

Motor Activity And Autism Spectrum Disorder: New Scenarios In The Field

Perrotta F. , Professor of physical and sports education - UNIMOL – Italy

Keywords—gymnastics, autism therapy, autism spectrum rehabilitation

Introduction :

Motor activity is very important for the correct development of the individual since, through the discovery and exploration of one's body and environment, movement and playful activity, individual and group, it is possible to learn numerous skills in different areas of development, knowing oneself and others better, one's potential and limits, the social and emotional rules that govern interpersonal relationships.

For a person with autism spectrum disorder, motor activity can also represent an important opportunity for the development of functional skills precisely in the areas that are most compromised by the disorder: the area of communication, that of social interaction, of interests and behavior in general.

Education through play, movement, sport and group activity offers the subject a concrete opportunity to acquire early, in integrated contexts, the fundamental assumptions of primary and secondary intersubjectivity, the primary categories of space and time, the basic social rules and the most suitable behaviors in different contexts.

Through motor activity it is then possible to acquire skills that can be spent in daily life with respect to the knowledge and care of one's body, the management of anxiety and stress through the learning, for example, of effective ways of emotional self-regulation or, more in general, personal autonomy skills and healthy lifestyles.

The DSM-5, or the Diagnostic and Statistical Manual of Mental Disorders, now in its fifth edition, includes Autism Disorder in the nosographic category of Neurodevelopmental Disorders, thus defining the following diagnostic criteria:

A. Persistent deficits in communication and social integration:

1. Impairment of socio-emotional reciprocity such as reduced sharing of interests, emotions or feelings;
2. Impairment of non-verbal communicative behaviors useful for social interaction such as lack of facial expression, lack of eye and body contact;
3. Impairment of management and understanding of relationships such as lack of interest in peers, difficulty in sharing the game of imagination.

B. Restricted, repetitive behavior, interests or activities:

1. Stereotyped or repetitive movements, use of objects or speech (example: simple motor stereotypes, placing objects in a row);
2. Adherence to the routine lacking in flexibility, verbal or non-verbal rituals (example: need to walk the same path or eat the same food every day);
3. Very limited interests;
4. Hyper- or hyporeactivity in response to sensory stimuli (example: apparent indifference to pain / temperature, sniffing or touching objects in an excessive way).

Symptoms must also be present in the early period of development and involve clinically significant impairment of overall functioning (family, social, occupational).

Autism varies in severity based on the level of impairment that limits autonomy in daily life.

Children with autism spectrum disorder generally have symptoms that manifest themselves with difficulty in communication and social interaction, difficulties in understanding the thoughts of others and difficulty in expressing themselves with words or gestures or with the use of facial movements.

In addition, we can also find a hypersensitivity towards noises and sounds, and repetitive and stereotyped body movements, such as rocking, self-stimulation or hand clapping.

They may also have unusual responses to people, attachment to objects, resistance to change in their routines, or aggressive or self-harming behavior.

In addition to the "Autism Spectrum Disorders", DSM V introduces the "social communication disorder" which overlaps, but partially, with autism. This is because it requires the presence of an "impairment of pragmatic language" and an impairment "in the social use of verbal and non-verbal communication". The two disorders can be differentiated by the presence in the autism spectrum disorder of restricted-repetitive patterns of behavior, interests or activities, and by their absence in the (pragmatic) social communication disorder.

As for the causes of this complex disease, however, they are still unknown to this day, although researchers agree that acquired neurobiological, constitutional and psycho-environmental causes come into play in autism spectrum disorders. After an autism

diagnosis, the common question from all parents is "caused my child's autism?" The answer is that there is no simple answer. Research points to a combination of potential causes of autism that may or may not play a role in diagnosis.

Motor activity is very important for the correct development of the individual since, through the discovery and exploration of one's body and environment, movement and playful activity, individual and group, it is possible to learn numerous skills in different areas of development, knowing oneself and others better, one's potential and limits, the social and emotional rules that govern interpersonal relationships.

For a person with autism spectrum disorder, motor activity can also represent an important opportunity for the development of functional skills precisely in the areas that are most compromised by the disorder: the area of communication, that of social interaction, of interests and behavior in general.

Education through play, movement, sport and group activity offers the subject a concrete opportunity to acquire early, in integrated contexts, the fundamental assumptions of primary and secondary intersubjectivity, the primary categories of space and time, the basic social rules and the most suitable behaviors in different contexts.

Through motor activity it is then possible to acquire skills that can be spent in daily life with respect to the knowledge and care of one's body, the management of anxiety and stress through the learning, for example, of effective ways of emotional self-regulation or, more in general, personal autonomy skills and healthy lifestyles.

In the therapeutic field, sport is therefore of great importance, although it is still little used.

In the past, there have been many projects aimed at people with autism. In most cases, however, the playful and sporting component has been underestimated and set aside, to make room for issues considered more important and priority, such as school integration, rehabilitation, job placement.

Only in recent years have we been able to witness a slight change of course, mainly due to greater awareness and a more global vision of what is the well-being of the child with autism. The goal therefore becomes the improvement of the quality of life of these subjects, which also includes the sporting and playful dimension. In fact, there are many studies that affirm the importance of physical activity for the physical and mental health of disabled people. In the case of autism, physical activity is able to significantly reduce motor stereotypies and aggression and increase the levels of attention and concentration.

In fact, this disorder, in the absence of severe intellectual disability, can progressively be reduced to a partial independence of the subject.

In the psychotherapeutic field of cognitive behavioral matrix, it is possible to use different support / support techniques such as analysis applied to behavior (ABA) which aims to reduce problematic and dysfunctional behavioral habits through the construction of adaptive behavioral rituals.

In the field of psychomotricity, one of the techniques par excellence is the T.M.A. or the Multisystemic Therapy in Water, developed by the Italian psychologists Caputo Giovanni and Ippolito Giovanni.

It is defined as multisystem because it evaluates and intervenes on the different functional systems of the child, i.e. on the relational, cognitive, behavioral, emotional, sensory-motor and motivational system using water as an emotional, sensorial, motor activator, capable of pushing the subject with communication, relationship, autism and generalized developmental disorders to a meaningful relationship.

It was born with the aim of becoming part of a global rehabilitation project, which takes particular care of the relational, emotional and social integration aspects.

The swimming techniques and skills acquired during the intervention are used as a vehicle to achieve therapeutic goals and subsequently also implement the fundamental process of socialization and integration with the peer group.

It is applied to subjects between the ages of 3 and 24 through the planning of an individualized intervention based on human relationship and is aimed at re-education and modification of cognitive, behavioral, communicative, emotional and mutual social interaction schemes. The intervention, therefore, acts or can act on the alleviation of symptoms, positively modifying the communicative-relational processes, and inducing important internal changes (growth and development of the self) in terms of behavior and social interaction.

The methodology of this intervention is divided into four phases:

1. Evaluative;
2. emotional-relational;
3. sensory-swimming;
4. social integration;

Based on this methodology, the therapy session in water will consist of a first evaluation phase in which the patient's disorder will be analyzed, in this specific case we are talking about the autism spectrum disorder, and the symptoms that characterize this pathology.

Moving on to the emotional-relational phase, a personalized water intervention plan is established.

Attention is therefore focused on specific aspects and short, medium and long-term objectives are established regarding:

- The relational aspect: through a gradual acceptance of the therapist, the subject is able over time to rely on it and to consider it a "secure basis"; there is an increase in direct gaze (deficient in this disorder), game sharing and the execution of simple tasks. These changes will also have a positive effect on daily life.
- The behavioral and sensory aspect: there will be an improvement in autonomy, a decrease in behavioral and verbal stereotypies, an increase in attention skills and waiting times.
- The emotional aspect: the subject will develop a greater tolerance to frustration, will learn to respond adequately to stimuli and to recognize emotions.
- The communicative aspect: reduction of echolalias, use of congruous and functional language and the verbalization of emotions.
- The cognitive aspect: understanding complex verbal messages, greatly increased ability to imitate and repetition, increased concentration in tasks that last over time.

The achievement of these objectives is made possible largely by the medium of water, in which the child or the subject must rely almost completely on the instructor who, through play, empathy, the use of various didactic tools will try not only to make develop basic swimming skills in the subject but to establish a relationship with him, earning his trust day after day, until he is seen as a reference figure.

Initial and simple exercises such as simply sitting by the pool, talking to the subject, splashing the water, or even just "accompanying" the student in the preparation, then helping him get dressed, put the clothes in the bag, lead him by the hand from the changing rooms the pool environment is aimed at establishing a relationship with the child, at helping him overcome that initial uncertainty and distrust that characterizes the disorder he is the bearer of.

In the sensory-swimming phase it will be possible to introduce more specific exercises, which will concern the learning of basic swimming skills, for example it will be possible to lead the child in the first guided dives, the raw teaching of the kick and the stroke through the use of tablets or floating tubes, dives from the edge of the pool, elementary games of throwing and retrieving floating and non-floating objects. These exercises are targeted, as the instructor will always be in close contact with the student who will slowly begin to look at him as a reference figure, as a "secure base". Consequently, in the student we can begin to experience the first improvements such as the increase in direct gaze, increase in verbal comprehension, execution of simple tasks, increase in waiting times.

In the last phase, that of social integration, new and difficult situations can be experienced, for example by increasing the distance with the therapist, new dynamics and games can be developed with the peer group that will foster trust in oneself and in others.

References :

- Study on correlation between motor and memory learning, Palma, D.D., Perrotta, F., Tafuri, D. *Journal of Human Sport and Exercise*, 2019, 14(Proc5), pp. S1950–S1962- ISSN:1988-5202
- Didactic paths in sport and motor education for school system, Tafuri, D., Perrotta, F., D'Andria, A. - *Acta Medica Mediterranea*, 2019, 35(6), pp. 2999–3003, ISSN:0393-6384
- Development of cognitive, creative and relational skills in the child through the game
- Tafuri, D., Perrotta, F., D'Andria, A. - *Acta Medica Mediterranea*, 2019, 35(6), pp. 2993–2997, ISSN:0393-6384
- A possible value in terms of education with action inclusive-Altavilla, G., Manna, A., Perrotta, F. *Journal of Physical Education and Sport*, 2013, 13(3), pp. 371–374, ISSN:2247-8051E- ISSN:2247-806X
- The 'autism in school age: Early diagnosis for treatment | Autizam u školskom uzrastu: Rano dijagnosticiranje za tretman, Perrotta, F., Altavilla, G. - *Sport Science*, 2013, 6(2), pp. 49–53, ISSN:1840-3662E- ISSN:1840-3670
- A project for the education psychomotor for developmental age-Perrotta, F. *Journal of Physical Education and Sport*, 2011, 11(1), pp. 102–113, ISSN:2247-8051E- ISSN:2247-806X