SUPPORT METHODS IN THE DEVELOPMENT OF CHILDREN WITH MENTAL RETARDATION AND AUTISTIC ELEMENTS

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Abstract

Autism is part of a group of neurodevelopmental disorders. The support methods used throughout the developmental process of children with autism are necessary both for maintaining the neuronal plasticity, and for limiting anomalous development. The present study assesses the contribution of the support methods in the development of a child with moderate mental retardation and autistic elements, both in terms of parental perception, and psychological estimation. The weight value of the importance of acknowledged support methods – educational, psycho behavioural or medical – is presented, as well as that of the complementary ones – religious and family counselling. The advantage of the support methods in physical, cognitive, emotional, and behavioural development, but also that of improving communication and social interaction, have been parentally and psychologically assessed.

Keywords: mental retardation, autism, support methods

1. Introduction

Autism spectrum disorders (ASDs) are a group of neurodevelopmental disorders that include autistic disorder, childhood disintegrative disorder, Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS), Rett syndrome and Asperger's syndrome [1]. The ASDs diagnosis is based on three types of qualitative disorders: speech and communication, social interaction and repetitive behaviour disorders [2]. Apart from the mentioned ones, neurological-psychological-emotional disorders may simultaneously occur: seizures, anxiety disorders, depression, aggression, self-aggression, etc. [3]. The support methods for the development of children with autism are various and attempt to achieve the personal development goals of the child, as well as to maintain the stability

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of the family. The support methods used by the parents can either be the acknowledged ones, but also the alternative or the complementary ones. Among the used traditional support methods, the following may be mentioned: educational, psycho behavioural, medical. The complementary or alternative methods include: religious support, craniosacral therapy, music therapy, therapy with animals, dietary therapy, sports activities, etc. [4, 5]. The complex neuro-sensory, cognitive, intellectual, behavioural and social impairment of the child deeply affects the family environment. The parental stress caused by the special education and care requirements can reduce family cohesion, adaptability and the social relationships of the family members [6]. In such circumstances, family support therapy is needed. Families who have a child with autism often require the services of specialized care providers or family support therapy. Their role is either to take over the parental duties under an excessively tight schedule according to the special requirements of the child, or to teach techniques and methods for mutual support in the family [6]. For families where there is an autistic child, counselling is recommended both for the child's development, and as support for the mental, marital health and interaction within the family [7]. The financial aspects allocated in a public and private system, as well as the families' resources are important in choosing the support methods called-for throughout the child's development.

2. Case presentation

Male subject M.A., aged 17 and 6 months, is presently being schooled in a special class for children with autism and mental deficiency, at the School Centre for Inclusive Education (SCIE) no. 1 in Sibiu. From past personal pathological record and medical history, the following may be noted: child born at the age of 32 weeks, with 1st degree prematurity, foetal distress at birth, congenital valgus leg, presenting postnatal neuro-psycho-motor developmental delay. Motor development is slow; he manages to walk on his feet at the age of 1 year and 10 months. He pronounces the first words at the age of 1 year and 8 months. After turning 3 years old, the child becomes hyperkinetic. Dyslalia and undifferentiated imitations occur and he develops behavioural stereotypies. At the age of three, he is diagnosed with hypothyroidism, mental retardation and delayed speech development. Sphincteric control is being performed at 4 years. Speech develops slowly. He formulates simple sentences at the age of 4 years old. At 6 years old he is being hospitalized for motor stereotypies, psychomotor agitation moments, speech impairment, echolalia and disconnection. The neurological examination records: alternating convergent strabismus, subtle pyramidal signs and deficient fine coordination. The psychiatric examination reveals: partially achieved psychical contact, almost continuous psychomotor restlessness. He is being released with the diagnosis: moderate mental and speech retardation with autistic elements. At 12 years old, the neurological examination records: mild bi-pyramidal syndrome, fine and unrefined motor disabilities. The psychological examination reveals: disconnection; relational

difficulties; lack of behavioural modulation according to the external social signals; motor and playful stereotypy's; lack of emotional reciprocity; moments of anxiety and agitation triggered by minor external stimuli; non-modulated, unsynchronized speech that lacks reciprocity in conversation; and immediate and delayed echolalia. The following diagnosis was given: Moderate mental retardation (Intelligence Quotient – IQ = 42) with autistic elements, Cerebral micro-sequels. The assessments conducted during the following years preserve the same diagnosis. At the 16 year old assessment, the following diagnosis is provided: Moderate mental retardation (IQ = 47) and Atypical autism. The diagnosis is maintained until the present.

2.1. Support methods and learning pathways

The support methods for development were: medical gymnastics, kinetic therapy, speech therapy, psychological stimulation, cognitive stimulation, Montessori therapy, family counselling, religious support, personalized didactic support and drug therapy.

During the first months of his life he was included in a medical gymnastics program. Starting with the age of 3 and up to 9 years old, he covers the educational and developmental stages in the Montessori program, at the specialized kindergarten part of the Psychiatric Hospital. At the age of 9, the child receives a school expertise and orientation certificate in the first grade, at Special School no. 1 in Sibiu. Adapting and accommodating with the school requirements does not happen, and the parents decide to postpone schooling and continue with the Montessori program until he is 10 years of age. From the age of 10 and up to 13 years old, he benefited of speech therapy, kinetic therapy, cognitive stimulation, Picture Exchange Communication System (PECS) therapy, programs of socialization. Beginning with the age of 12 years old and until present, he has been part of the special class educational program for children with autism and severe mental deficiency in SCIE no. 1 in Sibiu, where he covers a custom curriculum, a personalized intervention plan (P.I.P.), cognitive stimulation, psycho-motor therapy, speech therapy, kinetic therapy, and a program of socialization.

Starting with the age of 3 and up to the age of 12 years old, he was administered a permanent drug treatment using: Tanakan, Cerebrolizin, Encephabol, Tonotil-N.

Religious assistance begins at the age of 4, and from the age of 9 he maintains a rhythmical and constant religious program.

The family counselling for the parents was done during the repeated hospitalizations of the child to the Psychiatric Hospital. Once the PECS program was initiated, the parents attended special classes of specific stimulation for children with autism, in order to receive the qualification of co-therapist parents. For a period of three years, they were integrated in a support group for parents with autistic children.

3. Purpose, objective and study method

The purpose of the study was to qualitatively assess the role of the support methods in stimulating the development increments of the child with autistic elements.

The proposed objective was that of assessing the parental perception regarding the development of the child with autistic elements, alongside the psychologist's analysis made on the capacity of the support methods to improve his development.

The used method was applying questionnaires. The questionnaires comprised the methods used to stimulate the development of the child and the main parameters observed. The methods were as follows: medical gymnastics, drug therapy, PECS, Montessori therapy, speech therapy, psychological stimulation, personalized intervention plan (PIP), religious support, family counselling. The assessment of the development was done by assigning the rating figures for the following parameters: physical, neurological, intellectual, cognitive, emotional, speech, communication, social interaction, behaviour, stereotypies. The scale used to evaluate the parameters, consisted of figures from zero to three, where their significance was as such: 0 – no effect, 1 – low effect, 2 – medium effect, 3 – high effect. The absolute values of the scores obtained were converted to percentage values.

The questionnaire was addressed to the mother of the child, whom was requested to note the evolution of the parameters observed throughout the entire development period, as well as the weight value in which the support methods had contributed to the development of the child with autism. At the same time, the questionnaire was addressed to the psychologist of the Centre for Inclusive Education, who assessed the possibility of each support method contributing in the development of the child, as well as their capacity to influence the studied parameters. As a consequence, the data assessing the expectation level regarding the performances of the support methods were presented in parallel with those of parental perception of the child's development support level achieved with the help thereof.

4. Results and discussion

The obtained results were grouped into the following categories:

- the weight level of child development sustentation by means of all support methods;
- the weight level of the importance of each support method used in the general development of the child;
- the weight level of each separate parameter improvement by means of all methods used.

4.1. The weight level of child development sustentation by means of all support methods

As per the parental assessment, the support methods used were effective for a development and recovery rate of 64.44%; the results estimated by the psychologist were of 58.88%. The support methods can sustain the child's development, but the genetic and the psycho-somatic context limited the achievement of higher performances. Both the parental assessment and the psychological estimation depict the limitations of the support methods, the performed rating suggesting that in a proportion of over 35%, the performances depend on other factors. However, it is noted that in the family environment there has been a higher level of perception of the advantage of the support methods in obtaining the results and the performances of the child, as compared to the psychological estimation.

4.2. The weight level of the importance of each support method used in the general development of the child

Throughout the study, the role of each method used for stimulating the general development of the child was assessed. Table 1 presents the support methods, the parental and psychological assessment of the contribution of each method to the development of the child.

Table 1. The percentage rate of the contribution of each support method in the development of the child.

The support method	Percentage (%)	
	Parental perception	**Psychological estimation**
Medical Gymnastics	9.19 %	6.28 %
Drug Therapy	10.91 %	9.43 %
PECS	14.36 %	13.20 %
Montessori Therapy	9.77 %	13.20 %
Speech Therapy	8.04 %	11.32 %
Psychological stimulation	11.49 %	13.20 %
PIP	11.49 %	11.94 %
Religious Support	13.21 %	9.43 %
Family Counselling	11.49 %	11.94 %

It is worth mentioning that both for the parental assessment and the psychological one the use of the PECS was of major importance. Differences between the parental assessment and the psychologist one arise with regard to the religious support, the speech therapy, the Montessori therapy, the psychological stimulation and the medical gymnastics. Following the parental assessment, the results obtained through religious support and medical gymnastics were considered superior. At the same time the results were assessed by parents to be more reduced as regards the speech therapy, the psychological stimulation and the Montessori therapy, as opposed to the psychological

estimation. Values close to the estimates were recorded on whatever regards the family counselling and the Personalized Intervention Plan (PIP).

4.3. The weight level of improvement of each separate parameter by means of all methods used

Table 2 presents the results of the assessment on what regards the role of all support methods for the development of the studied parameters.

Table 2. The percentage rate of the improvement of each parameter by means of all support methods used.

Parameters	Percentage (%)	
	Parental perception	**Psychological estimation**
Physical	10.91 %	8.17 %
Neurological	9.77 %	6.28 %
Intellectual	10.34 %	10.69 %
Cognitive	9.19 %	11.32 %
Emotional	12.06 %	11.94 %
Speech	9.19 %	9.43 %
Communication	9.77 %	13.20 %
Social Interaction	12.64 %	10.06 %
Behaviour	9.19 %	10.69 %
Stereotypies	6.89 %	8.17 %

According to the parental assessment, the development of the child by means of all support methods was perceived as yielding the best results in the field of social interaction, emotionality, physical and intellectual development. The psychological evaluation assessed the improvement of the communication development, as well as improvement in the emotional, cognitive, intellectual, behavioural field. Minimum results have been parentally perceived in controlling stereotypies, and the psychologist estimated a limited evolution of the parameters whose substrate is the neurological development.

The disturbances in the morphological structures and the brain functions occurring during intrauterine development and extensively augmented after birth are responsible for the manifestations that characterize the child with autism [8]. Current research seeks to explain the pathogenesis of autism through genetic and molecular studies that should clarify the involvement of the neuro-psychological systems, that may constitute targets for pharmacological and support intervention for the child's development. Among the factors involved in maintaining brain plasticity and its normal development, the following may be listed: the brain-derived neurotrophic factor (BDNF), the cholinergic system, the glutamate neurotransmitter system, the GABA-ergic system, the serotonergic system, etc. [8]. The support methods attempt to intervene precociously, modulating these systems both to maintain neuronal plasticity and to limit anomalous development. The complex and diversified involvement of the

factors in the pathogenesis of autism gives rise to development particularities for each case. Within this context, the individualization of the assistance provided to each child through support methods is required, accordingly with the pathological particularities and the special needs. Therefore, the prediction of the results, as well the parental perception of recording the progress in the development of children with autism, may vary significantly from one case to another.

In literature studies an attempt is made to establish correlations between the genetic anomalies and the occurrence of behavioural, emotional, social changes, etc. assessed using specific scales [9]. The present study has been limited by the inability of performing genetic and molecular analyses during the early signs of autism. The conducted research emphasizes on the need to individualize the support methods for each child with autism and the implementation of scales for predicting the results, in conjunction with the results obtained and perceived by the family members. Their implementation would allow a better customization of the initial intervention plan and ongoing adjustment of assistance through the most suitable methods.

5. Conclusions

As a conclusion, the advantage of the support methods in the development of children with autistic elements has been parentally perceived at a rate of 64.44%, which is higher that the one estimated psychologically, i.e. 58.88%. The support method with the maximum advantage was parentally perceived as being the PECS, which is consistent with the psychological estimate. At the same time, the parental perception study reveals the significance of religious support and of medical gymnastics in sustaining the development of the assessed child. According to the parental perception, all support methods used have supported the development of the following parameters: social interaction, emotionality, physical and intellectual development, while being slightly dissociated from the psychological estimation in terms of communication development, cognitive and behavioural improvement. Minimum results have been parentally perceived in the control of stereotypies.

Therefore, involving the parents in assessing the results obtained through the support methods may constitute an essential element in the decision of individualizing the many-advantage intervention plan.

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