

Effect of Early Intervention in Autism: A Case Study

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Abstract- Introduction: Autism is a group of developmental disorders known as Pervasive Developmental Disorders (PDD). Pervasive developmental disorder is defined by the presence of abnormal and impaired development characterized as abnormal functioning in all three areas of social interaction, communication, restricted and repetitive behaviour, that manifests before the age of 3 years. Autistic disorder is believed to occur at the rate of about 8 cases per 10000 children, with 4:1 ratio of males to females. An intensive early intervention is critical in maximizing outcomes for children with autism spectrum disorder (ASD), and evidence suggests that the earlier the intervention, the better the outcome.

Aim: The present study aims to investigate the effect of in-depth early intervention for an autistic child.

Method: A case study method and pre- post research design was used to study the efficacy of early intervention. Master 'V' aged 37 months was diagnosed as "Mild-Moderate Autism" as per ICD-10 classification. He was given an all encompassing early intervention program. Pre- post research design was used to study the efficacy of early intervention. The child was assessed using Childhood Autism Rating Scale, Denver Developmental Screening, and Vineland Social Maturity Scale and also by observation and testing. His overall DQ was 55 with strikingly low scores on language and social development. Childhood Autism Rating Scale was administered for pre-post assessment of intervention. Child underwent an early intervention program for 6 months from Sweekaar Rehabilitation Institute for Handicapped, Secunderabad. Informed consent from the parents was taken. The early intervention using multidisciplinary approach comprised of behaviour modification, training in communication skills, speech therapy, pre-academic skills, sensory integration and play therapy. The specific techniques to improve eye contact included magic bottle and magic wand techniques, and to improve attention and concentration beads technique, wooden blocks, coins board and colouring techniques were used.

Results: The results show that there was significant improvement in the areas of relating to people, listening response, intellectual response, adaptation to change and visual response and reduction in body use, object use and level of activity. Qualitative analyses of improvement in the areas of adaptive and personal-social behaviors were compared with pre treatment assessment and the rates of improvement were analyzed.

Conclusion: An early intervention can improve adaptive and personal-social behaviours of children with autism.

Index Terms- A Case Study, Autism, and Early Intervention.

I. INTRODUCTION

Autism is a neurodevelopmental disorder involving impairments in social interaction and communication, and the presence of a restricted range of interests and/or repetitive behaviours. An autistic child may prefer to spend time alone rather than participate in cooperative games and prefer to play alone rather than interact with others. The expressive language and receptive language skills, or comprehension are always impaired in children with autism and these deficits vary from mild to severe. Non-verbal communication is also abnormal in children with autism. This includes the use of gestures, body posture, eye gaze, and facial expression. Their play is usually restricted to repetition and perseveration. Stereotypes like hand flapping may also dominate their play, further restricting their range of activities. The child may sing or repeat commercials or songs endlessly. Eating may be affected by a limited list of food preferences. A few children with autism may have exceptional artistic, mathematical, or memory skills despite significant deficits in other areas. Many children with autism are hypersensitive to particular sensory stimuli such as light, sound, touch, and smell. Patients with autism may show co morbid impairments affecting their cognition, sensory functioning, or attention/activity level. About 75% of persons diagnosed with autism are mentally retarded. Since Kanner (1943) first characterized autism, much work has explored the etiology and treatment of autism. Although progress has been made, here is no cure for autism, and its etiology remains largely unknown. Currently 11.1 in 10,000 individuals are estimated to have autism, while the prevalence rate of all pervasive developmental disorders, including autism, is conservatively estimated to be 27.5 in 10,000 individuals (Fombonne, 2003).

Children with variety of impairments and risk factors, including those with autism, benefit from early, intensive intervention with trained providers using comprehensive, individualized, and ecologically relevant intervention approaches (Ramey & Ramey, 1998). Lord (1995) found that over the past few years, children with ASD are diagnosing in the early 2 years of age. Treatments for autism include behavioral intervention, developmental intervention, and cognitive-behavioral intervention; and these have unique intervention strategies and also have some overlap within these interventions (Corsello 2005). Although symptoms often persist through adulthood, timely detection and appropriate treatment are important factors in improving both short and long-term outcomes (Bryson et al., 2003; Marnie, 2005). During the past 50 years variety of treatments has been promoted to bring out significant improvements, for children with autism. Recent research suggests that the most effective results stem from early intensive behavioral interventions (Howlin, 2005). Evidence suggested

that early intervention with autism is more effective than later treatment; specifically, children entering intervention programs as young preschoolers tend to have better outcomes than those entering programs as school-age children (Harris & Handleman, 2000; Sheinkopf & Siegel, 1998). Early identification has increased in importance because children with ASDs who receive services prior to 48 months of age make greater improvements than those receive services after 48 months of age (Harris & Weiss, 1998). Early intervention programs are indeed beneficial for children with autism, often improving developmental functioning and decreasing maladaptive behaviors and symptom severity at the level of group analysis (Rogers & Vismara, 2008). An intensive early intervention is critical to maximizing outcomes for children with autism spectrum disorder (ASD), and evidence suggests that the earlier intervention can begin, the better the outcome (Woods & Wetherby 2003).

The Walden Toddlers Program focus on incidental teaching and social inclusion and it includes typical toddlers and toddlers with autism, between the ages of 15 and 36 months. It found that 82% of toddlers used meaningful words when they left the program and 71% of the children showed improvement in their proximity to other children (McGee & Daly, 1999). Computer-presented Social Stories and video models on the social communication skills of three children with High-Functioning Autism/Asperger's Syndrome (HFA/AS). They found that the combined treatment package was effective for improving the rates of social communication and beneficial for remediating social skill difficulties for individuals with HFA/AS (Sansosti & Powell-Smith, 2008). Social Stories are beneficial in terms of modifying target behaviours among high functioning children with ASD (Mohammad Karkhaneh et. al 2010 and Gray 1994).

Studies have been done on the importance of early detection of and intervention in autism. Early Start Denver Model (ESDM), a comprehensive developmental behavioural intervention, for improving outcomes of toddlers diagnosed with autism spectrum disorder (ASD). ESDM intervention, which is based on developmental and applied behavioural analytic principles and delivered by trained therapists and parents for 2 years and it found that controlled trial to demonstrate the efficacy of a comprehensive developmental behavioural intervention for toddlers with ASD for improving cognitive and adaptive behaviour and reducing severity of ASD diagnosis (Dawson et. al., 2010). Early intensive behavioural and developmental interventions for young children with autism spectrum disorders (ASDs) may enhance developmental outcomes. Lovaas-based approaches and early intensive behavioural intervention variants and the Early Start Denver Model resulted in some improvements in cognitive performance, language skills, and adaptive behaviour skills in some young children with ASDs (Warren et. al., 2011). A systematic review of controlled studies of early intensive behavioural interventions (EIBI) for young children with autism provides evidence for the effectiveness of EIBI for some, but not all, preschool children with autism, with some evidence that initial IQ (but not age) was related to progress (Howlin et. al., 2009; Peters-Scheffer et. al., 2011).

Cognitive ability in autism is associated with autism severity. IQ improvements correlated significantly with reduction in autism symptoms and mostly in stereotyped behaviours. However, baseline cognitive level cannot predict the progress

rate in autism symptoms with intervention. Improvement of social-communicative behaviours and the intensive intervention are related to significant cognitive increments in autism (Itzchak et. al., 2008). [Linderman & Stewart \(1999\)](#), implemented sensory integrative-based occupational therapy, and found significant improvements in the areas of social interaction, approach to new activities, response to holding or hugging, and response to movement. Decreases were noted in the frequency and duration of disruptive behaviors (e.g., high activity levels, aggressive behaviors), with an increase in functional behaviors, such as spontaneous speech, purposeful play, and attention to activities and conversation. The sensory integration therapy program positively affected treated children ([Fazlıođlu and Baran 2008](#)) and the early intensive behavioral intervention (EIBI) is an effective treatment, on average, for children with autism ([Granpeesheh., et al. 2009](#)). Ben-Itzchak and Zachor assessed the relation between pre-intervention variables such as cognition, socialization and communication; to outcome in young children with autism with different IQ scores and severity of the symptoms. They have taken six developmental-behavioural domains including, imitation, receptive language, and expressive language, nonverbal communication skills, play skills and stereotyped behaviours were assessed at pre- and post-1 year of intervention times. They found significant progress in all the six developmental-behavioural domains after 1 year of intervention. Children with higher initial cognitive levels and children with fewer measured early social interaction deficits showed better acquisition of skills in three developmental areas, receptive language, expressive language and play skills. Better progress in expressive language was associated with the child's social abilities, while more significant progress in play skills was related to pre-intervention cognitive level (Ben-Itzchak and Zachor, 2007). Some studies have found the evident that judgments about the effects of therapy may be significantly influenced by the selection of the tests for pre-and post-treatment assessments (Magiati & Howlin, 2012).

One more study was evaluated in a training course for parents, designed to help them understand autism spectrum disorder and to facilitate social communication with their young child. The results found that the training course was well received by parents and had a measurable effect on both parents' and children's communication skills (McConachie, 2005). [Solomon et. al., \(2008\)](#), conducted evidenced based treatment called parent-child interaction therapy. They investigated the role of shared positive affect during the course of therapy on child and parent outcomes. Shared positive affect in parent child dyads and parent positive affect increased between the initial and final phases of the therapy. Parent positive affect after the first phase was related to perceptions of improvement in problem behaviors and adaptive functioning.

Children with autism exhibit significant deficits in their ability to spontaneously imitate the play actions and descriptive gestures of others. Reciprocal imitation training (RIT) is a naturalistic imitation intervention designed to teach spontaneous imitation skills during play. Ingersoll & Gergans assessed the effectiveness of parent-implemented RIT using a multiple-baseline design across three young children with autism and their mothers. They found that RIT is effective for teaching imitation skills to young children with autism in a naturalistic setting and

extend the findings to parents (Ingersoll & Gergans, 2007). [Tonge et, al., \(2006\)](#), concluded that parent education and skills training program for parents of young children newly diagnosed with autism provides significant improvements in parental mental health and adjustment, justifying its addition to early intervention programs at least for parents with mental health problems. The multidisciplinary approach has brought out significant improvement in children with autism and the improvements are in the areas of relating to people, listening and visual response, and there are reduction in body use, object use, and activity level (Sridevi & Rangaswamy 2013). Jane [Case-Smith](#) and Teresa [Bryan](#) (1999) examined the effects of an occupational therapy intervention emphasizing sensory integration with five preschool children with autism and concluded that the behavioral changes that children with autism can make when participating in intervention using a sensory integration approach. The TEACCH model has increased in structure and individualized programming in the areas of communication, independence, socialization, developmental planning, and positive behavior management compared to participants in autism with severe disabilities ([Mary et, al., 2003](#)).

II. PRESENT STUDY & METHODOLOGY

Aim of the present study was to investigate the effects of an early intervention in autism. A case study method was used for the present research study. Master 'V' aged 37 months was diagnosed as "Mild-Moderate Autism" as per ICD-10 classification. He was given an all encompassing early intervention program. Pre- post research design was used to study the efficacy of early intervention. The child was assessed using Childhood Autism Rating Scale, Denver Developmental Screening, and Vineland Social Maturity Scale and also by observation and testing. Childhood Autism Rating Scale was administered for pre-post assessment of intervention. Child underwent an early intervention program for 6 months from Sweekaar Rehabilitation Institute for Handicapped, Secunderabad. Informed consent from the parents was taken. The early intervention using multidisciplinary approach comprised of behaviour modification, training in communication skills, speech therapy, pre-academic skills, sensory integration and play therapy.

2.1 Chief Complaints

Master "V" 37m aged boy brought by his parents with the complaints of unable to speak age appropriately, poor eye contact, poor attention and concentration, unable to sit at one place for some time, unable to mingle with other children, disturbed in new situations, aloofness, repetitive behavior, pre occupied with objects in a strange way and making meaningless sounds. The onset was gradual and course was continuous.

2.2 Case History

According to parents the child's motor development reported to be normal. He started to walk at the age of 1y1m. The child was unable to speak any word, only babbling was present even after 18m and eye contact was poor. Child has another problem like poor attention and concentration. He did not recognized his

mother, did not ask for mother when she was away from him. They also noticed that his symptoms were progressive with the increase of his age. The child began showing, lack of social & emotional response, not showing interest to play with peer group appropriate to development level, not able to imitate verbal and nonverbal imitation, disturbed in new situations.

Child was self engaged and most of the time he used to play with pink colour objects and like to play with car toys and mainly with tires of the car toys. He used to carry four match sticks in his hand, if one match stick missed he used search for that and he would become restless and scream. He used to make meaningless sounds frequently. Child used to show self stimulatory behaviours such as touching his lower part ears with both. Child was pre occupied with smoothness of the ears and enjoying the smoothness. The child's parents were noticed that he was not developing age appropriately after the age of 1years. And his behaviour was also changing according to his age. But they did not go for any medication or any intervention, because they thought that child will improve in later stage. At the age of 3years their relatives suggested them to go to sweekaar rehabilitation centre for psychological evaluation. So they came for psychiatrist to sweekaar upkaar from there child was referred to Department of Clinical Psychology.

2.3 Birth & Developmental History

He is the only issue of non-consanguineous parents, pre term caesarean delivery (8th month) and mother suffered with vomiting till 5th month of pregnancy. Below average birth weight (2.3kg) was present. Child had neonatal jaundice after 4 days of the birth, and went for phototherapy for two days. There after no complications were reported by the parents.

His developmental milestones were as follows: Smiling- 8weeks, Head control- 4 ½ months, Roll over- 7m, Sitting- 7 ½ m, Crawling- 9m, Standing- 11m, and Walking- 13m and babbling was started from the age of 18months. He is unable to speak a single meaningful word.

2.4 Psychological Assessment

The child was assessed using Childhood Autism Rating Scale (CARS), Denver Developmental Screening Test (DDST), and Vineland Social Maturity Scale (VSMS) and also by observation and testing.

2.5 Test Findings

On DDST his developmental age is 1 year 7months and corresponding developmental quotient is 55 indicating mild developmental delay. Comparative to motor development he got low score on language, fine motor, personal and social development.

Vineland Social Maturity Scale shows that his overall social maturity level is around 1 year 7 months and corresponding social quotient is 55.

The total CARS score is 34.50 which show "Mild to Moderate Autism".

2.6 Behavior Observation

The child had poor eye contact, was not responded to name call and was unable to follow simple commands. His attention and concentration was poor and distracted very easily. He used to

indicate his needs through gestures and drags his mother for his needs. Child was constantly squirming in the chair, and was unable to sit at one place. He was preoccupied with touching his ear frequently and enjoying the smoothness. Child was making meaningless sounds and was unable to recognize his parents.

2.7 Diagnosis

After taking the case history, test findings, behaviour observation, and parent's reports in consideration Mild-Moderate Autism was made according to ICD-10.

III. THERAPEUTIC PROCESS

3.1 Parental Counseling

It was carried out soon after the diagnosis in weekly once basis. Master "V" was provided the pharmaco therapy by the rehabilitation pediatrics to reduce the severity of the hyperactivity and self stimulatory behaviours. Parental counselling involved, engagement of parents in treatment as a part, presentation of detailed information about the disorder and its consequences, and need of multi disciplinary treatment approach with team of professionals such as psychologist, speech therapist, special educator, occupational therapist and the parents as a primary care givers, for dealing with issues relating to the pressure and stress of parenting a child with autism and developing an appropriate coping strategies to help the parents to manage the child, development of the social support group to meet and share experiences with other parents.

3.2 Intervention Program

The early intervention using multidisciplinary approach comprised of behavior modification, training in communication skills, speech therapy, pre-academic skills, sensory integration and play therapy.

3.2.1 Behaviour Modification

The behaviour modification was carried out for six months in every day basis. Every day the session was continued for half an hour by a psychologist to decrease restlessness ad self stimulatory behaviour and to improve eye contact, attention and concentration with different materials. Initially the target behaviours and reinforcers were identified to continue the therapy program for the betterment of the child.

3.2.1.1 Identifying Target Behaviour

Short-term goals

- To decrease hyperactivity and self stimulatory behaviors.
- To improve communication skills:
 - A) Attention skills
 - B) Eye contact
- To improve social interactions:
 - A) Verbal and nonverbal
 - B) Play skills

Long-term goals

1. To improve general awareness of self & environment
2. Self-help skills

3. Cognitive skills

3.2.1.2 Identifying The Reinforcers

As the child was unable to express his likes and dislikes reinforcers are selected after discussing with the parents according to his interests. Positive rein forcers:

1. Consumable rein forcers:
 - Cream biscuits
 - Apple
2. Tangible reinforcers other than food.
 - Toys
 - Coluoring pencils
3. Social Reinforcers:
 - Clapping,
 - Patting of the back,
 - Saying good boy

When at home mother can do:

- Hugging
- kissing

3.2.2 Addressing the Restlessness and Self Stimulatory Behaviour

The child was unable to sit at one place for required period of time. The child was very active and used to become very restless when he was in closed places and in new situations. To reduce all these behaviour the therapist made the child to engage in different activities. Initially the child was not able to sit for one minute also in the therapy room. So, the therapist physically restrained by holding his hands and made the child to sit in the chair for 4-5min. After using this technique for some sessions; the child was ready to sit for a while. Then the therapist changed the technique as engaging the child with different activities according to child's level. Initially the activities were changed within 2-3 minutes, because the child used to distract very quickly and later it was used within 7-8 min for changing the activities.

The child had self stimulatory behaviour like touching ears and enjoying the smoothness frequently. Whenever the therapist observed the self stimulatory behaviour in the child, the therapist made him to distract from that behaviour and engaged him by using different activities to the child such as by warning, calling by his name, command to come here, and given activities like take the ball, showing the pictures, engaged him in a talk and by giving toys to him etc. Gradually the frequency of self stimulatory behaviour was reduced and after 20 sessions with 5months of duration, the behaviour was reduced completely.

3.3 To Improve Eye Contact

As the child's eye contact was not adequate; the following activities were followed to improve his eye contact. Mother was also included along with therapist. In this process mother was used as a co-therapist to carry out home based methods.

3.3.1 Magic bottle technique

Mother was asked to take a glass bottle. She was asked to fill the bottle with water and colored balls. She was asked to move the bottle shake up and down in front of the child so that he can watch it carefully how the colored beads are moving in the water bottle with this technique child could pay attention on the bottle.

3.3.2 Magic wand

Magic wand is one stick, which is covered with a colorful satin ribbon and a bunch of beads are tied to its one end, which attracts the child. This can be moved by the therapist or mother in front of the child so, that he can observe it for a long which can improve his attention. Every time the child was reinforced by cream biscuits after paying his attention. Mother was trained to use some other techniques such as:

- a) Placing the child in a darkroom and moving candle in front of him with a distance from one side to another side.
- b) further, whenever the child pulls parents they were asked to pull back his hand and when he looks at them, look back at the desired object saying "Oh you want ... ". Therapist and parent followed this method, through which the child learned that he need to look at the other person before his need is met.
- c) Mother was asked to hold the child's head and engage him by talking along with the expressions.
- d) Mother asked to tell the rhymes with actions and facial expressions.

Initially his eye contact was very poor and after using the above techniques during therapy sessions as well as at home environment with the help of mother for 6 months, the child was able to stair other persons while asking something and when he asked to do some work.

3.4 To Improve His Attention and Concentration

The child had poor attention and concentration so; the therapist used some of the techniques to improve his attention. The child was distracted when child pre occupied in his world.

3.4.1 Beads technique

To improve his attention mother was asked to give some beads and wire or thread so, that the child can make a strand. This activity could help the child to improve his attention. He was immediately rewarded verbally saying "Good Boy" and by providing an Apple.

3.4.2 Wooden blocks

Therapist provided wooden blocks to the child, and made to remove the blocks one by one, after that the child was asked to fill the blocks again. After some sessions the child was asked to remove blocks sequins, and keep it back. After completing the task the child reinforced with biscuits.

3.4.3 Coins board

The child was provided coins board and he was copied to remove the coins first and fill the coins one by one. After some sessions the child was filling the coins according to the colours were introduced and then it was filled with alternative colours. The child was reinforced by kissing and hugging after completing the task by his mother. After some sessions he was stared to pay attention whatever was carried out. Then the therapist was changed the techniques to sustain the attention, according to the child level.

3.4.4 Colour the pictures

Parents were asked to provide the child colouring books, to fill with crayons. Child was motivated to colour the pictures with in the outer lines. Beginning child was not showed any interest to colour the pictures. Then the child was reinforced with chocolate and slowly the child was able to colour the pictures and able to colour within the outer lines.

The child was rewarded depending upon the situations.

Initially the child used to distract very easily, but after using the above techniques in 10 sessions he started to be attentive for a while. After 6 months of intervention the child was able to concentrate for 1-2min.

3.5 To Improve Communication Skills

Getting attention can be termed under communication skill as well as social skills. This is one of the pre-requisite of communication skills i.e. we need to gain the other person's attention before we communicate. As master "V" was unable to follow this while teaching communication skills. This was followed with the child with an aim to gain the other persons attention before communicating. Many exercises were planned and implemented to develop this behaviour in the child.

Therapist followed picture exchange communication system [PECS] in which the communication partner [parent/therapist] avoids eye contact at one stage. When the child approaches the person with his picture card and taps the person to gain his / her attention, the communication partner looks at the child and then responds to the request. Frequent repetition of similar strategy helped the child to understand the importance of gaining other's attention.

3.6 Developing Imitation Skills

Master 'V' imitative skills were improved by interacting with him. Imitative skills are of four types, such as:

3.6.1 Imitates gross motor movements

The child was following the imitations of the therapist with modelling a gross motor movements like clap hands, tap legs, shake hand and nod head etc. when the child will do this action, therapist praised him verbally or giving him his favourite toy.

3.6.2 Imitate actions with objects

The child was provided with same identical objects and instructing the child with modelling an action with objects. Such as ring ball, scribbles, kiss doll, hold phone to ear, feed doll, wipe mouth, put hat on head, when the child is doing this action, reinforced the child with praise like 'good boy'.

3.6.3 Imitate fine motor movements

In front of the child, the therapist asked child to imitate to claps hands together, open and close hands, rub hands together, point out body parts, tap index finger, when the child was performed this action, and he was rewarded by apple.

3.6.4 Imitates oral motor movements

In front of the child the therapist modelled an oral motor movement, like open mouth, smile, kiss, touch upper lip with tongue, when the child was done appropriately, he was rewarded.

3.7 To Improve Social Skills

Social skills program for autistic children included the learning how to act and react in social situations. Basic skills such as maintaining eye contact, developing sense of self, waiting for turn, replying to questions, and explaining rules are addressed.

3.7.1 Developing sense of self

It is difficult to build a relationship with others, until one is aware of themselves, their strengths, limitations, interest etc. Starting at a very basic level, therapist and parents helped the child to identify his image in mirror. Therapist and parents pointed to the child's reflection and mention his name and then pointed to myself [mother to herself] while saying their name [mother-her name] slowly used similar process for him to recognize himself in photographs with family members.

In the long term goals mother was asked to try and teach identification of body parts in the same manner. Mother asked to use sorting techniques when he has to sort his cloths, or other belongings. And after that it could be used to help him to notice differences like, "you have small shirts, and your father has big shorts because you are smaller than him".

3.7.2 Response to conventional questions

Our day-to-day conversations include a number of instances involving set questions and answers. The mother was explained to ask questions to the child, initially the child should provide the others help to answer the questions. The child used picture card, sign, as a response. In the initial stages the child was provided questions like where is your nose, where is your toy, bed, dress, etc.

In long term goals child could taught how to answer conversational questions, respond to small phrases like, "I don't know" when the child does not know the answer for a question. And it could be used in a group, to teach the child with modelling. In a group the other child was asked questions which he does not know, then he was answered as I don't know. It could help the child to provide similar responses.

3.8 Play Therapy

Play is a wonderful tool for helping children to move beyond autism's self-absorption into real and to share interaction. Play therapy can also allow youngsters to explore their feelings, their environment, and their relationships with parents, siblings and peers.

Improving the child's interaction with peer group and to improving child's play skills, play therapy was implemented. This was implemented in 3 stages:

Stage 1: A starting point for the child is getting him used to playing with another person. In this particular areas the child likes are used [eg: - child likes bicycle riding] and this engagement is child centered and according to his wish and needs. The focus is on building a rapport with the child. This is a good starting point for the child to accept person's presence in his world.

Stage 2: [Parallel play]: The next stage of play is parallel play. At this stage, the child is not expected to play with another child, but just play alongside, i.e parallel to another child. This provides the child to go further in play skills when he is ready. In

parallel play he has his own set of play items and the partner has his own set, the common point is that they are involved in similar kind of play.

Stage 3: [Turn taking]: For Master "V" this is planned for long-term goal and parents were asked to follow this in the same manner as mentioned below:

When the child is comfortable with having a partner playing around and may even start imitating the partner and vice-versa. Sharing the toy objects could be introduced. This could be by giving only one set of toy objects when both are involved in exactly the same kind of play. This necessitates that they actually have to share the material.

For eg: - Building towers using a set of wooden bricks or they could be sharing the same material but playing different games, like using similar bricks one child builds a tower, while another one builds a bridge.

This helped children to participate in group activities and to improve socialization. In play therapy the group of children participated and therapist made them to interact with each other by giving shake hand, wishing other children, playing with them and mainly wait for their chance in a group. Master 'V' was able to look at other children, trying to touch them, used to give shake hand, and waved bye-bye when therapist instructed after 6months.

3.9 Speech Therapy

To identify the child's strength and deficits in the area of communication parents were asked to send the child for a complete evaluation of speech and language. Based on the results therapist plans the therapy program to improve the communication skills. Speech therapy emphasizes improving spontaneous language and maximizing the child's communication skills. In this case the development of speech is very important in order to help the child to communicate his needs with the help of speech therapy. Speech therapy was carried out in every day basis at least for 45min by a speech therapist. The mother was encouraged to continue the techniques at home for the continuation of the therapy. Mother was also asked to give language input in natural environment through natural manner. For example while feeding the child use the words like plate, glass, dal, rice, milk; while dressing explaining the colours, in the bathrooms words such as tap, water, soap etc. Speech pathologist was provided speech therapy for child. Master 'V' was unable to speak a single word at all initially, and due to his poor attention and concentration he took longer time to start the words. Speech therapist informed that initially he was not co-operative for the therapy sessions, but later 5 -6 sessions he started to sit for therapy. After 6 months of speech therapy he started to speak 1-2 words by himself.

3.10 Occupational Therapy

The occupational therapist was assessed the child in an age-appropriate task basis and then therapist addressed the areas that interfere with the child's ability to function in such tasks. Therapy was provided to the child in the form of play activities which are used to improve the fine motor co-ordination, which helps the child to use pencil for writing, catch the ball, cut papers, buttoning, picture books to naming animals, engage in play activities, and it also help to enhance and maintain play,

self-help and school readiness skills. Therapy was carried out in daily basis for 30min. He showed lot of improvement after 6 months of therapy process. He was able to write alphabets up to letter K, able to write numbers up to 10 and could colour the pictures with in the lines after 6 months.

3.11 Sensory Integration

The goal of Sensory Integration therapy is to remediate deficits in neurological processing and integration of sensory information to allow the child to interact with the environment in a more adaptive fashion. Sensory integration was used to enable children to interpret sensory stimulation in a more appropriate manner by reducing both hyper and hypo-sensitivity to the stimuli, which in turn supports progress in communication, interaction, imagination and thus enables learning. Therapist took the child to sensory park to feel the different types of sensations like smoothness, hardness, and play with sand, swining, ringing the bells, climbing ladders etc. In sensory integration therapy the child get the chance to mingle with other children, to play, to interact and to share the things. It will Also help the child to improve his social skills. Therapy was carried out every day 30 min. In SIT initially he was showing interest to play with only one item but after 20 sessions he started to explore other activities. After 6 months of therapy he was able play with ladder, sand, touching different types of sensations and his behaviour like touching his ears and enjoying the smoothness was reduced completely.

3.12 Pre Academic Skill Training

According to Lovaas ABA approach is used to integrate children with autism into mainstream education. The skills were chosen according to master "V" level, and taught systematically through a series of drill, which were carried out for 10-15min, and these drills were combined with periods of breaks when master "V" was allowed to play.

According to Lovaas approach the child needs pre academics skills which will help the child to learn the basic concepts like shape, size, colour, alphabets, and numbers. The child was taught by different techniques by using drawing, painting to learn the colour concepts, shape and size concepts. Then slowly the alphabets and numbers were taught. Special educator was provided this individual educational program and the duration for this programme was initially 15min and increased gradually up to 30min. After 6 months of therapy he could able to identify the circle, square, triangle, rectangle, star, identify vehicles, fruits and house hold articles and able to write alphabets up to letter K, and able to write numbers up to 10.

3.13 Home Based Programme

Mother was trained how to handle the child in the home atmosphere in the initial phase of the intervention. Mother was taken as a co-therapist during the therapy sessions. Therapist motivated the mother to observe during the intervention program and she was also instructed that she should carry the methods at home. Mother showed much interest to continue these techniques at the home also and she used to engage the child at home by using different techniques which was instructed by the therapist. She was trained to handle the child and to engage the child with different activities they are: to reduce his restlessness, to improve

his attention and concentration, to mingle with other children, to express his needs through verbalization, and to make independent in self help skills. Mother was instructed to handle the child by using natural setting in daily life. She was explained to improve his attention and concentration with available techniques at home like threading the flowers, filling the water bottles, pasting the peace of papers in the pictures, join the dots, matching the pictures, and find the differences between the two pictures.

3.13.1 Sharing toys

Mother was explained to how to involve the child in play time with other children by using parallel play technique and gradually make the child to share the toys with other children. Mother was explained to make him to wait by using natural setting like; the child should wait for chocolate, until he complete the given task. Mother was instructed to explain the child that, he should wait for his father till the evening and prepare the child to wish others when he would meet others.

3.13. 2 Participating play

Mother was instructed to help the child for catch the boll, hit the ball, throw the boll in the basket, and use the bat to hit the ball, cut papers, buttoning his shirts, etc by using repeated trials. Mother was counselled to improve his speech by making the child to express his needs that the child should verbalize at least one word to reach his needs; it would motivate the child to express his needs through verbalization.

3.13.3 Self-help skills

She was explained to improve his self help skills and cognitive skills by using the natural settings of daily activities. She was instructed to use these techniques mainly to make the child little independent in the future.

Mother showed very much interest during the therapy process and was enthusiastic to know the new techniques which can improve her child's development. She used to continue the intervention process at home and spent lot of time with her child. She used to engage her child with different activities and new behavioural techniques. She used to follow the therapist instruction and continued the therapy process at home which made better improvement in the child's development.

IV. TERMINATION AND OVERALL EVALUATION

The 6 Six months of early intervention in a multidisciplinary approach, the child was able to respond to the name call; his eye contact was improved and could able to recognize his parents. He was able to speak 1-2 words. He could identify forms like, circle, square, and triangle. He could identify the fruits, vehicles, and house hold articles. He identified alphabets, and was able to write alphabets up to letter K. He counted up to numbers 20 and was able to write numbers up to 10.

4.1 Followup

As intervention for Pervasive developmental disorders takes long process and long duration parents were asked to continue the above techniques at home.

V. RESULTS AND DISCUSSION

5.1.1 Table-1: Improvement Observed After Six Months in Post Intervention

Pre Intervention	Post Intervention
Had poor eye contact	Can maintain eye contact for a while.
Attention and concentration was poor.	Attention was aroused and sustained for a while but not required period of time.
Unable to speak a single word	Able to speak 1-2 words
Did not have any form concept	Able to identify the circle, square, triangle, rectangle, star.
Unable to identify vehicles, fruits and house hold articles.	Able to identify vehicles, fruits and house hold articles.
Unable to write purposefully, only scribbling present.	Able to write alphabets up to letter K, and able to write numbers up to 10.
Not able to colour the pictures.	Able to colour the pictures with in the lines.
In SIT he likes to play with only one item.	In SIT he was able play with ladder, sand, touching different types of sensations.
Not able to mingle with other children.	Able to look at other children, trying to touch them, giving shake hands, and waving bye-bye when therapist instructed.
He was not able to sit for a required period of time.	Able sit for 30 min with therapist co-operatively
Making meaningless sounds was present.	Making meaningless sounds was reduced completely.
Touching his ear and enjoying the smoothness was present.	This behaviour was reduced completely.
He was not able to identify parents.	Can recognize parents when they are outside also, and tries to reach them.
Restlessness was present.	Restlessness was reduced some extent.

Table -1 gives the improvement of post intervention after six months. Master “V” was improved in maintaining eye contact, his attention was aroused and sustained for a while but not required period of time and his restlessness was reduced to some

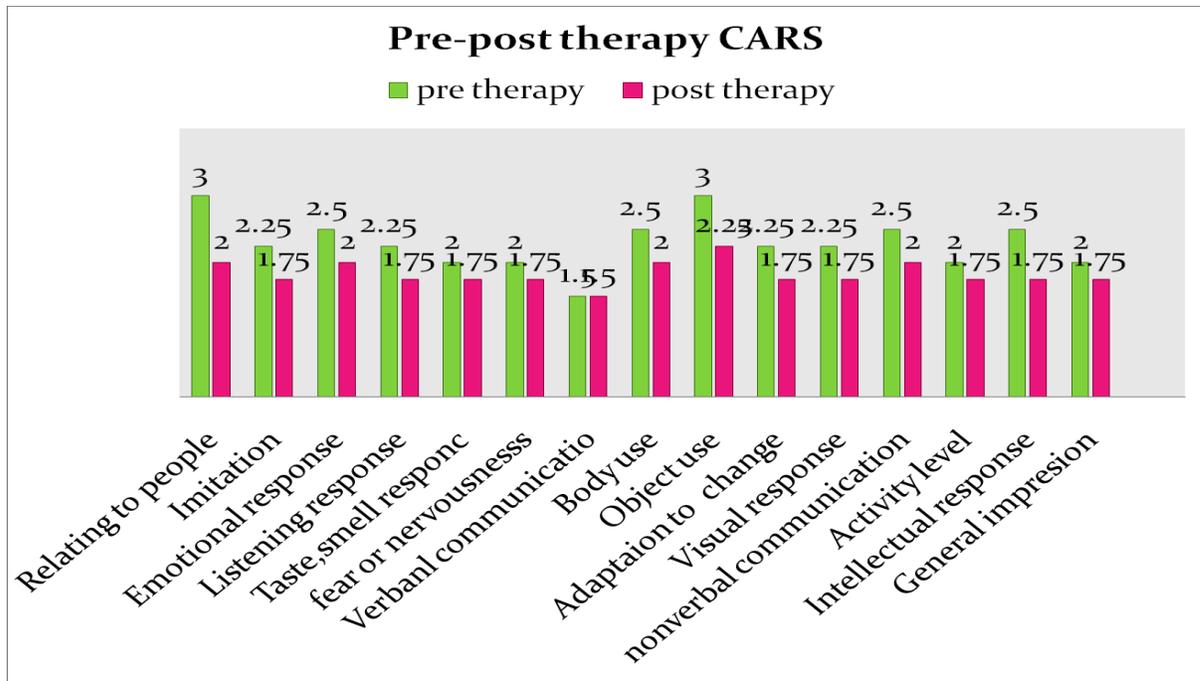
extent. He could able to sit for 30 min with therapist co-operatively and touching his ears behaviour was reduced completely. He could able to recognize parents, he could able to look at other children, trying to touch them, giving shake hand, and waving bye-bye when therapist instructed. He was able to speak 1-2 words, identify the circle, square, triangle, rectangle, star and recognize vehicles, fruits and house hold articles could able to write alphabets up to letter K, and able to write numbers up to 10 and can colour the pictures with in the lines. Over all the improvement was seen in Master “V” after 6 months of intervention.

5.1.2 Table-2: Pre- Post Intervention CARS Scores in Each Domain

S.NO	DOMAIN	PRE	POST
1.	Relating to people	3	2
2.	Imitation	2.25	1.75
3.	Emotional response	2.5	2
4.	Listening response	2.25	1.75
5.	Taste, smell response	2	1.75
6.	Fear or nervousness	2	1.75
7.	Verbal communication	1.5	1.5
8.	Body use	2.5	2
9.	Object use	3	2.25
10.	Adaptation to change	3.25	1.75
11.	Visual response	2.25	1.75
12.	Nonverbal communication	2.5	2
13.	Activity level	2	1.75
14.	Intellectual response	2.5	1.75
15.	General impression	2.	1.75

Table -2 gives the pre and post intervention CARS scores in each item. The CARS scores were reduced in relation to people, imitation, emotional response, listening response, taste, smell response, fear or nervousness, body use, objet use, adaptation to change, visual response, nonverbal communication, activity level, intellectual response, and general impression; but on verbal communication his score was remained same.

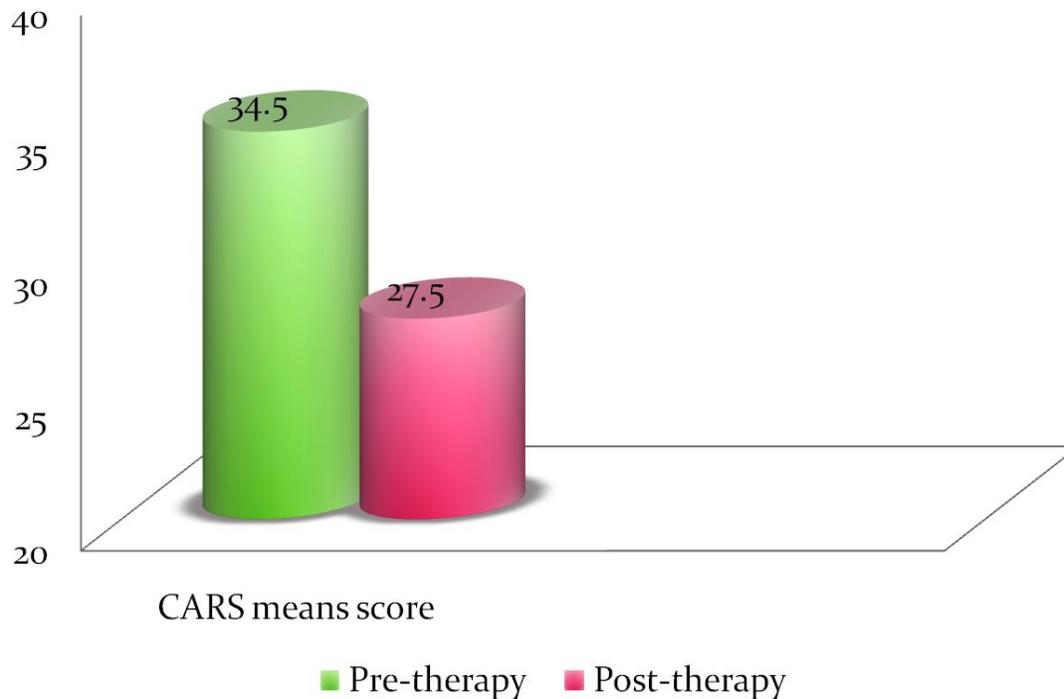
5.1.3 Pre-Post Intervention CARS Scores in Each Domain



Graph-1: Pre-Post Intervention CARS Scores in Each Domain

Graph -1 gives the graphical impression of pre and post intervention CARS scores in each domains. The CARS scores were reduced in relation to people, imitation, emotional response, listening response, taste, smell response, fear or nervousness, body use, object use, adaptation to change, visual response, nonverbal communication, activity level, intellectual response, and general impression; but on verbal communication his score was remained same.

5.1.4 Pre- Post Intervention CARS Total Score



Graph-2: Pre and post intervention total scores of CARS.

The above graph gives the pre-post intervention total scores of CARS. In pre – intervention his score was 34.5 which indicates the Mild -moderate autism. In post intervention total score of CARS is reduced to 27.5 which indicate the non-autistic category. It indicates that early intervention in a multidisciplinary approach was effective for children with autism.

VI. CONCLUSIONS

An early intervention can improve adaptive and personal-social behaviours of children with autism.

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