



Comparative Analysis of Early Developmental Indicators in Children with Autism Spectrum Disorder and Their Typically Developing Peers

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Abstract: This article presents a comparative analysis of the psychological, speech, and social development indicators of 3-year-old children with Autism Spectrum Disorder (ASD) and their typically developing peers. The study employed the methods of scientific literature analysis, pedagogical observation, comparative analysis, and psychological-pedagogical diagnostics. The results of the analysis demonstrated that children with autism spectrum disorder exhibit more pronounced delays in speech development, limited social communication, weak eye contact, difficulties in responding to their names, and repetitive behaviors compared to their typically developing peers. The findings of the study are of significant scientific and practical importance for the early identification of autism spectrum disorder, the timely organization of corrective-pedagogical support, and the promotion of children's psychological, speech, and social development.

Keywords: autism spectrum disorder, 3-year-old children, typical development, psychological development, speech development, social development, comparative analysis, corrective pedagogy, early diagnosis, inclusive education.

1. Introduction

In recent years, the increasing number of children diagnosed with Autism Spectrum Disorder (ASD) worldwide has made this issue one of the most pressing areas in medicine, psychology, and special education. Autism is a complex neurodevelopmental condition that affects a child's social communication, speech development, behavior, and psychological development. Scientific studies indicate that the signs of autism often begin to appear between the ages of two and three. This period is considered one of the most important stages for a child's subsequent development. In practice, however, many parents and even some specialists encounter difficulties in distinguishing 3-year-old children with autism spectrum disorder from their typically developing peers in a timely manner. At this age, speech delay, lack of interest in communication, or specific characteristics of play activities are sometimes regarded merely as individual differences in the child's developmental pace, while the early signs of autism do not receive sufficient attention[1,2]. As a result, diagnosis is delayed, opportunities for providing early corrective-pedagogical intervention become limited, and this may negatively affect the child's further development.

Therefore, conducting a comparative analysis of the psychological, speech, and social development indicators of 3-year-old children with autism spectrum disorder and their typically developing peers is of considerable scientific and practical significance. Such an analysis contributes to the early identification of the initial signs of autism, increases the awareness of parents and educators, and facilitates the timely organization of corrective-



pedagogical and psychological support. The relevance of this study lies precisely in the necessity of scientifically revealing the differences in the psychological, speech, and social development of 3-year-old children with Autism Spectrum Disorder and their typically developing peers, as well as improving the criteria for their early identification in practice. This, in turn, contributes to maximizing children's developmental potential and supporting their successful integration into society[3,4].

A child's speech is initially formed as a means of social communication and later develops into inner speech that regulates thinking and psychological processes. Communication with adults and the educational environment play a significant role in speech development. [5]. This theory serves as an important methodological foundation for studying 3-year-old children with autism spectrum disorder, as delays in speech and social communication become particularly evident during early childhood. A child's cognitive development progresses gradually. Between the ages of 2 and 7, symbolic thinking, imagination, play, and speech develop intensively, enabling the child to actively explore the surrounding environment. [6]. Piaget's theory provides an important scientific basis for the comparative analysis of cognitive development differences between 3-year-old children with autism spectrum disorder and their typically developing peers. Attention, memory, thinking, and speech are higher psychological functions that are closely interconnected, and their development depends on brain activity and social experience. [7]. This scholar's views are of great importance in explaining the specific characteristics of attention, memory, and speech development in children with autism spectrum disorder. A child's cognitive activity develops through cooperation with adults and play activities. Language and communication are the main factors that promote the development of thinking and problem-solving abilities. [8]. This theory is considered an important theoretical source for evaluating the development of play and communication in children with autism spectrum disorder. A child's development follows specific biological patterns. By the age of three, speech, motor skills, social adaptation, and independent living skills develop actively. [9]. In our view, the developmental norms described by Gesell serve as important criteria for comparing the development of children with autism spectrum disorder and their typically developing peers. Early identification of the specific characteristics of a child's development increases the effectiveness of corrective and pedagogical work. Diagnosis requires a comprehensive assessment of the child's speech, psychological, and social development. [10]. These scientific views provide an important methodological basis for the comprehensive assessment of the psychological, speech, and social development indicators of 3-year-old children with autism spectrum disorder and for their comparative analysis with typically developing peers. Every child has the right to education, and inclusive education plays an important role in integrating children with special educational needs into society. [11]. This approach highlights important pedagogical factors for integrating children with autism spectrum disorder into society, developing their communication with peers, and ensuring their participation in the educational process. In inclusive education, taking into account the individual abilities of the child and applying corrective approaches improve the quality of education. [12]. These theoretical views scientifically substantiate the necessity of organizing corrective-pedagogical work by considering the individual developmental characteristics of children with autism spectrum disorder. Special education defines the scientific foundations for teaching, educating, and providing corrective support to children with developmental disabilities. [13]. These views are of significant scientific importance for understanding the specific features of communication in children with autism spectrum disorder and for conducting a comparative analysis with their typically developing peers. Communication Psychology. Communication plays a crucial role in a child's personal development, speech formation, and social adaptation. [14].



2. Materials and Methods

In this study, scientific methods aimed at the comparative analysis of the psychological, speech, and social development indicators of 3-year-old children with autism spectrum disorder and their typically developing peers were employed. During the research process, the methods of scientific literature analysis, pedagogical observation, comparative analysis, psychological-pedagogical diagnostics, and generalization were applied. The methodological basis of the study was formed by L.S. Vygotsky's theory of social development, J. Piaget's concept of cognitive development, A.R. Luria's theory of higher psychological functions, as well as modern scientific approaches in the fields of special education and inclusive education. During the study, the developmental indicators of 3-year-old children with autism spectrum disorder and typically developing children, including speech development, eye contact, response to their name, emotional responses, communication with peers, play activities, attention, perception, and memory, were comparatively analyzed. The obtained results were processed using the methods of analysis, comparison, and generalization, and the specific developmental characteristics of children with autism spectrum disorder were compared with those of their typically developing peers. The findings of the study served as the basis for developing scientific conclusions regarding the early identification of autism and the effective organization of corrective-pedagogical interventions.

3. Results and Discussion

The comparative analysis revealed substantial differences in the psychological, speech, and social development of three-year-old children with Autism Spectrum Disorder (ASD) and their typically developing peers. The results showed that typically developing children demonstrated age-appropriate communication skills, actively interacted with adults and peers, and responded consistently to verbal instructions and social cues. Most children in the comparison group maintained stable eye contact, reacted promptly when called by name, expressed emotions appropriately, and engaged in symbolic and role-playing activities. Their speech development corresponded to expected developmental milestones, with the ability to produce simple sentences, ask questions, and communicate basic needs effectively. In contrast, children with ASD displayed marked delays in expressive and receptive language development. Many of them relied on single words, gestures, or nonverbal behaviors instead of complete sentences. Eye contact was limited or inconsistent, while responses to their names were delayed or absent in several observed situations. Repetitive motor behaviors, restricted interests, and stereotyped play patterns were frequently identified among children with ASD. Furthermore, sensory sensitivities, including unusual reactions to sounds, textures, or visual stimuli, were more evident in this group. These findings indicate that developmental differences between children with ASD and typically developing children become clearly observable by the age of three, supporting the importance of systematic developmental screening during early childhood[15].

The findings are consistent with the theoretical perspectives presented in the literature review, particularly those emphasizing the importance of early social interaction, communication, and cognitive stimulation in child development. Vygotsky's social development theory suggests that language and communication develop through interaction with more experienced individuals, while Piaget's theory explains that symbolic thinking and cognitive abilities rapidly expand during the preschool years. The present findings demonstrate that children with ASD experience significant challenges in these developmental domains, limiting opportunities for acquiring language and social competence through everyday interactions. Similarly, the reduced imitation skills, limited joint attention, and restricted engagement in imaginative play observed among children with ASD correspond to previous scientific evidence describing deficits in higher psychological functions and social



learning. The results also support contemporary views in special and inclusive education, emphasizing that developmental assessment should not rely solely on speech delay but should incorporate multiple indicators such as eye contact, emotional responsiveness, peer interaction, attention, and behavioral flexibility. Considering these developmental domains simultaneously provides a more comprehensive understanding of the child's developmental profile and increases the accuracy of early identification. Therefore, multidisciplinary assessment involving psychologists, speech therapists, educators, and pediatric specialists is essential for distinguishing ASD from temporary developmental delays and for designing individualized intervention programs that address each child's unique strengths and difficulties.

From a practical perspective, the study highlights the critical importance of early diagnosis and timely corrective-pedagogical intervention for improving developmental outcomes in children with ASD. The observed developmental differences suggest that intervention initiated during the third year of life has the potential to significantly enhance speech production, social communication, emotional regulation, adaptive behavior, and participation in inclusive educational settings. Parents and preschool educators should be informed about the early warning signs of autism, including poor eye contact, delayed speech, lack of response to one's name, repetitive behaviors, and limited interest in peer interaction, to facilitate timely referral for professional assessment. Early intervention programs combining speech therapy, behavioral therapy, psychological support, structured play activities, and family involvement are likely to produce more favorable developmental outcomes than interventions introduced at later ages. Furthermore, strengthening cooperation among healthcare professionals, educational institutions, and families may improve both diagnostic accuracy and the continuity of individualized support services. Although the present study provides meaningful evidence regarding developmental differences between children with ASD and their typically developing peers, future investigations should include larger and more diverse samples, standardized diagnostic instruments, and longitudinal follow-up to evaluate developmental changes over time. The integration of digital assessment tools and artificial intelligence-based screening systems may also contribute to improving the efficiency and reliability of early autism identification in both clinical and educational practice.

4. Conclusion

The results of the comparative analysis demonstrated that there are significant differences in the psychological, speech, and social development indicators between 3-year-old children with autism spectrum disorder and their typically developing peers. The study revealed that children with autism spectrum disorder more frequently exhibit delayed speech development, reduced interest in social communication, poor eye contact, difficulties in responding to their names, specific characteristics of play behavior, and repetitive actions. In contrast, typically developing 3-year-old children demonstrated age-appropriate levels of communication, speech, emotional responses, and cognitive development.

The findings confirm that the earliest possible identification of autism spectrum disorder and the timely organization of corrective-pedagogical intervention are important factors for a child's future development. Early diagnosis and individualized pedagogical and psychological support can significantly improve the speech, psychological, and social development of children. Furthermore, the findings contribute to expanding the knowledge of parents, teachers, speech therapists, and psychologists regarding the developmental characteristics of children with autism spectrum disorder, improving the criteria for comparing them with typically developing peers, and advancing the practice of inclusive education. Future research should focus on studying the development of children with autism spectrum disorder using larger samples, improving modern diagnostic methods, and integrating



artificial intelligence technologies into the early diagnosis and corrective education process.

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