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THE IMPACT OF APPLIED BEHAVIOR ANALYSIS ON BASIC LEARNING AND ACADEMIC SKILLS IN CHILDREN WITH AUTISM: AN INTERVENTION STUDY

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Abstract
Autism Spectrum Disorder is a neurodevelopment disorder that has mental and emotional consequences that affect the person's ability to interact with others socially and also exhibit interest in restricted repetitive behaviors. The term spectrum is used as a generalization of the wide range of symptoms, ability levels as well as behaviors associated with autism spectrum disorder. The study aimed to estimate and investigate the significant impact of applied behavior analysis based on learning and academic skills in children with autism spectrum disorder. A purposive sampling technique was used to select a sample of 70 participant's ages 6 to 12 years and diagnosed with an autism spectrum disorder. Pre- and Post-assessment techniques were used. The results obtained in post assessment were improved as compared to the results of pre-assessment. The study strongly supported the conclusion respecting the effectiveness of applied behavior analysis interventions concerning the academic and fundamental learning competencies of children with autism spectrum disorder. This was evident when checking out the correlation between the domains of therapeutic and educational goals and applied behavior analysis as it is widely applicable for therapeutic and educational purposes.
Keywords: Applied Behavior Analysis, Basic Learning, Academic Skills, Autism Spectrum Disorder.

Introduction
Autism Spectrum Disorder (ASD) is described as a disorder of neurodevelopment that can lead to socia-emotional difficulties which affect one's ability to socialize and engage in social activities while preferring to undertake repetitive tasks and activities. The spectrum is indicative of the diverse array of signs, skills, and behavioral traits that relate to ASD. The description of the diagnosis as a spectrum makes room for various interpretations of the numerous signs as well as the skills and behaviors associated with the disorder (American Psychiatric Association, 2013). Nowadays, autism spectrum disorder is more frequent and has become a global concern for health. New data analysis shows that 1 in every 35 children in the US are currently dealing with autism spectrum disorder. Even so, the prevalence can be different among various groups and in different populations and regions. Not only the United States but also the whole world follows the status of observance of autism spectrum disorder if studies are being conducted worldwide. Many children on the autism spectrum struggle with skills such as talking, interacting with others and adapting to new situations. It becomes tougher for children with autism spectrum disorder in schools because many teaching styles may not address their personal needs (Zablotsky et al., 2019).

Since children with autism struggle to communicate, they may not react when someone calls them by name. Children with autism avoid hugging and usually want to play alone by themselves. They do not smile or frown and find it hard to maintain eye contact. They can't start a conversation because they can't express themselves through sentences. They often talk differently, with unusual tones and may repeat the same phrases or words again and again, usually without realizing. Children with autism are usually seen shaking, flapping their hands, gazing, making repetitive sounds or moving their head back and forth. Because these stereotypical activities are often seen as repetitive, useless and self-stimulating (Rababa & Ayasrah, 2024). Stereotypical behavior or motor stereotyping, is a type of neurological disorder that reduces a child's ability to control their movements (Barry et al., 2011). They might happen a few seconds or several minutes at a time during the day. Besides, when people are excited, exhausted, stressed or bored, they often display rhythmic, steady and mostly meaningless movements. When someone with autism uses echolocation, they say the same words or phrases

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they heard recently or in the past to communicate with others. If the problem isn't resolved soon enough, it can turn into a common vocal mannerism. So, when we focus on kinetic behaviors, hand flapping and body shaking or moving fingers in front of their face, can help us tell children with autism apart from others. They can make repeated actions with their bodies that communicate 'yes' or 'no,' sometimes involving head motions from up and down, to side to side or shoulder from shoulder. During eye gazing, people may nod their heads, move their hands or feet or do these things together (Girianelli et al., 2023).

Prior Research

Importance of Applied Behavior Analysis

Applied Behavior Analysis treatment plans work as integral support for children with Autism Spectrum Disorder. ABA employs the best strategies that have learning and behavioral improvement at the core of fostering meaningful social change. Out of many interventions that exist, ABA is the best known for helping children with ASD master vital skills required for success in learning and other life activities. With respect to communication, socialization skills, adaptive learning, and self-regulation, ABA has also shown remarkable results with children with ASD due to substantial lags relative to peers. To fully engage in the social and classroom environment, these children need explicit guidance and scaffolds geared to their developmental needs. Results have demonstrated that these interventions consistently yield positive results, especially when started early and tailored to the specific child. ABA helps mark the childs adjustment to the school routine, peer interaction, self help skills, and self-initiated independent activities. This not only fosters the child's success in academics, life, and cohesively functioning within a society, but also enhances the child's long-term quality of life and overall development. Similarly, Through ABA programs, educators can broaden the scope of educational inclusion and nurturing attitudes and strategies that support children with various behavioral challenges (Leaf et al., 2016).

Most notably, the efficacy of ABA is most marked during the preschool years. This stage is termed as one of the most significant periods for learning and development in a child's life and thus is the best suited for interventions. The greater adaptability of the brain in these early years, termed as increased plasticity, works best with structured programs such as ABA. Therefore, preschool aged children tend to improve dramatically with the help of ABA therapy in undergoing the developmental milestones of speech, social interaction, and intellect. Other researchers have highlighted the improvement in adaptive behavior and the reduction in maladaptive behavior in children following early ABA intervention (Eldevik et al., 2009). In addition, ABA strategies help establish and aid children in coping with classroom norms and routines. Another important aspect of applying ABA is the active participation of parents, as constant reward at home helps in retention and transfer of skills learned (Schreibman et al., 2015).

Both typically developing children and children with autism have been studied in regard to the concept of a "critical period" in early development. This period marks when the brain is the most plastic and open to learning. Implementing strategies like ABA during this phase can result in positive developmental changes. Within school settings, Entwisle and Alexander (1989), highlight early exposure to lesson mastery as a catalyst for success, and similar approaches have been adopted in ABA for children with autism. As with most other things in life, children benefit a great deal from early intervention, which is why ABA focuses on skill mastery and fostered instruction through reinforcement and generalization during the critical period. This enhances outcomes in adaptive behavior, emotional self-regulation, and social communication.

Dawson and colleagues (2010) advocate for the effectiveness of early ABA interventions such as the Early Start Denver Model (ESDM) which implements ABA principles

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into naturalistic teaching settings. These interventions were found to increase IQ, language skills, and adaptive functioning. These results, while strengthening the argument for early intervention, prove that modifying the developmental trajectory of children diagnosed with ASD can be effectively supported through ABA.

A number of studies have reaffirmed the effectiveness of ABA. For example, Smith et al. (2000) showed that children receiving ABA interventions into counseling were described as making reasonable improvements in functional intelligence and in expressive and receptive language. Lovaas (1987) demonstrated that through the application of intensive early behavioral intervention, close to half of the children who participated in the study showed significant progress. This was the first of Lovaas' work. Other authors, like Makrygianni et al. (2018), also noted the effect of ABA on improvement in the communication skills, daily living skills, and social interactions of children diagnosed with ASD. All these powerful findings advocate the notion that ABA is a highly credible method of intervention, probably one of the strongest in the field of empirical learning evidence.

In a systematic review, Eldevik et al. (2009) examined 34 studies that implemented ABA's early intensive behavioral interventions (EIBI) and found that all of them reported positive impacts on autism's intellectual and self-help skill development. Wong et al. (2015) also reported that discrete trial training, pivotal response training, and naturalistic developmental behavioral interventions advanced the development of children with ASD the most, alongside other ABA practices.

Method

Research Design

In this study, the researchers used a pre post intervention research design to investigate the impact of applied behavior analysis intervention on basic learning and academic skills of children diagnosed with autism spectrum disorder.

Sample

The current study started in June 2024 whereas it ended in December 2024. The total number of participants selected for the conduction of this study was 78. The interventions were implemented on these 78 participants. The interventions were applied in five centers. Amongst these 78 participants, two discontinued the session moved to other therapy center; five discontinued the sessions due to personal family issues and one family moved abroad. Hence, the remaining 70 participants received the interventions over 6 months. The final study sample between the ages range 6 to 12 years diagnosed with autism spectrum disorder, recruited from autism centers and clinics through purposive sampling technique. The pre and post-assessment of these participants was conducted and the results were concluded. Informed consents were obtained from parents or legal guardians, and permission was taken from administration of autism center and clinics before the study started. The Table 1 consists of sample demographics.

Table 1

Descriptive Statistics of Demographic Variables (N=70)

Variables	M(SD)	f (%)
Gender		
Boys		51(72.9%)
Girls		19(227.1%)
Age (6-12 years)	8.49(1.52)	

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No of sibling		
1st		3(9.7%)
2nd		12(387%)
3rd		13(41.9%)
Last		3(9.7%)
Birth order		
1st		32(45.7%)
2nd		28(40.0%)
3rd		8(11.4%)
Last		4(2.9%)
Sibling diagnosed with ASD		
Yes		4(5.7%)
No		66(94.3%)
Father's age(31-55 years)	42.49(5.08)	
Mother's age (27-50 years)	38.73(4.38)	
Child live with		
Mother (father live abroad)		13(15.7%)
Both		57(84.3%)
Family system		
Joint		25(35.7%)
Nuclear		45(64.3%)

Note. M=Mean; SD=Standard Deviation; f= Frequency

Assessment Measures

The assessment included the use of a demographic sheet, the Childhood Autism Rating Scale, the Assessment of Basic Language and Learning Skills Protocol and Applied Behavior Analysis Intervention. When the Departmental Advisory Committee of the university agreed, a suitable plan for the participants was made for 6 months. For 6 months, the Applied Behavior Analysis was carried out. Before the intervention started, the team measured what the participants could do in school to establish their baseline. After 6 months of Applied Behavior Analysis, we performed another set of assessments on all the protocols.

Childhood Autism Rating Scale

The Childhood Autism Rating Scale (CARS) is a critical tool in an autism spectrum disorder assessment since it allows ascertainment of distinctive qualities and severity of the disorder through direct observation (Schopler et al., 2010). CARS was developed with the Autism Behavior Checklist by Schopler, Reichler, and Renner in 1988 and has 15 items that capture the child's responses to particular behaviors. They include responses to sound, light and touch; motor skills; emotional reactions and interactions; and communication and social skills. Each item is rated on a scale of 1-4 (where 1 is within normal limits and 4 being severely abnormal), and the total score indicates whether the autism severity is mild, moderate, or severe

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(Schopler et al., 1988). Its simplicity makes it a favorites among assessors, and CARS is appropriate for children aged two years and older. The devise aids therapists, clinicians, and educators in assessing the developmental areas comprehensively. In this assignment, CARS was employed to observe the participant's symptoms and ascertain the severity of the condition.

The Assessment of Basic Language and Learning Skills Protocol

In 2010, Parrington developed the Basic Language and Learning Skills protocol. The modules aim to assist caregivers and therapists in teaching learners the necessary skills to participate in academic and basic learning activities within a school environment. This information is presented using a criterion-referenced format. These skills foster independence in self-care tasks and enhance the child's ability to learn new information autonomously. The assessment facilitates foundational learning and basic academic skills for children with autism spectrum disorder throughout their educational journey. Additionally, the module aids in the promotion of other relevant classroom skills. Skills included in the module encompass verbal cooperation, language comprehension, requesting, naming, action mimicking, interventional speech, spontaneous speech, playing and leisure, group instruction, syntax and grammar, generalizations, reading, mathematics, spelling, dressing, grooming, self-care skills, hand-eye coordination activities, toileting, eating, and writing. The purpose of this study was to assess children's basic learning and academic skills. To assess basic learning, areas such as imitation, vocal sounds, vocal imitation, receptive language, classroom routines, syntax and grammar, requesting, visual performance, generalized responding, intraverbal behavior, and leisure activities were examined. Similarly, the module includes academic skills such as general knowledge, reading, math, and writing (Parrington, 2010).

Procedure

After the Departmental Advisory Committee provided approval, the most appropriate intervention scheme was chosen for the participants for 6 months, or 24 weeks. Control data was gathered to identify the baseline data of the subjects. At the beginning of the study, the ABLLS protocol was administered. Over the six month period, applied behavior analysis therapy was provided, which consisted of 1 hour of therapy per day for 120 hours total. The sessions were conducted on one-to-one basis, using various ABA techniques. At the end of the 6 months, post-intervention levels for each protocol were carefully evaluated.

Results

At first, the severity of autism, as well as school-related skills, was evaluated using the Childhood Autism Rating Scale (CARS), as well as Basic Learning Skills and Academic Skills sections of the Assessment of Basic Language and Learning Skills (ABLLS). The data obtained from the Childhood Autism Rating Scale, Basic Learning Skills, and Academic Skills assessments is contained in Tables 2, 3, and 4 respectively.

Table 2

Pre Assessment of the Sample on Childhood Autism Rating Scale (N=70)

Variables	M	SD	Observed range	Potential range
Relating to people	2.26	0.53	1.00-3.00	1-4
Imitation	2.26	0.38	1.50-3.00	1-4
Emotional Response	2.08	0.62	1.00-3.50	1-4
Body Use	2.15	0.58	1.50-3.50	1-4
Object Use	2.22	0.38	1.50-3.00	1-4
Adaptation to change	2.30	0.39	1.50-3.00	1-4
Visual Response	1.86	0.71	1.00-3.50	1-4
Listening Response	1.83	0.49	1.00-3.00	1-4

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Taste Smell and touch Response and use	2.30	0.37	1.50-3.00	1-4
Fear or Nervousness	2.40	0.39	2.00-3.00	1-4
Verbal Communication	2.50	0.34	1.50-3.00	1-4
Nonverbal Communication	2.35	0.38	1.50-3.50	1-4
Activity Level	2.13	0.54	1.00-3.50	1-4
Level and Consistency of Intellectual Response	2.17	0.47	1.50-3.00	1-4
General Impressions	2.64	0.47	1.50-3.50	1-4

The Childhood Autism Rating Scale was used to test the sample (N=70) and a higher score on the test meant the child had more challenges. Visual Response and Listening Response scored the highest which suggests there were more difficulties in those areas. Many participants found "Taste, Smell and Touch Response and Use" to be very challenging. There were minor problems found in "Relating to People," "Imitation," "Emotional Response," "Verbal Communication," and "Nonverbal Communication." "Fear or Nervousness" had fewer issues. Both "Activity Level" and "General Impression" pointed to some problems. The findings show that the children had social, communication and sensory challenges before taking part in the intervention.

Table 3

Pre Assessment of the Sample on Basic Learning Skills from Assessment of Basic Language and Learning Skills (N=70)

Variables	**M**	**SD**	**Observed range**	**Potential Range**
Cooperative and Reinforce effectiveness	4.67	2.09	2.00-10.00	0-19
Visual performance	5.70	2.81	1.5-13.50	0-27
Receptive Language	7.48	3.65	1.50-15.00	0-57
Imitation	2.45	1.22	0.50-5.50	0-27
Vocal Imitation	1.40	1.01	0.00-3.50	0-20
Requests	2.12	1.17	0.00-9.00	0-29
Labeling	1.93	1.27	0.00-5.00	0-47
Intraverbal	1.06	1.04	0.00-5.00	0-49
Spontaneous Vocalizations	0.09	0.32	0.00-1.50	0-9
Syntax Grammar	0.44	0.79	0.00-2.50	0-20
Play And Leisure	2.71	1.22	0.00-5.00	0-15
Social Interaction	3.28	1.91	0.50-10.00	0-34
Group Instruction	1.38	1.23	0.00-5.00	0-12
Follow Classroom Routines	1.20	0.95	0.00-4.00	0-10
Generalized Responding	0.38	0.60	0.00-2.50	0-6

The pre-assessment from Assessment of Basic Language and Learning Skills revealed that some students had more difficulty than others, as a higher score reflected greater difficulty. Tasks that involved visual skills scored the highest, indicating that students had trouble with them. Limited abilities were also noticed in the tasks "Imitation," "Vocal Imitation," and "Labeling." The results for "Receptive Language Abilities" were not consistent. The report found that "Cooperate and Reinforce" could be improved. Alternatively, Intra-Verbal and Spontaneous Vocalizations were rated lowest, suggesting that these individuals had fewer challenges and could communicate some. The child had trouble playing and was also having difficulties with other children. Children scored better in "Group Instruction," "Follow Classroom Routines," and "Generalized Responding."

Table 4

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Pre Assessment of the Sample on Academic Skills from Assessment of Basic Language and Learning Skills (N=70)

Variables	M	SD	Observed range	Potential range
Reading	1.72	1.18	0.00-4.50	0-17
Math	2.22	1.59	0.00-6.00	0-29
Writing	2.22	1.45	0.00-6.00	0-10
Spelling	1.58	1.05	0.00-4.00	0-7

The assessment of basic language and learning skills protocol was used to check academic skills at the baseline level of the study. Students' average scores for "Reading," "Writing," and "Spelling" showed that they had a moderate level of early academic skills. This initial testing helps identify the children's language and academic strengths and weaknesses. The baseline lets us see the progress made by the students in learning and academics as the applied behavior analysis intervention continues.

Table 5

Pre Post Difference of the Sample on Childhood Autism Rating Scale at Post Intervention Level

Variables	Pre assessment M(SD)	Post assessment M(SD)	Mean difference M(SD)	t df=69	Cohen's d
Difficulty in Relating to people	2.26(0.53)	2.23(0.54)	0.03(0.34)	.70	0.05
Difficulty in Imitation	2.26(0.38)	2.23(0.41)	0.03(0.21)	1.39	0.07
Difficulty in Emotional Response	2.08(0.62)	2.07(0.58)	0.01(0.36)	.33	0.01
Difficulty in Body Use	2.15(0.58)	2.11(0.56)	0.04(0.31)	1.14	0.07
Difficulty in Object Use	2.22(0.38)	2.13(0.41)	0.08(0.29)	2.43*	0.22
Difficulty in Adaptation to change	2.30(0.39)	2.23(0.39)	0.06(0.29)	1.83	0.17
Difficulty in Visual Response	1.86(0.71)	1.88(0.68)	-0.02(0.34)	-.52	0.03
Difficulty in Listening Response	1.83(0.49)	1.80(0.55)	0.03(0.26)	1.15	0.05
Difficulty in Taste Smell and touch Response and use	2.30(0.37)	2.33(0.39)	-0.03(0.19)	1.52	0.07
Difficulty in Fear or Nervousness	2.40(0.39)	2.40(0.39)	0.00(0.25)	.00	0
Difficulty in Verbal Communication	2.50(0.34)	2.48(0.42)	0.01(0.39)	.31	0.05
Difficulty in Nonverbal Communication	2.35(0.38)	2.33(0.42)	0.02(0.27)	.65	0.05
Difficulty in Activity Level	2.13(0.54)	2.05(0.50)	0.08(0.34)	2.11*	0.15
Difficulty in Level and Consistency of Intellectual Response	2.17(0.47)	2.14(0.54)	0.03(0.24)	1.00	0.05
Difficulty in General Impressions	2.64(0.47)	2.56(0.52)	0.08(0.39)	1.70	0.16

Note: **p<.05, **p<.01, ***p<.001*

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The Childhood Autism Rating Scale was used to compare how children acted before and after receiving behavior analysis treatment. Scores for "Relating to People" and "Imitation" got slightly better. "Emotional Response" stayed about the same, while "Body Use," "Object Use," and "Adaptation to Change" increased a little, indicating mild improvement. "Visual Response" and "Taste, Smell and Touch Response" showed slight decreases. Scores for communication improved a little, especially in "Verbal" and "Nonverbal Communication." On the other hand, "Activity Level" and "General Impressions" decreased which is a mildly positive development. The correlation between "Body Use" and "Activity Level" was found to be moderate when using paired samples analysis. No significant correlation was discovered in the domains "Relating to People," "Imitation," "Emotional Response," "Using Objects," "Change Adaptation," "Sight," "Sound," "Sense of Taste, Smell and Touch," and "Fear or Nervousness."

Table 6

Pre Post Difference of the Sample on Assessment of Basic Learning Skills at Post Intervention Level

Variables	**Pre assessment M(SD)**	**Post assessment M(SD)**	**Mean difference M(SD)**	**t Df=69**
Cooperative and Reinforce effectiveness	4.68(2.09)	9.31(2.75)	-4.63(1.80)	-21.47***
Visual performance	5.70(2.81)	10.73(3.40)	-5.03(2.62)	-16.08***
Receptive Language	7.48(3.66)	13.56(5.07)	-6.07(3.39)	-14.99***
Imitation	2.45(1.22)	5.13(2.49)	-2.68(2.10)	-10.68***
Vocal Imitation	1.41(1.01)	2.77(1.36)	-1.36(1.01)	-11.29***
Requests	2.12(1.17)	2.21(1.73)	-2.08(1.61)	-10.82***
Labeling	1.93(1.27)	4.06(2.01)	-2.13(1.49)	-11.91***
Intra verbal	1.06(1.04)	3.40(2.49)	-2.34(2.16)	-9.04***
Spontaneous Vocalizations	.09(0.32)	0.20(0.56)	-.11(0.48)	-1.86
Syntax Grammar	.44(0.83)	0.61(0.87)	.23(1.03)	1.92
Play And Leisure	2.71(1.22)	5.11(1.78)	-2.40(1.33)	-15.08***
Social Interaction	3.28(1.91)	6.11(22.74)	-2.83(1.68)	-14.10***
Group Instruction	1.37(1.23)	2.63(1.72)	-1.27(1.27)	-8.37***
Follow Classroom Routines	1.20(.95)	2.46(1.04)	-1.25(0.90)	-11.58***
Generalized Responding	0.38(0.60)	0.81(1.02)	-.43(0.82)	-4.38***

Note: *$p<.05$, **$p<.01$, ***$p<.001$

The data from the assessment before and after the applied behavior analysis intervention with the sample group (N=70) shows major improvements in basic learning skills. The scores after assessment showed that students cooperated better and responded more effectively to reinforcement. There was a significant improvement in "Visual Performance" as well. "Receptive Language" went up which means the student is understanding language better. Learning and social skills improved in "Imitation," "Vocal Imitation," "Requests," "Labeling," and "Intraverbals." "Social Interaction" saw the greatest rise which suggests students became more involved with their peers. The results demonstrate that applied behavior analysis can help children improve in important areas of development and learning.

Table 7

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Pre Post Difference of the Sample on Academic Skills (N=70)

Variables	Pre assessment	Post assessment	Mean difference	T Df=69
	M(SD)	M(SD)	M(SD)	
Reading Skills	1.72(1.21)	2.89(1.34)	-1.11(1.14)	-8.55***
Math	2.23(1.59)	3.26(1.55)	-1.03(1.29)	-6.67***
Writing	2.23(1.45)	4.23(1.71)	-2.01(1.35)	-12.46***
Spelling	1.58(1.05)	2.38(1.06)	-.79(0.93)	-7.13***

Note: **p<.05, **p<.01, ***p<.001*

The results of the pre-assessment and the post-assessment for the sample (N = 70) proved significant growth in writing, then reading, math and spelling, indicating that ABA has greatly benefited the students. Analysis of Assessment of Basic Language and Learning Skills data showed that most domains are strongly related. There was the highest relationship between "Social Interaction" and cooperation and reinforcement response. Strong relationships were found between "Receptive Language," peer learning, imitation and play. Visual performance was shown to be closely related to skill in writing. The results showed that Syntax-Grammar does not impact Spontaneous Vocalization, demonstrating that ABA helps with many areas of development.

Discussion

This study looked at how the Applied Behavior Analysis (ABA) method affected the academic and foundational learning skills of young children diagnosed with Autism Spectrum Disorder (ASD). Autism is a neurodevelopmental condition that affects people in emotional, social, and psychological ways, typically leading to changes in social behavior and the development of some repetitive activities or interests. Such conditions autism greatly affects the engagement of children with ASD in the learning process in educational settings. Thus, the purpose of this study was to evaluate the effectiveness of language, social communication, and academic behavior interventions using ABA methodologies.

The study sample included 70 children aged 6 to 12 years with a formal diagnosis of ASD. Prior to the study, informed consent was collected from the parents, guardians, and other relevant authorities of the institutions. The assessment instruments utilized included a demographic data form, the Childhood Autism Rating Scale (CARS), and the Assessment of Basic Language and Learning Skills (ABLLS). All these assessment tools were used during the pre-and post-intervention phases designed to measure progress of the functional competencies targeted.

All the skill areas of communication, behavior management, and academic readiness were targeted during intervention through ABA. The post-assessment results showed significant improvements in language skills, learning skills, and adaptive behavior. These results support the assumption that ABA aids in effective school preparedness and fundamental academic achievement for learners with ASD.

Results from the analysis done in this study seem to be in agreement with the works of Shokoohirad and Zadeh (2023)'s study which evaluated the application of ABA on emotion regulation and communication for children with ASD. They supported the use of ABA therapies to improve functional outcomes. In addition, the foundation of the theory of ABA

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stems from B.F Skinner's theory of operant conditioning (1938) which claims that behaviors are established and strengthened through some kind of response to stimuli in the environment. A positive reinforcer, according to Skinner, increases the chances of a behavior happening again. Therefore, Applied Behavior Analysis focuses on using positive reinforcement systematically to facilitate skill acquisition and decrease inappropriate behavior in children with ASD.

To conclude, this study's results demonstrate the application of behavioral analysis techniques, in particular ABA, in improving academic and developmental milestones in children with autism. These results further reinforce the role of systematically researched and accepted behavioral approaches in aiding the participation of children with ASD in mainstream education and social activities. It is evident that ABA therapy is a highly effective intervention for the primary difficulties presented by autism, thus facilitating success for the child both socially and in school.

Policy Implications

The results of the current study are useful to researchers and psychotherapists having different roles that relate to research and evaluation activities. The study's outcomes are relevant to both practical and theoretical psychologists as well as other practitioners from associated disciplines. This study aids in the advancement of knowledge and practice in these fields and offers considerable guidance for those aiming to increase understanding and refine practices in those domains. The study emphasizes the significantly beneficial impacts of applied behavior analysis-based interventions on essential learning and academic skills development in children diagnosed with autism spectrum disorder.

These results support the importance of understanding the role of applied behavior analysis for educators and other allied health professionals working with children. These useful results indicate that the implementation of such interventions can begin as early as possible. Understanding these possible benefits assists parents and caregivers who are introduced to applied behavior analysis-based interventions for children with autism at an early age. This understanding empowers parents to implement interventions earlier which makes them more successful.

Additionally, the outcome of the research has relevance for professional clinicians and therapists, as they may use principles of applied behavior therapy to tailor programs for children with autism spectrum disorder. Although the results are positive, there are still some gaps that need to be researched further.

Conclusion

In conclusion, this study strongly supports the conclusion respecting the effectiveness of the applied behavior analysis interventions concerning the academic and fundamental learning competencies of children with autism. This is evident when checking out the correlation of the domains of therapeutic and educational goals with applied behavior analysis as its wide applicability for therapeutic and educational purposes. Applied behavior analysis interventions' background completes the use of academic and foundational skills as it provides an evidence-based practice with children with autism spectrum disorder.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Publishing.

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CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
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CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.03 No.03 (2025)

Barry, S., Baird, G., Lascelles, K., Bunton, P., & Hedderly, T. (2011). Neurodevelopmental movement disorders – An update on childhood motor stereotypies. *Developmental Medicine & Child Neurology, 53*(11), 979–985. https://doi.org/10.1111/j.1469-8749.2011.04058.x

Barton, E. E., & Smith, B. J. (2019). Advancing high-quality preschool inclusion: A discussion and recommendations for the field. *Early Childhood Education Journal, 47*, 383–393. https://doi.org/10.1007/s10643-019-00941-9

Dawson, G., Rogers, S., Munson, J., Smith, M., Winter, J., Greenson, J., ... & Varley, J. (2010). Randomized, controlled trial of an intervention for toddlers with autism: The Early Start Denver Model. *Pediatrics, 125*(1), e17–e23. https://doi.org/10.1542/peds.2009-0958

Eldevik, S., Hastings, R. P., Hughes, J. C., Jahr, E., & Cross, S. (2009). Meta-analysis of early intensive behavioral intervention for children with autism. *Journal of Clinical Child & Adolescent Psychology, 38*(3), 439–450. https://doi.org/10.1080/15374410902851739

Entwisle, D. R., & Alexander, K. L. (1989). Early schooling and social stratification. *Annual Review of Sociology, 15*, 479–499. https://doi.org/10.1146/annurev.so.15.080189.002403

Girianelli, V. R., Silva, M. A. I., Silva, M. A. I., & Silva, M. A. I. (2023). Early diagnosis of autism and other developmental disorders, Brazil, 2013–2019. *Revista de Saúde Pública, 57*, 21. https://doi.org/10.11606/s1518-8787.2023057000001

Leaf, J. B., McEachin, J., Taubman, M., Ala'i-Rosales, S., Leaf, R., Tsuji, K., ... & Oppenheim-Leaf, M. (2016). Applied behavior analysis is a science and, therefore, progressive. *Journal of Autism and Developmental Disorders, 46*, 720–731. https://doi.org/10.1007/s10803-015-2591-6

Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology, 55*(1), 3–9. https://doi.org/10.1037/0022-006X.55.1.3

Makrygianni, M. K., Gena, A., Katoudi, S., & Galanis, P. (2018). The effectiveness of applied behavior analytic interventions for children with Autism Spectrum Disorder: A meta-analytic study. *Research in Autism Spectrum Disorders, 51*, 18–31. https://doi.org/10.1016/j.rasd.2018.03.006

Partington, J. W. (2010). *The assessment of basic language and learning skills-revised (ABLLS-R)*. Behavior Analysts, Inc.

Rababa, M., & Ayasrah, S. (2024). The effectiveness of a training program based on the assessment of basic language and learning skills-revised tool 'ABLLS-R' in reducing stereotyped behaviors among children with autism spectrum disorder. *International Journal of Developmental Disabilities*, 1–14.

Reichow, B., Hume, K., Barton, E. E., & Boyd, B. A. (2018). Early intensive behavioral intervention (EIBI) for young children with autism spectrum disorders (ASD). *Cochrane Database of Systematic Reviews, 2018*(5), CD009260. https://doi.org/10.1002/14651858.CD009260.pub3

Schopler, E., Reichler, R. J., & Renner, B. R. (1988). *The Childhood Autism Rating Scale (CARS)*. Western Psychological Services.

Schreibman, L., Dawson, G., Stahmer, A. C., Landa, R., Rogers, S. J., McGee, G. G., ... & Halladay, A. (2015). Naturalistic developmental behavioral interventions: Empirically validated treatments for autism spectrum disorder. *Journal of Autism and Developmental Disorders, 45*, 2411–2428. https://doi.org/10.1007/s10803-015-2407-8

Shokoohirad, M., & Rahim Zadeh, S. (2023). The effectiveness of an applied behavior analysis program on autistic children's emotional and social skills. *Journal of Applied Psychological Research, 14*(1), 115–128.

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR

Smith, T., Groen, A. D., & Wynn, J. W. (2000). Randomized trial of intensive early intervention for children with pervasive developmental disorder. *American Journal on Mental Retardation, 105*(4), 269–285.

Wong, C., Odom, S. L., Hume, K., Cox, A. W., Fettig, A., Kucharczyk, S., ... & Schultz, T. R. (2015). Evidence-based practices for children, youth, and young adults with Autism Spectrum Disorder: A comprehensive review. *Journal of Autism and Developmental Disorders, 45*(7), 1951–1966. https://doi.org/10.1007/s10803-014-2351-z

Zablotsky, B., Black, L. I., Maenner, M. J., Schieve, L. A., Danielson, M. L., Bitsko, R. H., ... & Blumberg, S. J. (2019). Prevalence and trends of developmental disabilities among children in the United States: 2009–2017. *Pediatrics, 144*(4), e20190811. https://doi.org/10.1542/peds.2019-0811