perera, McCarthy, & Courtenay, 2022).

Early, multi-modal interventions combining behavioural therapy, sensory integration, and structured routines have demonstrated efficacy for children with ADHD and ID. Studies indicate that these approaches improve focus, enhance impulse control, and foster adaptive behaviours, especially when customized to address the child's specific needs (Davidson, Moran, & Minnis, 2022).

The current case study focuses on RC, a boy with ADHD and ID, who exhibited significant hyperactivity, impulsiveness, and attention difficulties, all of which hindered his academic and social functioning. The intervention plan developed for RC incorporated

evidence-based practices tailored to his specific needs, highlighting the importance of individualized therapeutic approaches in managing these complex conditions.

Theoretical Framework

The interventions for RC were grounded in theories emphasizing behavioural reinforcement, sensory processing, and observational learning.

Operant Conditioning

B.F. Skinner's operant conditioning, which posits that behaviour is shaped through reinforcement, was central to RC's behavioural therapy (Willner, Rose, & Jahoda, 2013). Positive reinforcement—rewarding desired behaviours like task completion—has shown effectiveness in managing impulsivity in children with ADHD, enhancing behavioural control (Schalock et al., 2021). Consistent rewards for task adherence and impulse control helped RC understand appropriate behaviours, reinforcing his ability to stay focused in class (Creighton Digital Repository, 2022).

Sensory Integration Theory

Jean Ayres' sensory integration theory proposes that sensory processing difficulties, common in children with ADHD and ID, can be regulated through targeted sensory activities (Ayres, 1972). Children with ADHD and ID benefit from sensory experiences like weighted vests and tactile stimulation, which can improve focus and behaviour in structured settings (Ramos, Silva, & Gonçalves, 2023). RC's sensory interventions were tailored to provide calming input, which helped him maintain focus in the classroom (Davidson et al., 2022).

Social Learning Theory

Albert Bandura's social learning theory underscores the importance of learning through observation and imitation. Peer modelling is particularly effective in classrooms, where children with ADHD benefit from observing positive behaviours that they can replicate. For

RC, observing classmates engaged in tasks reinforced appropriate social behaviours, such as waiting his turn and participating in group activities (Journal of the Korean Academy of Child and Adolescent Psychiatry, 2022).

Case Formulation

RC, an 8-year-old boy, was admitted to Asha School with a diagnosis of ADHD and ID. His clinical presentation included significant hyperactivity, impulsiveness, and a short attention span, all of which made it difficult for him to follow classroom instructions or engage in academic tasks. His impulsivity often led to interruptions during lessons, and he had trouble sitting still or remaining focused for extended periods. Additionally, his intellectual disabilities compounded these challenges by affecting his ability to retain information, understand complex instructions, and independently complete tasks.

RC's behaviour posed challenges not only for academic learning but also for social interactions with peers. His frequent interruptions and impulsive actions sometimes led to conflicts with other children, making social integration difficult. Teachers and parents reported that he struggled with self-regulation, often acting out without considering the consequences of his actions. This necessitated a comprehensive therapeutic approach targeting both his cognitive and behavioural symptoms.

Mental Status Examination (MSE)

- **Appearance:** Well-groomed but frequently fidgeting; unable to sit still for extended periods.
- **Behaviour:** Highly hyperactive, frequently moving around the classroom during lessons, often interrupting tasks and conversations.
- **Speech:** Rapid and tangential, frequently deviating from the topic.

- **Cognition:** Poor memory retention and a short attention span; struggles to follow multi-step instructions.
- **Insight and Judgment:** Limited insight into his behaviour; struggles to understand the consequences of impulsive actions.

Ethical Considerations

This case study followed strict ethical guidelines to protect the identity and welfare of the child. Pseudonyms were used to maintain anonymity, and informed consent was obtained from RC's parents before initiating the interventions. Parents were fully briefed on the therapeutic strategies being used and the data collection process. All interventions were in line with ethical standards set by professional psychological associations, with the child's welfare being prioritized at every stage of the intervention.

Therapeutic Approach

The therapeutic interventions implemented for RC addressed both his ADHD symptoms and his intellectual disabilities, focusing on improving his behavioural regulation, attention span, and social interactions.

Behavioural Therapy

Behavioural therapy for RC focused on positive reinforcement, using rewards to encourage adherence to classroom rules and task completion. Research supports that positive reinforcement increases focus and reduces impulsive behaviour in children with ADHD, making it an effective intervention strategy (Schalock et al., 2021; Perera et al., 2022). For RC, immediate rewards for task completion reinforced self-regulation, enabling him to follow classroom routines and reduce disruptive behaviours (American Academy of Pediatrics, 2022).

Visual Schedules

Visual schedules provided RC with a structured routine, reducing reliance on verbal cues and fostering independence. Studies have shown that visual aids reduce anxiety and promote focus in children with developmental disabilities by providing clear expectations. For RC, visual schedules significantly improved task engagement by clarifying transitions and helping him independently navigate his daily activities (Journal of the Korean Academy of Child and Adolescent Psychiatry, 2022).

Physical Activities and Sensory Integration

To address RC's sensory processing needs, physical breaks and sensory integration techniques were incorporated into his routine. Sensory integration interventions help children with ADHD manage hyperactivity and impulsivity, promoting focus in structured settings (Frontiers in Psychiatry, 2023; IAIM Journal of Child Development, 2022). For RC, activities like weighted vests, tactile play, and short physical breaks provided the sensory input necessary to enhance his concentration and reduce hyperactivity during classroom tasks (Schalock et al., 2021; Creighton Digital Repository, 2022).

Structured Routines

Structured routines at home and school provided predictability, reducing impulsive behaviours and supporting RC's ability to anticipate transitions. Consistent routines minimize anxiety and help children with ADHD maintain behavioural control by creating a stable environment. RC's structured routine, reinforced across school and home, gave him a sense of security, supporting his ability to manage daily tasks and adhere to expectations (ResearchGate, 2021).

Parental Involvement

Parental involvement was essential in maintaining RC's therapeutic progress. Studies show that parental reinforcement of therapeutic strategies strengthens behaviour modification techniques in children with ADHD (Willner et al., 2013). RC's parents received training in the behavioral and sensory strategies used in his classroom, allowing them to support his therapeutic progress consistently at home, which contributed to improved self-regulation and behavioural stability (Journal of Attention Disorders, 2022).

Outcome

After a year of targeted intervention, RC demonstrated notable improvements in impulse control, focus, and social interactions. His attention span increased, and impulsive behaviours in social settings decreased significantly. Although hyperactivity was still present, it became manageable through structured sensory breaks and consistent routines. Academically, RC showed moderate progress, particularly in tasks requiring sustained attention, such as reading and multi-step instructions. His social skills also improved, as he learned to control impulsive tendencies and engage appropriately with peers (Tevis & Matson, 2022; Frontiers in Psychiatry, 2021).

Discussion

RC's case demonstrates the benefits of a multi-modal approach for children with ADHD and ID, reinforcing findings in the literature that emphasize comprehensive interventions. Behavioural therapy with positive reinforcement has been widely acknowledged for enhancing focus and reducing impulsivity, confirming RC's improvements in attention and classroom engagement (Schalock et al., 2021; Perera et al., 2022). The use of visual schedules

helped RC manage transitions independently, reducing reliance on prompts, a method particularly beneficial for children with developmental disabilities.

Sensory integration techniques, tailored to address RC's hyperactivity, were essential in regulating his impulsivity. Studies consistently support sensory-based interventions as a way to help children with ADHD manage sensory input, allowing them to maintain focus in structured settings (Ayres, 1972; *Frontiers in Psychiatry*, 2023). RC's structured routine across home and school contributed to his behavioural stability by minimizing unpredictability, a critical component in managing anxiety and impulsive behaviours in children with ADHD and ID (*American Journal of Occupational Therapy*, 2022). Parental involvement further reinforced RC's skills, bridging the therapeutic gap between school and home and enabling consistent behavioural improvements (Willner et al., 2013; ResearchGate, 2021).

This case study emphasizes the importance of personalized, evidence-based interventions for children with complex needs like RC. The positive outcomes experienced by RC affirm that combining behaviour modification, sensory integration, and structured routines provides a holistic approach that addresses the multifaceted challenges of ADHD and ID.

Conclusion

RC's progress highlights the critical role of individualized therapeutic interventions in addressing ADHD and Intellectual Disabilities. By employing a structured combination of behavioural therapy, visual schedules, sensory integration, and consistent routines, RC exhibited substantial enhancements in attention, impulse control, and social interaction, contributing to overall improvements in cognitive, behavioural, and social functioning. This case study demonstrates that early, tailored intervention strategies are essential in fostering positive developmental outcomes for children with complex needs. Moreover, the synergy of these interventions not only addressed RC's immediate challenges but also established a robust

foundation for his continued success in academic and social domains, underscoring the adaptability and effectiveness of well-structured therapeutic approaches..

Future Implications

Future therapeutic goals for RC should prioritize building executive functioning skills and enhancing self-regulation to support greater independence in social and academic contexts. As RC matures, targeted interventions focusing on memory retention, task persistence, and problem-solving will be essential for his long-term success, especially in academic settings where self-management is vital (Journal of Attention Disorders, 2022; International Journal of Disability, Development and Education, 2021). Consistent sensory and behavioural strategies will help RC develop autonomy, enabling him to participate more fully in group and classroom settings (Creighton Digital Repository, 2022; American Academy of Pediatrics, 2022).

This case study provides valuable insights for future research into interventions for children with ADHD and ID. It highlights the effectiveness of combining behavioural, sensory, and educational strategies to address both cognitive and behavioural symptoms. These findings can contribute to the broader literature by reinforcing the importance of individualized, multi-modal treatment plans in managing complex cases of ADHD and ID. Researchers can use this case as a reference point for developing new therapeutic interventions and exploring the long-term benefits of structured therapeutic approaches for children with dual diagnoses.

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