

THE IMPORTANCE OF EARLY DIAGNOSIS AND INTERVENTION FOR CHILDREN WITH AUTISM SPECTRUM DISORDERS

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Abstract: *The problem of autistic spectrum disorders is a subject frequently discussed at present due to an increased number of children who have shown autistic symptoms in recent years. Early diagnosis is a first step towards integrating the child with autism into a therapeutic programme and implicitly to alleviate delays in developing these children. The main research method was the case study. This article discusses how early diagnosis influences the subsequent development of the child with autism and the results of different therapies on alleviating the delays in these children's development.*

Key words: *autism, early diagnosis, development delays, therapeutic intervention*

1. Introduction

Autism has become more and more present nowadays, as it is customary on television, newspapers or even posters. According to Yoshida (as cit. in Barber, 2013), about 1% of the world population has autism. In the last two decades, the incidence of ASD increased from 2-5 to 15-70 out of 10,000 children. This dramatic increase is attributed to both higher medical attention and the extension of diagnostic criteria (King & Bearman, 2009).

Autism spectrum disorders are also known as pervasive developmental disorders, the term “pervasive” being used to describe the group of behavioural disorders with multiple difficulties in developmental areas that generate a complex of features and traits (Verza, as cit. in Roşan, 2015). Autism is a disorder that affects individuals from birth or childhood and is diagnosed with the presence of three symptoms: social deficits, impaired language, repetitive or stereotypical behaviour (Piven, 2000). It is usually evident around the age of 3 and has a higher frequency in boys than in girls. Statistics show that about 5 out of every 10,000 persons suffer from autism, regardless the social environment (Gherguţ, 2013).

Dixon, Granpeesheh, Tarbox and Smith (2011) describe the risk factors associated with the occurrence of autistic spectrum disorders as they emerge from a comprehensive review research. They refer to:

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- siblings – brothers of autistic children are at greater risk of developing autism than other children;
- response to name – lack of response to name calling can be predictive for the subsequent diagnosis of autism;
- joint attention – attention deficit can make the difference between children with autism and other children;
- communication – deficits in communication at very early age may be predictive of later diagnosis of ASD;
- motor and sensory skills – children with ASD show significant impairment in motor skills relative to typically developing peers.

The causes of autism have not been yet clearly highlighted. Studies show that autism has a high level of heritability, being associated with numerous genetic and environmental risk factors (Cantor, 2009).

2. Early Identification and Early Intervention in Autism

In this paper, the emphasis is on the role of early diagnosis and early intervention on improving of the delays in these children's development. Also, this paper presents a research in this respect, which highlights the importance of identifying autistic symptomatology, addressing the physician specialist in order to obtain a diagnosis and also the early therapeutic intervention.

Establishing a diagnosis as early as possible and discovering an appropriate treatment are perhaps the most important desiderata of the intense research activity carried out. Evidence of the first signs of autism in children under two years of age was usually indicated by parents, different home videos, and case studies of children later diagnosed with autism (Bryson, Rogers, & Fombonne, 2003).

The diagnosis of autism is based on assessing children's behaviours and abilities. Development scales and various standardized tools are used to establish this diagnosis. Diagnosis is a key point in recovering for the child with autism as it takes the next step, namely the therapeutic intervention.

Specialty literature makes an important distinction between early diagnosis of autism and demonstrating the benefits of early treatments applied to the autism symptomatology (Warren, McPheeters, Sathe, Foss-Feig, Glasser, & Veenstra-VanderWeele, 2011). While the benefits of early intervention are widely accepted by the scientific community (Dugger, 2012; Koegel, Koegel, Ashbaugh & Bradshaw, 2014), a large number of research highlights the difficulty of establishing an early, even preliminary, diagnosis of disorder of autistic spectrum. Early therapeutic intervention contributes to relieving autistic symptoms and enhancing desired behaviours even if the degree of severity of turbulence can be very different.

The most used therapies are the behavioural ones, such as ABA (Applied Behaviour Analysis, Lovitt, 1993), TEACCH (Treatment and Education of Autistic and Related Communication Handicapped Children, Mesibov, Shea, & Schopler, 2004), PECS (Picture Exchange Communication System, Frost & Bondy, 1994), but complementary and empowerment therapies are also used, such as occupational therapy (Case-Smith, & Bryan, 1999), assisted animal therapy (Becker, Rogers & Burrows, 2017), music therapy (Kim, Wigram & Gold, 2009), swimming training (Pan, 2010), or even game therapy (Nedelcu, Chicos, & Dobrescu, 2010).

Dugger (2012) appreciates, in an extensive research article devoted to the benefits of early intervention, that “since communication is usually significantly impaired in individuals with autism, I believe by identifying autism and providing early intervention support will reduce developmental delays resulting in an improvement in overall quality of life” (p. 5). The invoked argument is that of the plasticity of the human brain in the early years of life. Other authors have also noted that there is scientific evidence that early intervention led to significantly better outcomes (Wetherby & Woods, 2006). In a study carried out on children aged 17-36 months, early diagnosed, was found after therapeutic intervention on the most affected areas, an improvement in “language/communication, reciprocal social interaction, and symbolic play” (Wong & Kwan, 2010, p. 677). Corsello (2005, p. 75) noted: “Two aspects of intervention that are common to most intervention programs designed for ASDs and have empirical support include the intensity of the program and the age at which children should begin intervention”.

In terms of early diagnosis of ASD, research indicates that “expert clinicians are now able to diagnose autism reliably by age of 3, and even 2” (Bryson, Rogers, & Fombonne, 2003, p. 507). According to the same authors, unfortunately, “evidence indicates that most children are not diagnosed prior to the age of 4, typically at least 2 years after parents first seek professional advice because they are concerned about their child’s development” (p. 507).

The late diagnosis of autistic spectrum disorders is due to “the limitations of existing screens and, more generally, our lack of knowledge of early developmental trajectories symptomatic of autism” (Bryson, Rogers, & Fombonne, 2003, p. 508), for a long time “developmental patterns of ASD children in the first 18 months of life have largely been a mystery” (Matson, Wilkins, & Gonzalez, 2008, p. 77), more research has found that “in some populations, missed diagnosis and misdiagnosis of ASD are common” (Pinto-Martin, & Levy, 2004, p. 391).

For the early diagnosis of autism the following behaviours are taken into account: the child does not smile as a reaction to the smile of his or her companions, does not seek affection, does not identify the meaning of words, talks about himself / herself as a second person and wants isolation.

The most important markers that can contribute to the early diagnosis of autistic spectrum disorders are (cf. Zwaigenbaum, et al., 2016, pp. 812-835): reduced levels of social attention and social communication, atypical body movements and motor development, temperamental profile, repetitive behaviour with objects, atypical trajectory of early language and nonverbal development and, atypical trajectory of early social communication skills. All these authors conclude that early diagnosis and early intervention will help children with autism to increase the degree of independence in the adulthood. The therapeutic intervention contributes to ameliorating autistic symptoms and enhancing desired behaviours even if the degree of severity of each autistic child is different.

3. Research Methodology

In this research, the method used is that of the case study, this being a qualitative research method that takes into account the complex exploration of individuals or situations. The design of the research is transversal, the children were observed once with

the help of an observation grid. Considering the relationship with the participants in this study, this research is predominantly descriptive-explanatory.

3.1. Research Goals and Hypothesis

The general objective of this study is to identify the role of early diagnosis of children with autism in alleviating delays in their development. From this general objective we derived 4 specific objectives: 1) Investigating the developmental problems of the children with autism included in the research; 2) Assessing the level of development of children with autism, corroborated with the moment of their diagnosis; 3) Investigating the therapeutic development of children with autism included in research by reference to the therapeutic methods they benefited from; 4) Differential efficiency assessment of the therapeutic programmes undergone, depending on the severity of developmental deficits of children with autism included in the research.

The general hypothesis of this study assumes that early diagnosis of children with autism and their early inclusion in a specific therapeutic programme contributes decisively to the alleviation of developmental delays. From this hypothesis, according to the objectives outlined above, the following specific hypotheses arise: 1) We assume that there are significant differences in the development of children with autism included in the research depending on the moment of their diagnosis; 2) We assume that early diagnosis of children with autism contributes to their early introduction into a specific therapeutic programme; 3) We assume that attending several specific therapeutic programmes contributes significantly to alleviating the developmental delays of children with autism; 4) We assume that there are significant differences in the effectiveness of different therapeutic programmes.

3.2. Research Tools

This study consists of 4 case studies, and the interviewer, observation grid and document analysis were used to collect the data. The interview guide is addressed to therapists and contains 13 open-answer items. These items are grouped into four dimensions: diagnosis and therapeutic intervention, social behaviour and emotional behaviour, communication and stereotype behaviour. Its purpose is to identify the effects of early diagnosis and intervention on the development of children with autism.

The observation grid for the behaviour of children with autism is structured in 4 dimensions. It also contains 24 items that can be scored on a scale from 1 to 5 according to the frequency with which the behaviour manifests (1 - never occurs, 5 - is permanently manifested). The analysis of the documents consists in analysing the anamnesis of each child included in the research in order to identify the relevant data of this study. The anamnesis of each child included in the research was analysed and the most important information was selected by reference to the assumptions of the research.

4. Presentation of Case Studies

4.1. Case Study Number 1

B. D., 12-year-old male subject, was born at 36 weeks, with 2,80 kg and 48 cm. The APGAR score obtained was 8. At the age of 3, B. D. was diagnosed with autism, his

mother being the person who noticed the child's delays and regression. The subject had a normal development, until the age of 1 he babbled, but then came a period of time in which the child completely regressed and he uttered the first words at the age of four. Since the age of 4, B. D. has benefitted from therapeutic intervention. Over the years he has benefited from play-therapy, swimming therapy, speech therapy, but the therapeutic intervention that had an impact on the subject was the cognitive-behavioural therapy. The attendance of the subject at therapy sessions was consistent, with 2 hours of therapeutic intervention daily.

The fact that the subject has benefitted from diversified therapies from the age of 5 and that he has been consistently attending therapy sessions, has led to the alleviation of the developmental delays. So, in the area of socialization and emotional behaviour, there was an improvement of the deficient behaviour. The deficient behaviours that have improved through therapies are the following: the subject manages to sit at the work table and carry out the task, cooperates with the therapist, accepts the opinion of others, easily accommodates to new people and greets adults. Also from an emotional point of view, the subject does not throw himself on the floor, having a better control of intense emotional experiences. All these behaviours support hypothesis number 3.

4.2. Case Study Number 2

T. A., a 9-year-old female subject, was born at 39 weeks with 3,00 kg and 43 cm. She got an APGAR score of 9 because she did not cry immediately after birth. At the age of 2 she was diagnosed with autism. The person who first noticed delays in the subject's development was her mother. The first symptoms occurred at the age of 1 when T. A. was not responding, not cooperating with close family members and having various fixations. From the age of 3 she has benefitted of therapeutic intervention, and during these years she has benefited from cognitive-behavioural therapy, speech therapy, play therapy and animal-assisted therapy.

All therapeutic interventions have had a significant impact on the subject's development, meaning that the child has begun communicating with others, cooperating and managing to carry out tasks. The subject was diagnosed between 18 and 36 months, more precisely at the age of 2, so the diagnosis may be considered early. Also, immediately after that, at the age of 3, T. A. was introduced into an intervention programme. These data support the hypothesis number 2 that early diagnosis of children with autism allow their subsequent introduction into an early therapy programme.

4.3. Case Study Number 3

Male subject, V. I., 7 years old, was born by caesarean section, having 2,90 kg and 50 cm, but achieved the APGAR score of 9. At age 4 years and 9 months, he was diagnosed with autism. The subject kept his head high at 2 and a half months and sat in sitting position at 4 months. The child had no visual contact with the close ones and did not cooperate with them; this was considered normal by parents, due to the age of the child, thus, the child was evaluated only after the age of 4 at the urge of relatives and friends. The subject has benefitted from therapeutic intervention from the age of 6, in the first month attending 2 hours daily and then 2 hours 3 days a week. The therapeutic

programmes attended by V. I. were both communicational and cognitive-behavioural therapy, both of which contributed to the alleviation of developmental delays.

Subject V. I. was diagnosed with late autism at 4 years and nine months old and was introduced into a therapy programme at the age of 6. This data helps us verify hypothesis number 2 compared to the other 2 cases.

4.4. Case Study Number 4

A. L., 9-year-old male subject, was born at 39 weeks, 3,10 kg and 47 cm. The APGAR score he received was 9/10. At the age of 4, he was diagnosed with autism. The boy did not respond when he was called by his name, started to walk with difficulty, and then walked on tip toes. His mother and grandmother noticed these deficient behaviours, which raised a question. A. L. was diagnosed with ASD at the age of 4, after which he was involved in a six-year therapeutic programme. A. L. attends therapy sessions twice a week for two hours.

The therapeutic intervention consists of cognitive-behavioural therapy. Diagnosing A. L. was not performed after the period of 18 to 36 months, period during which diagnosis is early, only at 4. Also, the therapeutic intervention is late and inconsistent; this data provided useful information for checking hypothesis number 2, the subject attending therapy sessions only twice a week for two hours.

5. Conclusions

This research started from the idea that early therapeutic intervention plays an important role in alleviating the developmental delays of children with autism. But we cannot talk about therapeutic intervention without talking about diagnosing children with ASD, as these two are closely related.

In the present research, children were observed for a month during therapy sessions to identify the level of development but also to make a comparison between them on the level of development based on the moment of diagnosis and therapeutic intervention.

The first objective was to investigate the developmental problems of children with autism that were included in the research. Thus, as a result of the research, we have identified that all children included in this research had developmental problems in different areas. These problems consisted of lack of control of strong emotional states, echolalia, aggression, stereotypical movements, etc. And after analysing the data, the first hypothesis, according to which there are significant differences in the development of children with autism, was confirmed. The differences consisted in the frequency with which the deficient behaviour was manifested, but also the type of behaviour. For example, one of the children only communicated in English (case number 3) while another child very often imitated commercials (case number 1).

The second objective was to appreciate the level of development of children with autism in conjunction with the age they were diagnosed. Thus, the second hypothesis was confirmed, that the diagnosis and early introduction of ASD children into a therapeutic programme contribute significantly to ameliorating specific developmental issues. Of all four cases, two of the participants were diagnosed with autism at an age when the diagnosis was considered to be early, and at one year's distance they were integrated into

a therapy programme. We can consider this to have an impact on the development of these two children.

The third objective was to investigate the therapeutic development of children with autism in relation to the therapeutic methods they have benefitted from. Within this objective, hypothesis number 3 was confirmed, thus, children who have benefitted from a variety of therapies such as play therapy, animal-assisted therapy, swimming therapy, cognitive-behavioural therapy over time, showed progress in the area of communication and social development.

The final objective was to evaluate the effectiveness of the therapeutic programmes undergone according to the severity of the developmental deficits of the children included in the research. Thus, the hypothesis that there are significant differences in the effectiveness of various therapeutic programmes has not been confirmed neither contradicted because the data from this research was not enough to verify this hypothesis.

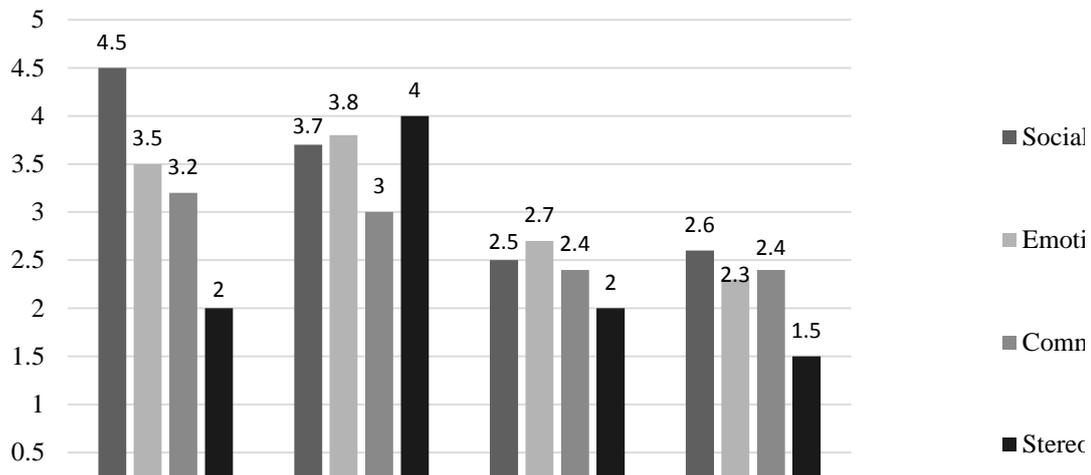


Fig. 1. *The Development of Subjects on Areas*

As shown in figure 1, all subjects included in the research present difficulties in different areas, for example subject number 1 has problems with stereotypical behaviour. These problems consist in the fact that he smells almost anything, has facial tics and repetitive gestures. Subject number 2 presents difficulties in the area of communication, which is related to the fact that she has echolalia and often speaks in English.

In number 3 and number 4 subjects, we can notice that the level of development in all four areas is significantly lower than in the first two subjects. They present difficulties such as aggressive and stereotyped behaviour, echolalia in speech, lack of initiative in communicating with others, lack of empathy and lack of emotional control.

Subjects number 1 and 2 were diagnosed with autism during 18-36 months, period of time in which diagnosis is considered to be early and the other two subjects were diagnosed after this period, and for this reason we can say that the first two subjects are more developed than the last two. It can be said that early diagnosis contributes to alleviating the developmental delays of children with autism.

Therapies Undergone by the Time of the Research

Table 1

Subject no. 1	Subject no. 2	Subject no. 3	Subject no. 4
Cognitive-behavioural therapy Speech therapy Ludo therapy Swimming Therapy	Cognitive-behavioural Therapy Speech Therapy Ludo therapy Animal Assisted Therapy	Cognitive-behavioural Therapy Speech Therapy	Cognitive-behavioural Therapy

Table 1 lists the types of therapy each subject has benefitted from throughout its life. We notice that those who have alleviated developmental delays have benefited over the years from multiple therapies. We can admit that participating in multiple therapies contributes to alleviating delays in the development of children with autism.

5. Discussion

The participants included in the research present difficulties in different areas of development. All participants are included in one or more therapeutic programmes and participate consistently in therapy sessions. The cases analysed showed that the severity of these deficiencies may be partially associated with the moment of diagnosis and the moment of diagnosis is closely related to its integration into a therapy programme. As described above, early diagnosis contributes decisively to the alleviating of developmental delays.

Another factor contributing to alleviating delays in the development of children with autism, we consider to be the diversification of therapeutic methods. Thus, among the analysed cases, those who have benefitted from several therapeutic intervention programmes throughout their lives show signs of better control of negative experiences, initiate social contact and have fewer deviant behaviours.

In conclusion, identifying the characteristic symptoms of autism and accepting them by parents is very important for the child. Because, after identifying the symptoms, parents can ask specialists for a diagnosis, and if the child with the autistic spectrum disorder is diagnosed early, that is, between 18 and 36 months old, his chances of living an independent life in future are much bigger. Early diagnosis allows parents to subsequently provide these children with specialized therapeutic intervention, and if their participation is consistent, remarkable advances in child development can be observed.

This study presents a number of limitations without having a major impact on the findings of this research. The major limit lies in the fact that generalizations cannot be made on the basis of the reduced number of subjects included in the research and the method used. Also, if this research were accompanied by data collected longitudinally, it would have been much easier to analyse the developmental differences in each case. Also, the data collected was not sufficient to confirm or refute the last hypothesis.

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