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Transforming Learning and Behavior through Integrated Interventions: A Mild ID with ADHD Case Report

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ABSTRACT :

This case study documents the clinical and functional progress of a 7-year-old male child, Asim, diagnosed with mild Intellectual Disability (ID) and Attention Deficit Hyperactivity Disorder (ADHD). Baseline assessments using the Seguin Form Board Test (SFBT), Vineland Social Maturity Scale (VSMS), Basic MR evaluation, and Functional Assessment Checklist for Programming (FACP) indicated severe academic delays, deficits in social and personal skills, and maladaptive behavioral patterns. Observations revealed hyperactivity, aggression, impulsivity, poor attention, repetitive behaviors, and partial dependence in daily living activities.

An 8-month multidisciplinary intervention program—including special education, ADL training, behavioral management, occupational therapy, social skills training, parent counseling, and screen time regulation—was implemented. Post-intervention outcomes demonstrated marked improvements in attention, sitting tolerance, academic performance, behavioral regulation, and adaptive functioning.

Keywords: Mild Intellectual Disability, ADHD, behavioral therapy, adaptive skills, case study, special education.

Introduction

Intellectual Disability (ID) is defined by significant limitations in intellectual functioning and adaptive behavior, originating before the age of 18 (American Psychiatric Association, 2013). Mild ID often permits partial independence but presents substantial challenges in academic achievement and adaptive skill acquisition. Attention Deficit Hyperactivity Disorder (ADHD), characterized by pervasive inattention, hyperactivity, and impulsivity, frequently co-occurs with ID, amplifying difficulties in learning, behavior regulation, and social functioning (Matson & Goldin, 2014).
The co-occurrence of mild ID and ADHD is associated with more severe impairments than either condition alone, requiring a structured, multidisciplinary intervention approach. Evidence-based management combines educational support, behavioral therapy, occupational therapy, and active caregiver participation to maximize developmental potential (Barkley, 2015).
This case report describes the baseline characteristics, therapeutic approach, and measurable outcomes in a 7-year-old boy diagnosed with mild ID and ADHD, illustrating the efficacy of integrated interventions in enhancing academic performance, adaptive functioning, and behavioral regulation.

Methodology

Participant Details

- Name: Asim
- Age: 7 years
- Gender: Male
- Primary Informant: Father
- Diagnosis: Mild Intellectual Disability with ADHD

Birth and Developmental History

- Full-term delivery, birth cry present
- Second born
- Normal gross motor and language milestones
- No perinatal complications
- Experienced 2–3 seizure episodes at age 2

Assessment Tools and Baseline Findings

Tool	Score	Interpretation
SFBT	IQ 58.2	Mild Intellectual Disability
VSMS	Borderline adaptive functioning	Deficits in personal and social domains
Basic MR	Severe behavioral challenges	Aggressive, hyperactive, repetitive behaviors
FACP	Academics: 0%	No literacy/numeracy skills

Clinical Observations (Baseline)

Direct observations during assessment sessions, along with information from the father, revealed a combination of behavioral, cognitive, and sensory concerns consistent with mild Intellectual Disability and ADHD. The following features were consistently noted:

1. ***Attention and Concentration:*** ○ Marked inattention; unable to sustain focus for more than 1–2 minutes without redirection. ○ Easily distracted by environmental stimuli (sounds, movement, objects). ○ Difficulty completing even simple structured tasks without prompts.
2. ***Behavioral Regulation:*** ○ Frequent hyperactivity—constantly moving, tapping, fidgeting, or shifting positions. ○ Aggressive responses toward objects and occasionally towards people when demands were placed. ○ Impulsivity—blurting out irrelevant words, grabbing items without permission, or acting without considering consequences.
    - ○ Repetitive and purposeless movements, including fixation on specific toys/objects.
3. ***Social Interaction:*** ○ Poor eye contact, inconsistent gaze during communication.
    - ○ Limited initiation of interaction with peers or adults. ○ Lack of appropriate response to verbal and non-verbal social cues.
4. ***Communication:*** ○ Delayed response to questions; often required repetition of instructions. ○ Episodes of self-talk during play or while alone, unrelated to the ongoing task.
5. ***Cognitive and Academic Functioning:*** ○ No recognition of letters, numbers, colors, or common objects at baseline.
    - ○ Difficulty understanding sequencing and categorization tasks.
6. ***Adaptive Functioning:*** ○ Partially dependent in Activities of Daily Living (ADLs) such as dressing, grooming, and toileting. ○ Required constant supervision for safety during mobility and play.
7. ***Emotional and Sensory Responses:*** ○ Displayed temper tantrums and oppositional behaviors when routines were interrupted or demands increased. ○ Phobic responses to certain noises or situations. ○ Continuous eye blinking, possibly linked to sensory overload or habit.

Intervention Plan

Following the baseline assessments and clinical observations, a comprehensive, multidisciplinary intervention plan was developed for Asim. The objective was to address his cognitive, behavioral, social, and adaptive deficits through structured therapies, delivered in both clinical and home environments. The plan integrated special education, occupational therapy, ADL training, behavioral management, social skills therapy, parental counseling, and environmental modifications.

Special Education

Given Asim's severe academic delays (FACP Academics: 0%), individualized educational sessions were designed focusing on pre-literacy, numeracy, and cognitive skill development. Frequency: 5 sessions/week (45 minutes/session)

Methodology:

- Visual and tactile learning materials (flashcards, number boards, color charts)
- Task breakdown into small, achievable steps
- Verbal prompts and gradual fading to encourage independent response
- Use of errorless learning and positive reinforcement for correct responses

Focus Areas:

- Identification of letters, numbers, colors, and shapes
- Early reading and writing skills
- Matching, sorting, and categorizing objects
- Basic counting and simple arithmetic

Activities of Daily Living (ADL) Training

Partial dependence in personal skills (40%) required structured ADL training to promote independence. Frequency: Daily practice (both therapy center and home)

Methodology:

- Task analysis for breaking down complex activities (e.g., dressing into step-by-step sequence)
- Visual schedules and pictorial cues for hygiene routines
- Repetition with consistent prompts until the child could perform independently

Focus Areas:

- Grooming (hair combing, face washing)
- Dressing and undressing independently
- Self-feeding with spoon and cup
- Toilet training and hygiene maintenance

Behavioral Management

Asim's aggressive, impulsive, and hyperactive behaviors required a structured behavioral modification program. Frequency: Continuous reinforcement across all settings

Methodology:

- Positive Behavior Support (PBS) framework
- Token economy for desired behaviors (e.g., earning stickers for sitting tolerance)
- First-Then visual cards to prepare for task transitions
- Redirection and distraction to manage repetitive and unnecessary behaviors
- Anger management through "calm corner" strategies

Goals:

- Reduce aggressive outbursts and temper tantrums
- Increase compliance with instructions
- Improve impulse control and waiting tolerance

Occupational Therapy (OT)

OT targeted sensory regulation, fine and gross motor skills, and sitting tolerance.
Frequency: 4 sessions/week (40 minutes/session)

Methodology:

- Sensory integration therapy (swing therapy, weighted blankets, textured surfaces)
- Fine motor activities (pegboards, threading beads, clay modeling)
- Proprioceptive and vestibular exercises to reduce hyperactivity
- Structured table activities to extend attention span

Focus Areas:

- Improve hand-eye coordination
- Enhance posture and seating endurance
- Regulate sensory responses to reduce distractibility

Social Skills Therapy

Due to deficits in peer interaction (FACP Social Skills: 25%), targeted social skills sessions were incorporated. Frequency: 3 sessions/week (30 minutes/session)

Methodology:

- Role-play scenarios for greeting, turn-taking, and sharing
- Group play activities to encourage cooperative behavior
- Emotion flashcards and social stories to build empathy and recognition skills
- Peer modeling in structured settings

Focus Areas:

- Initiating and maintaining interaction with peers

- Participating in group activities
- Responding to social cues appropriately

Parent Counseling and Training

Active caregiver involvement was prioritized to ensure continuity of interventions at home. Frequency: Weekly counseling and training sessions

Methodology:

- Educating parents on using reinforcement techniques
- Demonstrations of ADL training methods and behavioral strategies
- Guidance on structuring the home environment to minimize distractions
- Stress management and emotional support for the family

Focus:

- Consistency in applying strategies at home
- Monitoring progress and adjusting activities
- Building parent confidence in managing behaviors

Screen Time Reduction

Screen exposure was identified as a factor exacerbating attention deficits.

Plan:

- Screen time reduced to 15 minutes/day of supervised educational content
- Replacement with interactive games, storytelling, and outdoor play
- Daily reading sessions with parent participation

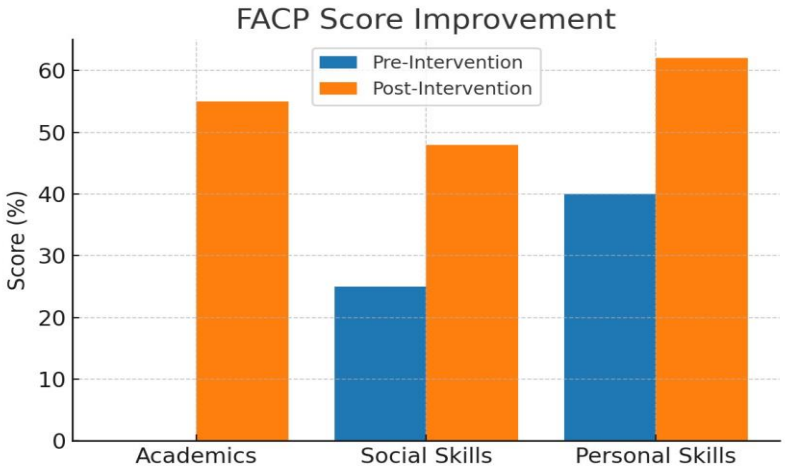
Results and Observations (Post-Intervention)

After 8 months of the multidisciplinary intervention plan, Asim demonstrated measurable progress across academic, behavioral, social, and adaptive domains. The improvements were recorded through follow-up FACP, VSMS, and clinical observation, along with feedback from his father and therapists.

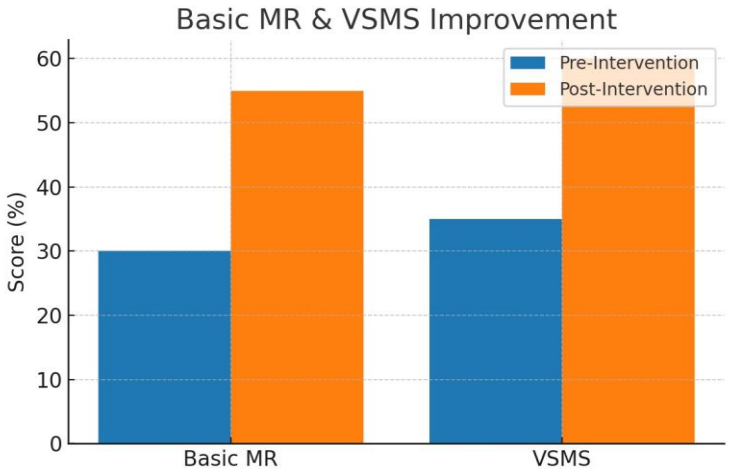
1. Academic Skills: ○ Marked improvement from 0% to 55% in the FACP Academic domain.
    - ○ Able to read and write simple words and sentences, identify primary colors, shapes, and common objects with minimal verbal prompts.
    - ○ Demonstrated basic numeracy, including counting up to 20 and performing simple addition tasks with guidance.
2. Social Skills: ○ Improved from 25% to 48% in FACP Social Skills.
    - ○ Initiates greetings and can engage in short exchanges with peers.
    - ○ Participates in small group activities, shows increased turn-taking and cooperation.
3. Personal Skills (ADLs): ○ Increased from 40% to 62% in FACP Personal Skills.
    - ○ Independently dresses and grooms with minimal supervision.
    - ○ More consistent in toilet training and hygiene routines.
4. Behavioral Regulation: ○ Significant reduction in aggression and temper tantrums. ○ Sitting tolerance increased from less than 2 minutes to 10–15 minutes during structured activities. ○ Impulsivity and hyperactivity are now manageable with occasional prompts.
5. Communication: ○ Improved verbal responsiveness; responds to most instructions after one prompt.
    - ○ Reduction in irrelevant self-talk during sessions.
6. Attention and Concentration: ○ Sustains focus for longer durations in structured activities. ○ Less distractible during academic and social skill training.
7. Other Notable Changes: ○ Eye contact is now consistent in one-to-one and small group settings. ○ Reduced repetitive and purposeless behaviors. ○ No recurrence of phobic reactions observed in therapy sessions.

8. Domain	Baseline	Post-Intervention
Academics	0%	55%
Social Skills	25%	48%
Personal Skills	40%	62%
Behavior	Aggressive, hyperactive, unmanageable	Controlled, manageable
Sitting Tolerance	< 2 minutes	10–15 minutes

Eye Contact	Poor	Consistent
ADLs	Partially independent	More independent
Communication	Delayed response	Responds with prompts



This graph compares Asim's pre-intervention and post-intervention scores across three domains of the Functional Assessment Checklist for Programming (FACP): Academics, Social Skills, and Personal Skills. The post-intervention data shows substantial progress in all domains, with the most notable improvement in Academics (from 0% to 55%).



This graph illustrates the improvement in Asim's overall functional and adaptive abilities, as measured by the Basic MR evaluation and the Vineland Social Maturity Scale (VSMS). Both measures show a marked increase post-intervention, indicating enhanced adaptive behavior and reduced behavioral challenges.

Discussion

This case demonstrates that a structured, multidisciplinary intervention can yield substantial improvements in academic skills, social functioning, and behavioral regulation for children with mild ID and ADHD. The progress in adaptive functioning was attributed to consistent therapy delivery, active parental engagement, and the use of visual and behavioral supports.

These results are consistent with studies emphasizing that integrated therapeutic approaches, tailored to the child's needs, are effective in enhancing learning and self-help skills while reducing maladaptive behaviors in children with neurodevelopmental disorders (Matson & Goldin, 2014; Barkley, 2015).

Conclusion

The clinical journey of Asim demonstrates that children with mild Intellectual Disability and ADHD can achieve substantial developmental gains when provided with a structured, individualized, and multidisciplinary intervention program. The integration of special education, occupational therapy, ADL training, behavioral modification, and parental involvement produced measurable improvements in academic achievement, adaptive functioning, and behavioral regulation over an eight-month period.

While prompts and repetition remain necessary for certain tasks, Asim's transformation from a highly distractible, partially dependent child to one who actively participates in learning and daily activities illustrates the long-term potential of such approaches. The findings from this case advocate for early identification, comprehensive assessment, and coordinated therapeutic efforts, ensuring that intervention plans are tailored to the child's unique cognitive and behavioral profile.

Future research and clinical practice should continue to focus on individualized, holistic intervention models for children with co-occurring developmental conditions, as these offer the greatest promise for functional independence and improved quality of life.

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