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Abstract: Representing a problem of global importance, autism has been placed internationally in the list of diseases with increasing incidence. An increase in the frequency of autism is observed in the last decade.[4,6]

The main goal we want to highlight in this study is the recovery treatment of children with autism through kinetic means, investigations used for the recovery of these children, the effectiveness of its treatment, as well as awareness of the importance of physical therapy in this condition.[2,9]

To carry out this work, we started from the hypothesis that by using the means of physical therapy we will have positive effects in the case of the recovery of the patient with autism. In conclusion, we can say that we managed to show how effective the recovery treatment for autism is and that this condition can be improved with the help of physical therapy.

Introduction. The main definition found in most specialized works is that autism is a global impairment that can be associated with mental retardation, cognitive disorders.[5] Currently, patients who are diagnosed with autism can benefit from physical therapy or speech therapy, art therapy, music therapy, occupational therapy, sensory integration. One of the current methods that have quite good benefits on children with Autism is the 3C therapy (Consciousness, Coordination and Concentration), which is currently performed by most therapists, most of them noting the benefits brought to children by recovery plans.[1,7,10]

In the entire recovery process, Kinetic therapy along with other therapies play an important role in the recovery process of the patient suffering from Autism. A good thing to know before starting the recovery process is that the work done in the whole recovery process is quite big, throughout the recovery plan the Physiotherapist must show a lot of patience with patients, a main reason being that the whole recovery process can last for years.[3,8]

Material-method

The main reason why I wanted to choose this theme was the desire to be able to highlight the importance of physical exercises applied to the improvement

and improvement of psychomotor disorders specific to the autistic spectrum, but also to be able to verify the applicability of physical exercises in patients suffering from Autism.

By writing this paper, I wanted to highlight the kinetic means that help the recovery of patients suffering from autism, but also to put into practice the knowledge acquired after years of study.

Working hypothesis and objectives

The hypothesis from which we start in the present work is the following:

Following a physical therapy program that is well structured and organized can contribute to the whole recovery process of the child suffering from Autism and at the same time preventing disorders related to coordination, statics and balance.

The main objectives that I proposed in order to write the paper "Recovery by kinetic means of the child with disorders of the autistic spectrum" are the following:

- Deepening of the specialized literature for disorders on the Autism spectrum.
- Determining the difficulties our patient has and the way of work we must follow.
- Planning Kinetic techniques and procedures that aim to meet all the needs of our patients.
- Establishing a well-organized and staged work program in order to rehabilitate the patient with disorders on the Autistic spectrum.

The movement is used as a method of therapy by which the interaction between the groups is followed, the integration to the group but most importantly the establishment of a visual contact between the therapist and the patient thus being able to establish a certain degree of communication.

Among the therapeutic means based on Kinetotherapy includes the 3C therapy promoted and applied in the first phase by Paul Cojocariu, it is one of the therapies that brings a great benefit to these patients because it works on coordination, awareness and concentration. The 3 characteristics that form the basis of this therapy are the ones that will form the foundation of laterality and correct body schema.

The location of the study.

The above study was carried out in the "Steaua Speranței din Suceava" center in Suceava.

Presentation of cases.

Patients who participated in the study were 3 patients between 5 and 8 years old. The ratio in the case of this study was 2 girls and one boy, patients being diagnosed with autism around the age of 2-3 years and following the evaluations

carried out by a therapist specialized in this condition, it emerged that the patients present balance disorders walking and coordination.

CASE NO. 1 is 6 years old

The first child who was chosen for the research project is 6 years old and around the age of 2 she was diagnosed with ASD and ADHD by a specialist neuropsychiatrist.

Case no. 2 is 5 years old

In the case of our study, the second child is diagnosed with elements of the Autism spectrum and with neuropsychomotor retardation, this being the result of a road accident in which the child was involved around the age of 1 year and 8 months.

Case no. 3 is 8 years old

In the case of the 3rd child, he lives with his parents and has no siblings. The recovery program on the patient was carried out a year ago because in the same period the child received the diagnosis of Autism.

Currently, the child does not attend kindergarten, but within the family he has a normal relationship with the child-parent family.

The recovery program started on 11.01.2022 and ended on 19.07.2022 during all this time a staged work program was used which was adapted according to the needs of the patient. In the case of this work program it was divided into 3 stages, at the beginning and at the end of each stage a patient assessment was carried out to be able to see if the results obtained are favorable or if the work program needs changes.

Table 1 Score obtained by patients in initial and final evaluations

<i>Initial and final assessment of patients</i>						
	<i>Pacient 1</i>		<i>Pacient 2</i>		<i>Pacient 3</i>	
	<i>T.i</i>	<i>T.f</i>	<i>T.i</i>	<i>T.f</i>	<i>T.i</i>	<i>T.f</i>
EVALUATION OF PREHENCE	5	5	4	7	4	5
EVALUATION OF THE BODY SCHEME	4	4	2	2	2	4
EVALUATION OF LATERALITY	0	2	4	4	2	3
ASSESSMENT OF FINE MOTOR SKILLS	6	7	9	11	9	10
EVALUATION OF BALANCE	1	2	3	3	3	3
Total point	16	20	22	27	20	25

The maximum score that the patient could obtain for each assessment is:

- Apprehension evaluation – 10
- Evaluation of the body scheme - 10
- Evaluation of laterality - 6
- Fine motor skills assessment – 14

Presentation of the recovery program.

The recovery program was carried out over a period of approximately 6 months. Within this program, the exercises were applied individually to each patient, the recovery program being modified throughout and focused exclusively on the patient's degree of cooperation but also the degree of evolution.

According to specialized literature, before the recovery program it is advisable to make sure that the whole body is prepared for the effort, this was achieved through several gymnastics exercises:

After performing the warm-up exercises, the patient will have to perform some exercises for the recovery of the body after the effort, consisting of some breathing exercises.

The main way of working that we used in the present work was the use of motor trails to also stimulate the patients' interest in the recovery program.

In order to be able to train the patient's coordination in the recovery program, we tried to use games and activities where the patient has to insert a ball into a basket. But in order for the patient to be able to reach the place where the ball must be inserted into the basket, he must reach that point with the help of a device like a car in which he must be placed in a prone position. The mode of movement will be achieved by alternately moving the upper limbs forward and backward.

In order to be able to work with the patient on the part of prehension, I asked the patient to insert a few pieces that look like cylinders into a bowl. During current activities, the patient had to work with his right hand, alternating with his left hand. In this exercise the patient repeated about 4 times, in the first part the patient put cylinders with the right hand and then with the left hand.

In the recovery program we also used eye-hand coordination, this was used to be able to train the patient's attention which was used in the ball game. In the first part of this exercise, a medium-sized ball, also called a Bobath ball, will be rolled on the ground about 30 times, then in this exercise, a smaller ball will be used in which the patient must hit it on the ground, and towards the end the same movement will be used but with a basketball. This game is very well used to establish eye contact between the therapist and the patient.

After the final evaluation of the three patients, we graphically interpreted the obtained results.

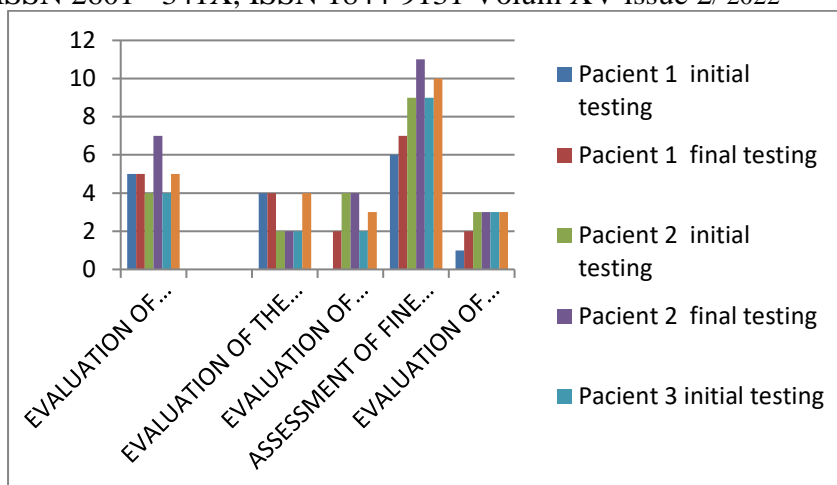


Fig. 1. Graphical interpretation of the results obtained by the three patients

Discussions

In the table presented above, you can see the changes that appeared as a result of the recovery program applied to our patients over a period of 6 months.

In comparison with the assessment carried out at the beginning of the recovery program, it was possible to observe the fact that during the assessment of balance 2 out of 3 patients presented a stagnation and only one patient presented an evolution, this is also due to the fact that during the initial assessments the first 2 patients did not show any visible changes in balance, which is almost normal according to specialized literature.

In the prehension assessment, the first patient presented a regression compared to the initial assessment, if in the first assessment the patient obtained a score of 5 points, in the intermediate assessment the patient obtained a score of 4 points, but in the final assessment the patient obtained a score of 5 points. So therefore we can say that the patient did not show an evolution compared to the initial evaluation, but an important thing in this evaluation is the regression. The other patients compared to patient no. 1 showed a favorable evolution in prehension, patient no. 3 in the final evaluation obtained 3 points more compared to the final evaluation.

In the case of body schema assessment, in 2 patients a stagnation was obtained compared to the final assessment and in only one patient an increase of one point was obtained in the final assessment compared to the initial assessment

In the laterality evaluation, only one patient presented a stagnation in the final evaluation compared to the initial evaluation. The other 2 patients presented an evolution in this case. A good aspect to point out is that a patient obtained an

evolution only up to the intermediate evaluation, after the intermediate evaluation the patient did not obtain a different score, the values remaining constant.

In the case of final patient evaluations 2 and 3 obtained favorable results in fine motor skills evaluations.

In these evaluations, the results were influenced by the patient's condition, as well as by the patient's age and attention deficit.

In the case of this pathology, acquiring new activities that the patient can perform requires a very long period of time.

For the most correct evaluation, it is necessary that the attention deficit be reduced as much as possible and the establishment of eye contact between the therapist and the patient throughout the program.

Conclusions.

1. Within this condition, the construction of a well-structured recovery program can contribute extremely much to the recovery process of the patient who is diagnosed with autism spectrum disorders.

2. Most of the goals we set at the beginning of the recovery program have been met.

3. The recovery program was carried out for a duration of approximately 6 months in which an evolution but also a stagnation of the patients could be observed.

4. Most of the patients had a deficit of fine motor skills that remained towards the end of the recovery program.

5. In the recovery program, the recovery of gross motor functions was attempted, which led to a much more active participation of the children in the recovery program.

6. In the final evaluation, not all patients achieved the expected results, some of the patients were only able to achieve stagnation.

7. Following the recovery program, we were able to conclude that a patient suffering from autism spectrum disorders requires a much longer recovery time.

8. Within this recovery program we were able to observe the fact that the results can be influenced by the degree of attention but also by the patient's anxiety.

9. Adherence to a phased recovery program configured according to the patient's needs can influence the recovery process.

Recommendations.

When the patient enters recovery groups, the feeling of loneliness disappears and can influence the patient's speech and communication with other children.

Hippotherapy helps to increase the self-confidence of the patient, which proves that alternating with alternative therapies is a benefit for the patient.

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