

Unleashing Potential: Transformative Impact of Behavior Analysis on ADHD Management in Pakistani Children

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Abstract

In the early years of childhood, certain psychological disorders can significantly impact brain function and alter neurological development, resulting in difficulties in cognitive, emotional, and social functioning. These conditions are collectively labeled as neurodevelopmental disorders. One of the most common among them is attention deficit hyperactivity disorder (ADHD) (Sayal et al., 2018). The present case study reports on an eight-year-old boy diagnosed with ADHD, who was admitted to a special education center in Sialkot for the management of behavioral issues. The Applied Behavior Analysis (ABA) technique was implemented across 15 intervention sessions. The child's behavior was assessed both before and after the intervention using a standardized behavior rating scale. Findings revealed a significant reduction in hyperactivity, impulsivity, and inattentiveness, as well as an increase in task engagement and social responsiveness. Baseline charts and post-intervention scores demonstrated marked improvement in overall behavioral functioning. These results support the efficacy of ABA in managing ADHD symptoms. However, the study also suggests that combining ABA with other therapeutic strategies, such as parent training and cognitive-behavioral techniques, may further enhance treatment outcomes and accelerate behavioral improvements.

Keywords: ADHD, Neurodevelopmental, ABA, Behaviour Rating Scale, Autism.

Introduction

Attention deficit hyper activity Disorder characterised with persistent pattern of inattention and hyperactivity that inhibits with normal development and as well as better functioning. It starts in early developmental period. In population as compared to females, in males it is more common, in adult ratio 5% and in children around 2.5%, over the past two decades there have been 19 community-based studies offering estimates of prevalence ranging from 2% to 17%. (Scahill, & Schwab-Stone, 2000). For diagnosing ADHD some feature must be present at least in two settings as symptoms of hyperactivity, impulsivity and inattention at school, at home, and at working place (APA, 1980).

In Neurodevelopmental disorder, there is impaired growth of brain and central nervous system. The condition affects the emotion, learning ability, self-control and memory which unfold as the individual develops and grows. The exact etiology of neurodevelopmental disorders is not fully known, perhaps both genetic and environmental factors are involved in its etiology (Dilip et al., 2013). In children the most commonly observed neurodevelopmental disorders are (ADHD)

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hyperactivity disorder in attention and (ASD) autism spectrum disorder spreading in children (Rowland, 2015), ADHD is considered when child showed symptoms of impulsivity-hyperactivity and unable to put attention on common things (Polanczyk et al., 2007).

There are various subtypes of ADHD which are based on the predominance of various components of ADHD i.e. inattention, hyperactivity-impulsivity or both of them. In DSM-5 the stated occurrence of attention deficit hyper activity disorder in children and adults is about 5% and 2.5% separately and is more common in boys as compared to the girls (Salari et al., 2023).

ADHD was first time described by a British pediatrician, Sir George Still, in 1902, who noted some children were unable to control their behavior like other children, were more aggressive, defiant, and resisted to discipline. (Palmer, & Finger, 2001). These children were still intelligent but had problems in concentrating in constant attention and unable to learn from the results of their actions applied behavior analysis are best practices which are used to manage specifically autistic child. For planning and applying professional development actions, Borko in (2004) claimed that planners should involve more compound analysis of consequences rather than only using single strategy to manage behavioral issues he recommended teacher based knowledge practices, teacher thinking will be changed, and ultimately it will influence on pupil learning (Nasir& Akhtar, 2025). To attain this purpose some work shop can be planned (Darling-Hammond, 2005) and same recommended Irish (Banks & Smyth, 2011) schools. Although the eventual goal was to enhance professional development for educators' which also provide great opportunity in learning outcomes for their students they provide evidence based data in their studies to improve autistic symptoms in children (Speck & Knipe, 2005).

Previous researches reveals that one in out of 110 youngsters suffer from autistic spectrum disorder in the advanced countries. A research study provides prevalence rate 0.9/1000 and with the highest rate of autistic spectrum disorder occurrence specifically in rural areas of India. In literature it was reported about 80 percent of participants like psychiatrist, physicians and psychologist found difficulties to diagnosed autism at specific time (Pellow, 2011).

Although there is no validate data that provide exact prevalence of this disorder in Pakistan its more than 2.4% reported in some studies the main reason is the un- availability of awareness programs regarding autism and lack of interest, neglecting behavior of parents are observed in developing countries including Pakistan (Akhtar, 2024). One study conducted in Karachi Shifa international hospital (Pakistan) found 44%, they reported that more than half general practitioner had never heard about what is autistic spectrum disorder for managing the autism. occupational therapy (OT) mostly used to help individuals for achieving and maintained confidence for the development of self-care in all areas of their life. Occupational therapy helps to make individual skillful, independent and satisfied with life. All kinds of behavior modification techniques make individual to do his daily activities without help of any one as dressing, combing and personal care (Visser et al.,2010).

Applied behavior analysis is also called as behavior engineering, which is scientific ways to treat any disturb behavior through operant conditioning. Attention deficit hyperactivity disorder is linked with further mental disorder and neurodevelopmental disorder that might cause further other impairment, particularly in current society (Tarver & Sayal, 2014).

The exact causes of Attention deficit hyperactivity disorder are unknown. one of the most common caused are genetic issues that play an important role in Attention deficit hyper activity disorder have a tendency to run in families and has heritability rate almost 74 percent others environmental factors, toxin and issues during pregnancy caused brain damaged (Thapar et al., 2013).

Methodology

Case Report

Current case report is about eight years boy he came with his mother and presented with behavior disturbances as his mother complained that he is unable to communicate, hyperactive, irritated and unable to response. She also informed that he climbed over the roof and walls without any hesitation. And wonder here and there in spite of restrictions from the parents. He is over talkative and unable to focus on things and even in communications. He also added that there is no parental history of any medical and psychological illness. Client was born at home with normal delivery and no having previous medical and surgical history. Semi structured interview conducted with parents, and child on mental status examination, client history, presenting complains and according to diagnostic and statistical manual of mental disorder the client diagnosed with attention deficit hyperactivity disorder.

Management Plan

After the complete assessment of the client current functioning level two types of goals (short term & long term) were identified. Short term goals were as to reduce contributing factors of problem and to identify the strength of the client reduce the client triggering factor and to helping him to perform his daily activities without mother help and for long term to develop essential social skills and to enhance the ability to build and maintain relationships.

Therapeutic Intervention

Following therapies planned with the help of parents and teacher

- 1) S.M.A.R.T Social
- 2) Social Skill training
- 3) Activity schedule
- 4) Daily function record chart
- 5) Family counseling

Different techniques of behavior therapy analysis were planned. For achieving that goals schedule was formulated in fifteen sessions and for the management of client behavior initially targeted daily issues regarding combing, dressing, brushing and personal cleanings. Parents, teacher and psychotherapist combine work for it to solve the child issues and archive the goals (Akhtar.2024). When positive reinforcement is used on a youngster to manage his behavior (worksheet #1), the child is shown appreciation for engaging in the desired behavior. When he was able to maintain focus and finish a work, Prompting and Fading, preparation was done to fully address the objective issue. However, the therapist, parents, and teacher all worked on the same problem at the same time. Task Analysis, (worksheet- 2) Activity Schedule, (figure 3), Social skill training implemented with worksheets over the course of 15 sessions, and client behavior management were all done in the same manner.

Figure 1: Worksheet 1 shows the child liking and disliking things

<u>Functional Behavior Assessment</u>	
	Name _____
	Date _____
	Name of Assessor _____
Describe the behavior: _____ _____ _____ _____	
When and where does the behavior occur most often? (Who is present?) _____ _____ _____	
How often does the behavior occur? _____ _____	
How long does the behavior usually last? _____ _____	
As a result of the behavior, what are the consequences to teachers, peers or the environment? _____ _____ _____	
Results of Previous Interventions (based on data collected): _____ _____ _____ _____	
http://www.worksheetpal.com #	

Figure 2: Worksheet 2; shows task analysis activities

How you will be successful today

I was **successful** today when I

.

THIS IS ME BEING SUCCESSFUL

Figure 3: Work sheet 3 Activity Chart J.S .Beck (2011) by Judith Beck.

	Monday	Tuesday.	Wed.	Thursday.	Friday	Saturday.	Sunday.
Morning	6-7						
	7-8						
	8-9						
	9-10						
	10-11						
Afternoon	11-12						
	12-1						
	1-2						
	2-3						

Results and Discussion

Attention deficit hyper activity disorder can be manageable with proper application of ABA. Results of current study provide evidences that (SMART) specific, Measurable, Action-Oriented, Realistic, and Time-bound approach is best strategy for the management of different psychological issues specially in children. SMART goals are a useful treatment method for mental health difficulties and are often used in Cognitive Behavioral Therapy (Harper-Hill et al., 2021).

According to global burden of disease the world-wide ADHD 5.75 and CD with ADHD a further 491,500, respectively. (Erskine et al., 2014) Previously, drugs that stimulated activity were used to treat attention deficit hyperactivity disorder. According to a thorough examination of the prevalence rate, attention deficit hyperactivity disorder affects 53% of people worldwide annually. (Scandurra, et al., 2019).

Moreover, ADHD is associated with deficits in executive functioning, such as working memory, inhibitory control, and self-regulation (Barkley, 1997). ABA helps by breaking down complex tasks into smaller, manageable steps and providing immediate feedback, which supports the child's ability to plan, focus, and complete tasks successfully thereby compensating for neurological limitations.

In summary, ABA is theoretically justified through behaviorist principles and cognitive-behavioral mechanisms. It provides a structured, evidence-based framework for reshaping behavior and promoting adaptive functioning in children with ADHD.

In the current study, Psychotherapist used various psychotherapy techniques on a child to control his abnormal behavior. Psychotherapies play a very essential role in the management of abnormal behaviors. As in earlier studies for the management of ADHD, a comprehensive set of specific interventions were developed to change the social and physical environment in order to change the behaviors, and a substantial difference was seen in his behavior (Cherry et al., 2015). One study reported that 34% children diagnosed with ADHD were treated with applied behavior analysis. (Syed & Hussein, 2006). Parents' psych education played a significant impact in children's behavior improvement as well, which cannot be refuted. Counseling and psycho education were offered in a recent case study for the quick and ongoing rehabilitation of children, not just to the parents but also to the child's teacher. Another research finding demonstrated the importance of the structured environment (school) and parental psycho education in managing child behavior (Lange et al., 2010). Behavior modification through contingency management techniques, such as

positive reinforcement, has been demonstrated to be very successful and produce greater improvement in ADHD. Behavioral rating scale showed a big difference after the management of child. Concluding the case, it can be said that parents are the first role model in the life of children they can provide healthy home environment for preventing their child from many mental health issues (Akhtar et al., 2022).

Conclusion

Even if the child is not taking medication for attention deficit hyperactivity disorder, it can be controlled by utilizing behavior approaches like SMART, positive reinforcement. Task analysis, social skill instruction, prompting and fading, and family psycho- education.

The study on the transformative impact of behavior analysis on ADHD management in Pakistani children holds significant implications for both clinical practice and educational interventions in the region. Firstly, the findings underscore the importance of tailored and culturally sensitive approaches in addressing ADHD symptoms among Pakistani children. Considering the unique sociocultural context, healthcare professionals and educators should collaborate to develop interventions that align with local values and norms. Moreover, the study emphasizes the need for increased awareness and acceptance of behavior analysis techniques within the Pakistani healthcare system and educational institutions. This calls for targeted training programs for healthcare professionals, teachers, and parents to enhance their understanding and implementation of behavior analysis strategies.

In terms of recommendations, it is crucial to establish interdisciplinary teams comprising psychologists, educators, and healthcare providers to collaboratively address ADHD in Pakistani children. These teams can work together to design and implement comprehensive intervention plans that incorporate behavior analysis techniques. Additionally, public health campaigns should be initiated to destigmatize ADHD and promote a more inclusive understanding of neurodevelopmental disorders. Schools can play a pivotal role in this by adopting supportive policies and creating environments that accommodate the diverse needs of children with ADHD. Furthermore, future research should explore the long-term effectiveness of behavior analysis interventions in the Pakistani context and evaluate their impact on academic performance, social integration, and overall well-being. Ultimately, by integrating behavior analysis into the management of ADHD in Pakistani children, a more holistic and culturally relevant approach can be established, fostering better outcomes for affected individuals and promoting a more inclusive society, actions and recommendations.

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