

**PARENT-IMPLEMENTED INTERVENTION FOR CHILDREN WITH  
AUTISM SPECTRUM DISORDER (ASD): A CASE STUDY**

Mitu De<sup>1,2\*</sup>, Chandrani Chakraborty<sup>3</sup>, Manisha Bhattacharya<sup>4</sup>, Pranabesh Bhunia<sup>5</sup>, Manoj Kumar Mahato<sup>6</sup>, Piyali Chakraborty<sup>6</sup>, Ranjana Chakraborty<sup>7</sup> and Indrani Basu<sup>8</sup>.

<sup>1</sup>Head of Research and Academic Studies Unit (Hony), Autism Society West Bengal (ASWB), 29/1 Stadium Colony, Mukundapur, Kolkata 700099

<sup>2</sup>Associate Professor, Gurudas College, Kolkata-700054

<sup>3</sup>Coordinator, SPIRES Program, ASWB.

<sup>4</sup>Clinical Psychologist, ASWB, 29/1 Stadium Colony, Mukundapur, Kolkata 700099

<sup>5</sup>Coordinator, D.Ed. Spl. Education, ASWB, Mukundapur, Kolkata 700099

<sup>6</sup>Therapist, ASWB, 29/1 Stadium Colony, Mukundapur, Kolkata 700099

<sup>7</sup>Board Member, ASWB, 29/1 Stadium Colony, Mukundapur, Kolkata 700099

<sup>8</sup>Director, ASWB, 29/1 Stadium Colony, Mukundapur, Kolkata 700099;

\*Corresponding author e-mail: mituaswb@gmail.com

**Abstract**

Impairments in language and social communication are included in the primary diagnostic criteria for Autism spectrum disorder (ASD). Basic language assessments are used as pre-screening tools in autism intervention programs to help determine where a language program for a child with autism should begin. Verbal Behavior Analysis, or VBA, is a language intervention strategy. Parent-implemented Intervention entails parents directly using individualized intervention practices with their child to increase positive learning opportunities and acquisition of important skills. This paper is based on a case study involving three month Parent & Child training program at Autism Society West Bengal (ASWB), Kolkata, West Bengal, India.

**Keywords:** Parent-implemented intervention, Autism spectrum disorder (ASD), Parent & Child training, Verbal Behavior Analysis, assessment.

**Introduction**

Parent-implemented Intervention entails parents directly using individualized intervention practices with their child to increase positive learning opportunities and acquisition of

important skills. Parents learn to implement such practices in their home and/or community through a structured parent training program. Literature review suggests that Parent-implemented Intervention is an evidence based practice [1-4].

Parent-implemented intervention fits with family-centered care in that its goal is not only improved developmental progress for the child, but enhanced family well-being. Studies show that an important outcome of family-centered care is an increase in parental knowledge, skills and sense of competency. The potential benefits of parent training are increased skills, renewed confidence and reduced stress for parents as well as for children. Group training for parents in new skills has been demonstrated to facilitate mutual support [5].

### **Autism spectrum disorder (ASD)**

Autism spectrum disorder (ASD) encompass a range of presentations which may be traced to a triad of symptoms: a. impaired reciprocal social interaction; b. disordered verbal and nonverbal communication, c. restricted, repetitive behavior or circumscribed interests. One of the defining diagnostic criteria according to the DSM-V for Autism Spectrum Disorder (ASD) is a “persistent deficit in social communication and social interactions across multiple contexts” [6]. Impairments in language and social communication are included in the primary diagnostic criteria for Autism spectrum disorder (ASD). The term “spectrum” refers to the wide range of symptoms, skills, and levels of impairment that people with ASD can have. The severity of language deficits in individuals with ASD varies markedly. Approximately half of all individuals with autistic disorder remain nonverbal throughout life, while other individuals may develop fluent language and extensive vocabularies [7].

### **Language acquisition**

The timing of language acquisition is a key predictor of functional outcome; acquisition of useful speech by 5-6 years of age has been associated with better educational and functional attainment in adulthood [8]. Milestones in language and communication play major roles at almost every point in development for diagnosing and understanding autism [9].

Individuals with an ASD diagnosis typically have language delays, so it is critical to help each child develop a wide range of language skills. In order to effectively communicate and socially interact with others, it is necessary for an individual to understand and use language skills. Specifically, an individual must be able to understand what others are saying and be able to express their desires and observations, as well as be able to talk about their experiences. Speech and language pathologists refer to these skills as receptive and expressive language skills.

### **Applied Behavior Analysis or ABA,**

Applied Behavior Analysis, or ABA, is a popular method of teaching children with Autism Spectrum Disorders (ASD). It is based on the premise that appropriate behavior – including speech, academics and life skills – can be taught using scientific principles. ABA assumes that children are more likely to repeat behaviors or responses that are rewarded (or "reinforced"), and they are less likely to continue behaviors that are not rewarded. Eventually, the reinforcement is reduced so that the child can learn without constant rewards.

Some clinicians and educators who are trained in Applied Behavior Analysis (ABA) teaching methods incorporate a behavioral analysis of expressive language skills in their intervention

strategy. This analysis was first introduced to the field of Behavior Analysis in 1957 by Dr. B.F. Skinner in his book “Verbal Behavior.” He indicated that there are several types of expressive language skills that one uses when communicating with others. He provided a functional analysis of these expressive language skills to demonstrate that when someone says a word that it can occur for several different reasons. The Verbal Behavior analysis serves as the foundation for teaching Verbal Behavior as part of an ABA program. Thus, when working with individuals who have deficits in their language to skills, it is necessary to determine which of these verbal skills the child has and to teach him the ones he doesn’t have. It is important to ensure that the child can use these types of expressive language skills in various situations.

### **Language intervention strategy for individuals with ASD**

A group of clinicians and researchers heavily influenced by B. F. Skinner's analysis of language [10] have developed a curriculum and instructional approach to language training for children with autism based on his analysis [11, 12] This Verbal Behavior Analysis approach views language functionally with each verbal response defined by its unique antecedent and consequences [10]. So language instruction focuses on the acquisition of functional and distinct verbal operants (e.g., mand) rather than topographies (i.e., words) according to the traditional receptive/expressive dichotomy.

### **Verbal Behavior Analysis or VBA**

Verbal Behavior Analysis, or VBA, is a language intervention strategy based on the work of B.F. Skinner. An American psychologist, social philosopher, and inventor, Skinner was a leading figure in the branch of psychology known as Behaviorism. This school of psychology derives from “the belief that behaviors can be measured, trained and changed,”

A VBA program focuses on getting a child to realize that language will get him what he wants, when he wants it. Requesting is often one of the first verbal skills taught; children are taught to use language to communicate, rather than just to label items. Learning how to make requests also should improve behavior. Like many Lovaas ABA programs, a VB program will use errorless teaching methods, prompts that are later reduced and discrete trial training.

### **Assessment of basic language skills in individuals with ASD.**

The assessment of basic language and learning skills (ABLBS) is an educational tool used frequently with applied behavior analysis (ABA) to measure the basic linguistic and functional skills of an individual with developmental delays or disabilities [13]. It provides a comprehensive review of 544 skills from 25 skill areas including language, social interaction, self-help, academic and motor skills that most typically developing children acquire prior to entering kindergarten. Expressive language skills are assessed based upon the behavioral analysis of language as presented by Dr. B.F. Skinner in his book, Verbal Behavior [10]. The task items within each skill area are arranged from simpler to more complex tasks. This practical tool facilitates the identification of skills needed by the child to effectively communicate and learn from everyday experiences. The information obtained from this assessment allows parents and professionals to pinpoint obstacles that have been preventing a child from acquiring new skills and to develop a comprehensive language-based curriculum. The original version was first released in 1998 by Behavior Analysts, Inc. and was developed by James W. Partington, Ph.D., BCBA-D and Mark L. Sundberg, Ph.D, BCBA-D [13].

Basic language assessments are used as pre-screening tools in autism intervention programs to help determine where a language program for a child with autism should begin. The Behavioral Language Assessment Form [13] is an alternative to standardized language assessments and especially useful for children on the autism spectrum who have a limited vocabulary. It contains 12 different sections that cover early language skills and related areas. Most of the skills contained in Basic Learner Skills Section are ones that most typically – developing children would have acquired by the end of kindergarten, “these skills represent a reasonable, age based target for young children who are in early intervention programs, while also continuing to provide important educational goals for older children” [13].

### Material and Methods

Parent-Implemented Intervention is a core component of many evidence-based interventions for ASD, including functional communication training and social skills training. The presence of at least one parent is mandatory in the three month training program. Autism Society West Bengal (ASWB’s) runs 3 (three) month parent- child training known as Autism Spectrum Intervention Research, Education, and Support (ASPIRES) program, designed to provide parents with basic facts about individuals with autism spectrum disorders (ASD) and strategies for working with these individuals utilizing collaborative partnerships. Hands on training program for management of the child as well as several theoretical classes to enhance the understanding of ASD are imparted to the parents over the three month period. Both parents are encouraged to take the training along with their child. ASWB believes in empowering and training the parents.

The Behavioral Language Assessment Form was used as a reference for the study. It was modified keeping in mind the socio-cultural context of this region. The scoring patterns were verbally translated by the RCI certified trained special educators so that the parents did not encounter any problems in comprehension and subsequent scoring.

**Table I. Areas of Assessment and Methodology**

Sl. No.	Areas	Methodology
1	Cooperation	Involves teaching the children to respond to instructor controlled reinforcers the children would work for a variety of items and activities as reinforcement, the children will respond to social reinforcers and wait appropriately if reinforcer delivery is delayed.
2	Requests	Involves teaching the children to ask for several items or activities, to teach them to spontaneously ask for a variety of items and activities, to ask for missing items, for information etc
3	Motor Imitation	It involves teaching the children to imitate motor activities using an object, imitation of body movements including gross, fine, oral and head movements.
4	Vocal Play	It involves spontaneous vocalisation of sounds, words, singing songs with models, spontaneous requests spontaneous labelling and conversation etc.
5	Vocal Imitation	The objective of the Vocal Imitation is to improve vocal imitation for the children with some speech with the objective of improving articulation or the variation in

		volume, tone, or the speed of the child's speech.
6	Matching to Sample	Involves matching objects, pictures and designs to presented samples.
7	Receptive	Involves teaching the child to follow simple directions. The objective is to enable the children to understand and act upon specific words or phrases, to follow simple instructions and directions.
8	Labelling (Tacts)	Involves teaching the children to label reinforcers or common items and later it involves teaching the children more complex labelling skills including actions, body parts etc.
9	Receptive by Function, Feature And Class	Involves identification of items based on information (function, feature and class) about them
10	Conversational Skills (Intraverbals)	This involves fill- in missing words or part of songs from songs, provide the sounds of animals, answering novel questions, telling stories. For non verbal children who are learning to request, the use of sign language is applied.
11	Letters and Numbers	This involves teaching rote counting with and without prompts; counting objects; naming letters and numerals in sequence; identifying and naming letters, numbers; matching number with same amount of objects.
12	Social Interaction	Involves returning greetings, turn taking, approaching others for interactions, and giving up reinforcers, requesting items or information from peers, make offers to share, initiate greetings, and converse with others.

For each area the score range was 1-5. Score 1 meant the most basic level where there was no progress in that particular area. Score 2 denoted brief responses. Score 3 denoted few response in that area. Score 4 denoted several response in that area. Score 5 denoted proficient responses in that area.

**Sample size:** 6 children with ASD of different age groups who underwent the 3 (Three) month Parent & Child training and ASPIRES (Autism Spectrum Intervention Research, Education and Support) program at Autism Society West Bengal (ASWB), Kolkata 700099. They were termed as A-F to avoid familiarity bias. All the children were assessed pre and post the three month Parent & Child Training using the modified assessment Form. The RCI certified special educators taught the parents about intervention, assessment and scoring. Parents were encouraged to follow the intervention program at home after the training was over.

### Result

Each child was assessed in the 12 areas. Children progressed differently across the 12 different sections. The result is shown in Table II.

**Table II. Assessment areas and Progress of the children**

Sl. No.	Areas	A	B	C	D	E	F
	Age (in yrs)	2	2.5	3.5	4.5	5.5	8

1	Cooperation	1-2	1-2	1-2	2	1-2	2-3
2	Requests	2-3	1	1-3	3	1-3	1-3
3	Motor Imitation	1	1	1-2	1-2	3-4	2-4
4	Vocal Play	2	4	1	4-5	4-5	2
5	Vocal Imitation	1	1	1	1-2	2-4	1
6	Matching to Sample	2	1	1	1	3-4	2
7	Receptive	2	1	1	2	2	2
8	Labelling (Tacts)	1	1	1	1	1-2	1
9	Receptive by Function, Feature And Class	1	1	1	1	1	1
10	Conversational Skills (Intraverbals)	1	1	1	2	1-2	1
11	Letters and Numbers	1	1	1	1	5	1
12	Social Interaction	2	2	1-2	1-3	3	1-2

## Discussion

Teaching children with ASD to improve their communication skills is essential for helping them reach their full potential. There are many different approaches, but the best intervention program begins early, during the preschool years, and is tailored to the child's age and interests. It should address both the child's behavior and communication skills and offer regular reinforcement of positive actions. Most children with ASD respond well to highly structured, specialized programs. Parents or primary caregivers, as well as other family members, should be involved in the intervention program so that it becomes part of the child's daily life.

Results in Table II don't show uniform development among the children included in this study. This reflects another hallmark of ASD, uneven skill development. The uneven cognitive profile, also known as splinter skills, is when a person on the autism spectrum may demonstrate strengths in an area but be severely lacking in skills in another area. The results in Table II also indicate that training is a continuous process and should not be limited to a few months only. In some areas change was noticed within three months and in some areas there was no change at all.

## Conclusion

Each person with ASD is unique, and intervention plans must be individualized based on the needs of the individual and family. Early intervention can make a significant difference in improving cognitive, language and social development for children with ASD. The primary focus should be on the child's acquisition of communication, social, play, and academic skills.

The collaboration between the parent and the professional working with the child in the program is critical to the effectiveness of programs [2]. Research has also shown that early intervention programs can lead to considerable gains in cognitive, social, emotional, and motor functioning [14]. The parents are encouraged to be pro-active. The Parent & Child program empowered the parents to continue the parent implemented intervention at home after the training period.

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