

Therapeutic Interventions and Developmental Progress in An Eleven-Year-Old Child With Autism Spectrum Disorder: A Case Study

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Abstract

Autism Spectrum Disorder (ASD) is a multifaceted developmental disease distinguished by difficulties in social communication, limited interests, and repetitive activities. Early intervention, including Speech and Language Therapy (SLT), has been shown to be effective in addressing the developmental challenges of individuals with ASD. This case study explored the efficacy of Speech and Language Therapy (SLT) interventions for an 11-year-old female diagnosed with Autism Spectrum Disorder. The results demonstrated that SLT interventions were effective in addressing the participant's developmental challenges. Significant improvements were observed in pre-linguistic skills, receptive language, fine motor skills, awareness of personal distance, and sensory sensitivities. These findings suggest that SLT is a valuable intervention for individuals with ASD.

Keywords: Autism Spectrum Disorder (ASD), Speech and Language Therapy (SLT), Speech and language pathology (SLP), Developmental Challenges, Pre-linguistic Skills.

1. Introduction

Autism Spectrum Disorder (ASD) is a multifaceted developmental syndrome marked by persistent difficulties in social interaction and communication, limited interests, and repetitive behaviors (American Psychiatric Association, 2013). The disorder exhibits its manifestations in individuals of all genders, races, ethnicities, and socioeconomic backgrounds, and its severity ranges from mild to moderate to severe (Centers for Disease Control and Prevention, 2023). Further investigation into the etiology of ASD indicates that its development is influenced by a complex interplay of genetic and environmental elements (Geschwind & Levitt, 2007). Frequently identified prior to the age of three, ASD is a condition that remains an individual's entire life.

There are numerous reasons why it is vital to look further into the complex nature of ASD. In the first place, healthcare professionals, families, and individuals are better able to identify and deal with potential obstacles when they have a comprehensive understanding of the disorder's fundamental attributes and symptoms. According to the National Research Council (2001), the provision of individualized support services and early intervention can have a substantial positive impact on the development of individuals with ASD and their overall quality of life.

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Additionally, an understanding of ASD enables the establishment of supportive and inclusive settings that advance the cognitive, social, and emotional growth of those affected. Society can be made more equitable and inclusive through the recognition and appreciation of the distinctive abilities and perspectives of those with ASD. In recent decades, considerable advancements have been achieved in the comprehension of the fundamental origins, attributes, and therapeutic approaches of Autism Spectrum Disorder (ASD). A robust genetic element has been identified in the disorder, wherein the development of the condition is influenced by multiple genes (Geschwind & Levitt, 2007). ASD may also be influenced by environmental factors, including prenatal exposure to specific medications or infections (Brown & Kaufmann, 2016).

In order to identify individuals with ASD, clinicians developed a wide range of diagnostic instruments and evaluation criteria (Lord et al., 2012). These instruments assess behavior, communication, social interaction, and interests to ascertain whether an individual aligns with the diagnostic criteria for ASD.

Intervention at an early stage has become a crucial element in the management of ASD. Research has demonstrated that intervention programs, including early intensive behavioral intervention (EIBI) and applied behavior analysis (ABA), improve social, communication, and adaptive behavior skills in individuals with autism ASD (National Research Council, 2001; Wetherby et al., 2018).

Pharmacological treatments have been found to be beneficial in managing specific symptoms associated with ASD, including anxiety, hyperactivity, and sleep disturbances, in addition to behavioral interventions (Aman et al., 2005; Handen et al., 2009).

This article provides a comprehensive analysis of a case study on an 11-year-old girl who was diagnosed with Autism Spectrum Disorder (ASD). The researcher investigates the subject's personality traits, social interactions, and behavioral patterns in relation to their developmental challenges. The heterogeneity of Autism Spectrum Disorder (ASD) and the imperative for personalized interventions and therapeutic strategies are underscored in the study through an examination of the distinct presentation of each individual.

2. Method

A cross sectional study was conducted to explore the effectiveness of Speech and Language Therapy (SLT) interventions in improving the developmental challenges of an 11-year-old female diagnosed with Autism Spectrum Disorder (ASD) over a 10-week period. The study aimed to assess the impact of SLT on the subject's preverbal skills, communication aptitude, sensory sensitivities, fine motor skills, and daily living activities.

The participant was diagnosed by a multidisciplinary team at Bangabandhu Sheikh Mujib Medical University (BSMMU) using The Autism Detecting Checklist (ADCL). She met the inclusion criteria for mild to moderate ASD. Additionally, a clinical evaluation conducted at the University of Dhaka detected the following conditions in her: intellectual disability, speech and language disorder, development delay, autism spectrum disorder, and socialization deficit.

Therapeutic interventions were administered by a qualified Speech and Language Therapist (SLT) over ten weekly sessions, each lasting one hour. The sessions targeted specific goals related to eye contact, attention, joint attention, prepositions, color concepts, fine motor skills, reducing echolalia, and sensory desensitization.

Data collection involved a multi-dimensional assessment comprising formal assessments such as the Comprehensive Observation and Manipulative Developmental Assessment of Language and Learning (COM-DEALL), Social and Language Developmental Checklist (SLDC), supplemented by qualitative observations recorded during therapy sessions. The assessments spanned preverbal skills, linguistic profiles, non-verbal communication, sensory perceptions, cognitive abilities, and daily living activities.

Qualitative analysis of the collected data involved systematic review and interpretation of observed changes, improvements, or challenges noted during and after each therapy session. The participant's progress was tracked against the predetermined developmental goals, with specific attention to changes in behavior, skills acquisition, and responsiveness to therapeutic interventions.

Ethical approval was obtained from the Proyash Institute of Special Education and Research, ensuring adherence to ethical guidelines and confidentiality. The study obtained informed consent from both the participant and her family. The procedure clarified the voluntary aspect of involvement and the participant's rights to withdraw from the study at any given moment.

The study found that SLT interventions were effective in addressing the developmental challenges of the 11-year-old female with ASD. The participant showed significant improvements in her preverbal skills, communication, sensory sensitivities, fine motor skills, and daily living activities. These findings suggest that SLT is a valuable intervention for individuals with ASD.

3. Result

Zara's journey through Speech and Language Therapy (SLT) sessions revealed a multifaceted developmental trajectory encompassing pre-linguistic skills, receptive and expressive language, fine motor skills, personal distance awareness, sensory responses, socialization, and self-help capabilities.

Pre-linguistic skills exhibited notable advancements, including improved turn-taking awareness, enhanced imitation skills, and a growing sense of anticipation. However, attention span limitations persisted, necessitating ongoing attention and support.

Receptive language skills showed gradual progress, with advancements in understanding colors, prepositions, pronouns, action words, and following simple commands. Zara's comprehension expanded, indicating developmental strides in this domain.

Assessment revealed a heterogeneous expressive language profile, with a limited but expanding vocabulary and the ability to imitate complete sentences and recite rhymes. Echolalia and irrelevant speech gradually reduced, with occasional instances observed.

Fine motor skills witnessed improvements, although challenges persisted. X's ability to write digits and letters into boxes and engage in fine motor activities showed gradual enhancement, indicative of a developmental trajectory.

Personal distance awareness and sensitivity to environmental stimuli like the Azan call to prayer and ambulance sirens improved. The gradual desensitization to these stimuli underscored improved tolerance and adaptability.

Joint attention and cooperation improved over sessions; however, challenges in socialization, particularly sharing food, remained unchanged. Progress was observed in engaging in joint play activities, albeit with intermittent manifestations.

Self-help skills showcased incremental progress, particularly toilet training, while feeding and dressing skills remained notably deficient. Incremental advancements were noted in achieving self-sufficiency. Here the progress before and after the session is shown graphically what was measured using a test tool Adapted from "11 Skills Toddlers Master Before Words Emerge from Let's Talk About Talking By Laura Mize, M.S., CCC-SLP.

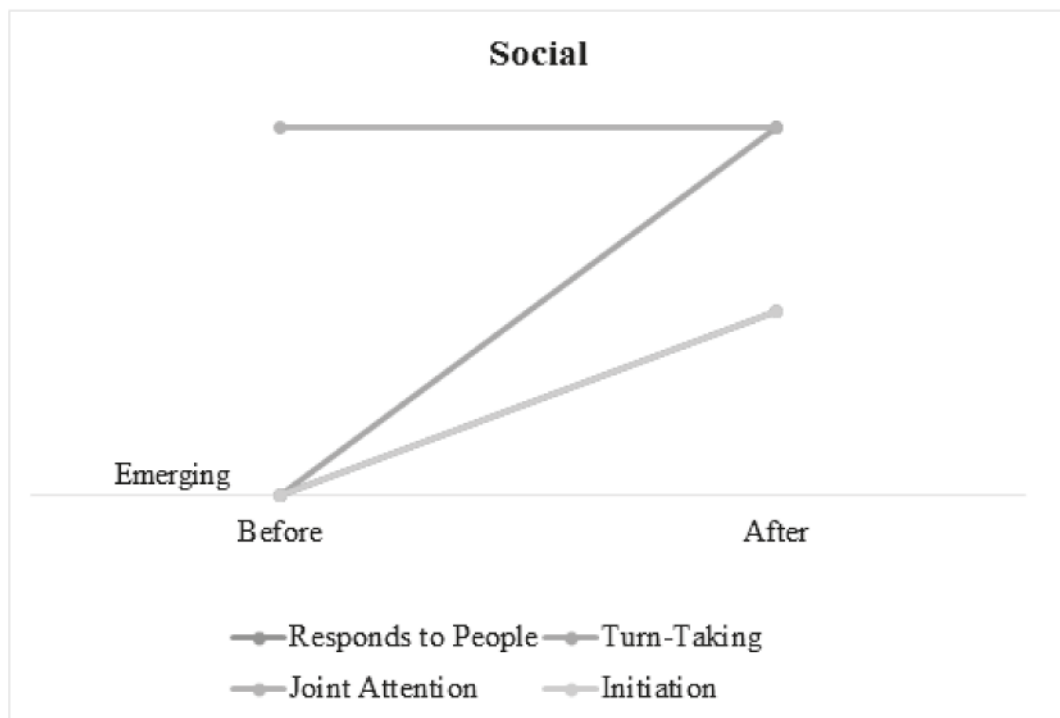


Figure 3.1: Progress in social skills before and after

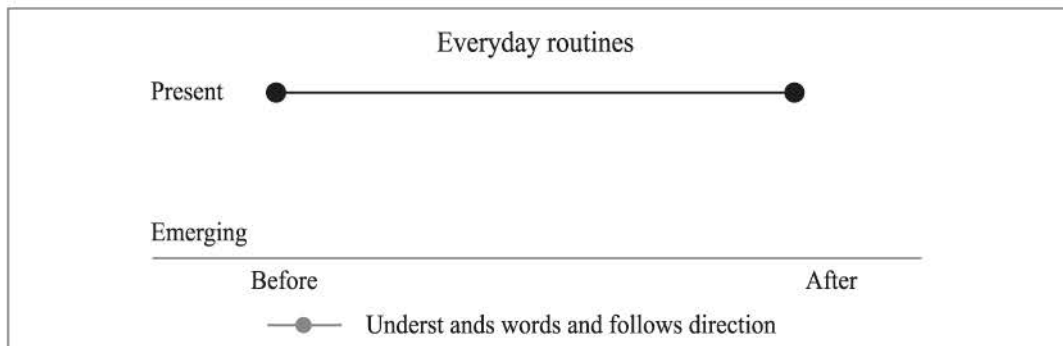


Figure 3.2 Progress in everyday routines skills before and after

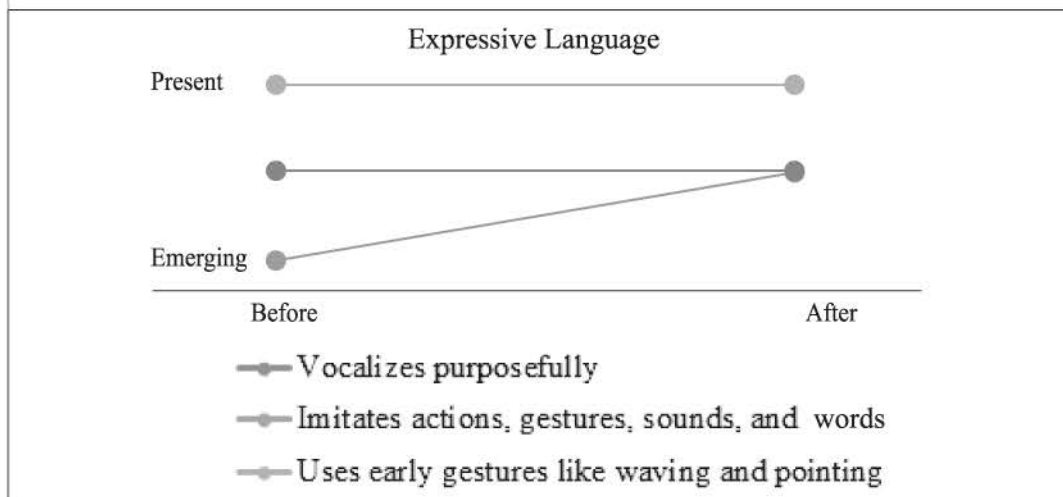


Figure 3.3 Progress in expressive Language skills before and after

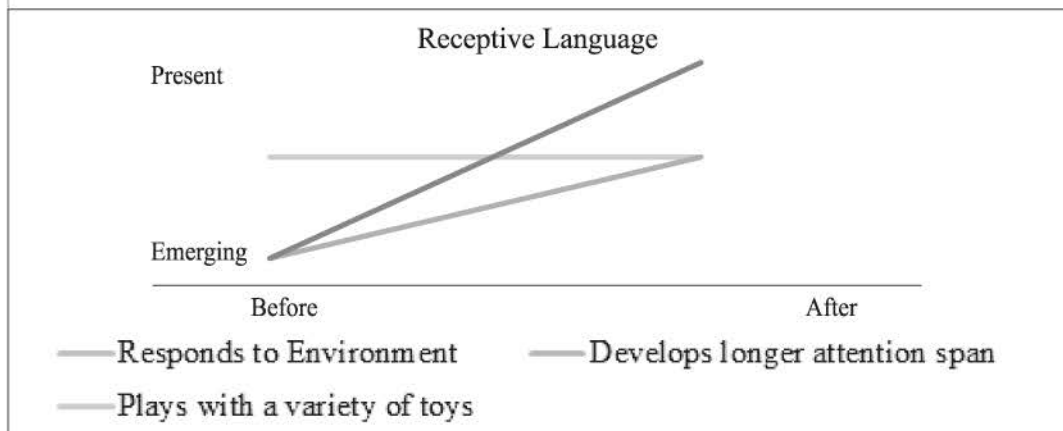


Figure 3.4 Progress in receptive Language skills before and after

Comparative session analysis revealed a gradual reduction in echolalia, irrelevant speech, and distractions. Consistent improvements were observed in eye contact, attention, and fine motor skills. Sensory sensitivities saw progressive reduction, although occasional heightened reactions were observed. Socialization and self-help skills demonstrated intermittent progress, whereas personal distance awareness showcased gradual improvement. In a table, all these changes are shown below.

Table 3.1 Changes in behavior before and after

Expressive Language	Changes in behavior
Echolalia & irrelevant speech	Reduced
Fine motor skills	Developing
Personal distance awareness	Developing
Sensitivity to environmental stimuli	Reduced

Zara's developmental journey presented a complex interplay of advancements and persistent challenges, highlighting the need for continued and targeted intervention strategies to optimize her communicative, adaptive, and social functioning

4. Conclusions and Discussion

The objective of this study was to investigate the efficacy of Speech and Language Therapy (SLT) interventions in addressing the developmental difficulties of an 11-year-old girl diagnosed with Autism Spectrum Disorder (ASD). The results of the study offered significant contributions to our understanding of the complex and varied qualities of her developmental path, uncovering progress as well as ongoing obstacles in numerous areas.

Significant progress was observed across multiple developmental domains for the participant, Zara's as a result of targeted SLT interventions. Pre-linguistic abilities, receptive language, fine motor skills, awareness of personal distance, and sensory sensitivities all demonstrated improvement. Nonetheless, socialization and self-help skills continued to present obstacles, demonstrating the continued necessity for focused interventions.

The intricate interaction among different developmental domains individuals diagnosed with Autism Spectrum Disorder, as evidenced by Zara's case, highlights the disorder's heterogeneous characteristics. Although specific therapeutic interventions demonstrated beneficial outcomes in some domains, the continued presence of obstacles in others underscores the necessity for customized and long-lasting interventions.

Early intervention is crucial for addressing the developmental challenges associated with ASD, as the study emphasizes. This underscores the potential effectiveness of targeted SLT interventions in augmenting diverse domains of motor skills, sensory processing, communication, and social interaction among individuals diagnosed with ASD.

Even so, the research also highlights the diverse and specific characteristics of Autism Spectrum Disorder (ASD), this emphasizes the significance of personalized therapies designed to focus on the unique challenges and needs of every child. The enduring nature of difficulties in specific areas indicates that individuals with ASD require continuous assistance and focused interventions in order to maximize their overall functional capacities and quality of life.

In summary, the SLT interventions achieved favorable results across multiple developmental domains for Zara. However, due to the elaborate characteristics of ASD, further investigation is necessary to determine the most effective approaches, personalized interventions, and comprehensive support systems that can address the diverse needs of individuals on the autism spectrum. To enhance intervention outcomes, future research should concentrate on developing more effective and individualized interventions, identifying predictors of treatment success, and comprehending the underlying mechanisms of ASD.

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Biography

Rehana Akhter Chowdhury is currently working as a Senior Lecturer at the department of Audiology and Speech-Language Pathology at PISER. She is also performing the duty of Department Coordinator and Clinical Supervisor. She holds Master's in Speech-Language Pathology from Dhaka University, M.Sc. in Geography from Dhaka University, B.S.Ed. from National University, and B.Sc. from Dhaka University. Her specialized training includes coursework in speech-language therapy at SAHIC, mentored by experts from Germany, the UK, and India. Additionally, she trained in clinical settings such as Bradford Royal Infirmary and St. Luke Hospital in the UK, and completed Auditory Verbal Therapy training in India. With 25 years at SAHIC as a teacher for the deaf and senior speech-language therapist, Rehana brings her expertise to her roles at PISER and as a part-time lecturer at Dhaka University. Her specializations include voice and fluency disorders, sensory processing, and feeding issues. She also provides training for BRAC professionals and educators working with special-needs children.

Md Hasan Al Banna graduated with a Bachelor of Science (Honours) in Audiology and Speech-Language Pathology from Proyash Institute of Special Education and Research (PISER), affiliated with Bangladesh University of Professionals, in 2024, earning a CGPA of 3.80 out of 4.00. His strong academic record was further recognized by PISER's Academic Excellence Award for 2021-2022. Hasan completed a comprehensive one-year internship, gaining clinical experience at Proyash, Combined Military Hospital (Dhaka), BSMMU, and MERF-ISH (India). His educational foundation includes an A+ in both Higher Secondary Certificate from Dhaka Residential Model College and Secondary School Certificate from Police Lines Adarsha High School, Tangail, in the science stream. Hasan's commitment to advancing speech-language pathology is reflected in his academic achievements, internships, and keen focus on clinical practice and audiology research, underscoring his dedication to contributing to the field.