

Means of psychomotor and cognitive recovery for children with autism spectrum disorder

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Suggested Citation:

Ichim, P., Barna, I., & Dragu, M. (2015). Means of psychomotor and cognitive recovery for children with autism spectrum disorder. *Global Journal of Psychology Research*. 5(2), 49-54.

Received 13 June, 2015; revised 23 August, 2015; accepted 30 November, 2015.

Selection and peer review under responsibility of Prof. Dr. Kobus Maree, University of Pretoria South Africa.

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Abstract

According to some international assessments, the rate of autism spectrum disorder cases is 1 to 68 children. There are approximately 67 million autistic people in the worlds, and 4 out of 5 children are boys.

The alarmingly increasing rate, as well as the impossibility to prevent this disorder, as its causes are not completely clear, the diversity of its symptoms, the precarious social integration and the big number of ineffectual therapies are the key elements that have determined us to pursue this research. The aim of this study is that of demonstrating that the multisystemic therapy (MST) in water and the cognitive therapy play an important role in the multidisciplinary process of recovering and integrating the autistic children in society.

Keywords: autism, deviant behavior, alternative therapy, psychomotor education.

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1. Introduction

The autistic syndrome is described as the most severe manifestation of the entire spectrum, and is known as pervasive development disorder. This syndrome represents a topical problem in the entire world because of the alarming increase of its incidence and prevalence. The aim of this study is to prove the significant role of multisystemic therapy in water in the multidisciplinary process of recovering and social integrating of the autistic children.

1.1. Diagnosis aspects

In what the diagnosis is concerned, the parents are the first to notice the peculiar behaviour of their child. Most often, mother complain: "the child is not normal", "he is not like other children of his age". In specialised assessment, a physician may indicate aspects of abnormal development: the infant does not gurgle, nor does he have mimic or gestures up to 12 months, does not use simple words up to 16 months, does not spontaneously associate two words to make simple sentences (subject + verb) up to 24 months. He records regression and the loss of social skills. The diagnosis is determined with respect, on the one hand, on the long-term clinical observation, which may be repeated after some time to record the child's abilities and difficulties, and, on the other hand, on a psychological examination in order to determine the intellectual and social-adaptive profile. In this case, Vineland scale is used to assess the adaptive skills, and PEP-R to describe a general development profile. It is also indicated to pursue an examination of the communication skills in order to assess its formal and pragmatic aspects. LECSF and Whetherly grid are recommended in order to evaluate language acquisition. Also, a motor and psychomotor development examination is necessary in order to assess motricity and sensory integration. Therefore, the symptoms are carefully assessed clinically and complementary examinations are pursued:

Other examination forms:

- orthophonetic examination for the evaluation of hearing in relational situation and the language level in all its aspects (phonologic, lexical, syntactic, semantic, pragmatic and prosodic);
- audio-phonologic examination with Auditory Evoked Potential if associated deafness is suspected;
- genetic examination in the case of peculiar malformation
- psychomotor examination to assess the potential retard, and the particularities of balance and tonic-postural kinetics (odd posture, abnormal motion, dyspraxia)
- neurological and paediatric examination which attempt to identify discreet neurological manifestations and potential epileptic symptoms.

Rimland scale, Autistic Behaviour Scale, SCA Barthelemy and Lelord, autistic behaviour scale for infants SCA-S Sauvage are also useful in determining a diagnosis (Muresan, 1997).

According to DSM-IV (Diagnostic and Statistical Manual of Mental Disorder, 2003) for a diagnosis of autism, the subject should display (Ghergut, 2013):

- decrease in social interaction manifested in at least two of the following aspects:
- significant difficulty in non-verbal behaviour (looking in the interlocutor's eyes, facial expression, body posture, absence of gestures usually used in social interaction)
- deficiencies in developing human relationship in accordance with the mental development level;
- lack of spontaneity in expressing joy, interest or sharing achievements to other people;

- lack of emotions or social reciprocity;
- decrease in communication manifested in at least one of the following aspects:
- delay or complete absence of spoken language;
- in the case of the individuals with an adequate language there may occur difficulties in the ability to start conversing with others;
- stereotypical and repetitive language;
- lack of understanding and practising social-imitative games or varied, spontaneous games with reference to abstract conditions.
- Limited behaviour patterns, interests and activities, manifested in at least one of the following aspects:
- abnormal, limited interest or focus;
- inflexible adherence to a specific, non-functional ritual, unnatural preoccupation for one or few stereotypical activities, and also unnatural focus on a subject that would not normally require effort;
- stereotypical and repetitive manners;
- assiduous interest in some parts of some objects;
- Delays or abnormalities in the case of one of the following areas:
- social interaction;
- language resembling social communication;
- symbolic or abstract-imaginative games;

Symptoms usually occur before the age of three and may be present along the entire life; nevertheless, they may be ameliorated with proper intervention and adequate care. A child with autistic symptoms should be seen by an expert team made up of a paedo-psychiatrist, a psychologist, a neurologist, a speech therapist and a specialist in education. Other tests are also necessary:

- blood tests
- brain tomography (TC)
- brain NMR (magnetic nuclear resonance)
- electro-encephalogram.

1.2. Multisystemic therapy in water

Multisystemic therapy in water is a therapy which uses the natural element (water) in a structured environment (the pool) according to a reference theoretical model and staged methodology in interdependence with the cognitive, behavioural, relational and sensory-motor techniques. At first, it was especially intended as therapy for children with pervasive development disorder, and has been adapted for other disorders as well. Fear and pleasure of being in water are two of the possible reactions experienced by the children and they function as emotional and relational activators.

The aim of this therapy is not of learning to swim but functions as an instrument to promote socializing.

The child who has learnt to practise exercises in water during the therapeutic intervention may establish a special connection with the trainer and afterwards with the other children.

Multisystemic therapy in water gives a certain degree of autonomy – the subject that has successively displayed alienation, avoidance and indifference may present a higher degree of communication with the therapist and, eventually, with other people. Multisystemic therapy in water does not involve any selection of the patients in accordance with their swimming skills. There is no contraindication in prescribing this activity as the intervention is individual and carefully considers the subject's interests, habits and abilities.

1.3. MT approach as therapy

Multisystemic therapy (MT) in water may be defined as therapy as long as there is a detailed staged planning of an individual interpersonal intervention which aims at ameliorating the pervasive development disorders. Applying MT methods leads to re-education and changes in the cognitive, behavioural, communicative, emotive and mutual social interaction schemes. The therapy works in the sense of attenuating the symptoms, positively altering the communicational process and determining significant changes in communication and social interaction. MT primarily aims at:

- improvement of body posture and of the gestures
- cooperation during games;
- the recognition and representation of the emotive expressions (acknowledgement of anger, joy, shame, fear and happiness);
- the search and recognition of reference people;
- the improvement of social mutuality (cooperation in social rules, group recognition);
- the limitation of problematic behaviour (aggressive and self-aggressive);
- the improvement of the imitative skills;
- the improvement of self-esteem;
- the improvement of verbal and non-verbal communication;
- knowledge of corporal scheme;
- the improvement of personal autonomy;
- the limitation of stereotypical behaviour;
- the stimulation of psychomotor skills

The validity of the therapeutic undertaking is ensured by the constant presence of a psychologist. The strict schedule of the sessions, their length and the choice of an aquatic space proper for the child's integration represent compulsory elements in the evolution of the therapy.

2. The importance of the multisystemic approach

Multisystemic therapy in water acts on various functional systems, such as the cognitive, behavioural, affective, psychomotor and motivational ones. The relations system is a priority for MT. The physiotherapist evaluates the means of interaction with the autistic child by observing his posture, his interaction with the ambient and with other people, and his degree of avoiding other people's looks. Water is a relational activator which pushes the child to look for a first contact with the therapist. The physiotherapist becomes a reference figure for the child, helping the latter discover and explore the world. The ability to adapt to the environment, stimulated by therapy, is also supported by the activation of the cognitive system. While in water, the autistic child develops significant memory and attention skills, denoting interest and preference towards certain activities and objects. He responds to the therapist's requirements, managing to perform even as a result of verbal commands. Some children, for example, succeed in packing their own

bag for the pool – they remind where to put the swimwear, flip-flops, bathing gown and other accessories. This proves the existence of the motivational aspects related to the pleasure of going to the pool and may be regarded as a form of social reward. The progress consists in arranging the objects in a correct fashion in accordance with their functionality. Multisystemic therapy in water also affects behaviour, as it actuates contextually-adequate behaviour and reduces self-stimulation.

The sensory-motor system is also activated by multisystemic therapy in water:

- The child learns to move in the new environment in constant relation with the therapist,
- MT facilitates the coordinative skills;
- MT involves organised motor games.

According to Piaget, cognitive activities result from the appropriation of the motor schemes. TM in water acts on what Piaget termed “motor intelligence”, characterised by the direct action of the child on the objects that he manipulates in a known space and a limited timeframe.

- The first phase of motor intelligence is dominated by reflex, by the assimilation of the external reality of a scheme naturally possessed, which marks the transition from a purely biological activity towards a primitive psychic activity.
- During the second phase, the child creates the coordination of more perceptive-motor schemes.
- During the third phase, the child moves to reach a result (it is the stage in which motion starts to be intentional).
- During the fourth phase, the child uses already-known schemes and applies them in new contexts.
- During the fifth phase, the child combines the already known schemes.
- During the sixth phase, the child succeeds in inventing new solutions, anticipating situations that are not perceivable yet.

The child who has successfully made the transition through these stages reaches what Piaget termed “motor intelligence”.

2.1. The importance of the aquatic environment

The natural ambient provides highly stimulating motivational, social and interrelational resources (Hall, James G., 2013). Among other things, the pool is a place for ludic activities: in water, it is much easier to promote the game through corporal and relational interpersonal exchange.

Also, it is much easier to maintain and promote emotive and corporal interaction while in water. The ability to adequately relate to the therapist, especially through physical contact, increases the potential and the desire of the autistic child to make affective, non-aggressive exchange. In water, intense emotions are actuated, from joy to fear, which motivate the child to look for support.

Multisystemic therapy in water creates a new profile for the child diagnosed with autism:

- it helps the child remain attentive;
- it shapes the affective response and emotive contents
- it attenuates behavioural disorder;
- it develops sensory skills;
- it increases the time of visual contact

- it ameliorates the quality of sound;
- it stimulates the desire for exploration;
- it favours social integration;
- it stimulates communication;
- it facilitates the recovery of the motor and perceptive potential;
- it eases the understanding of rules;
- it stimulates the skill of motor coordination.

3. Conclusions

A physiotherapeutic programme such as multisystemic therapy in water, if well-structured and organised in a ludic environment with respect to the peculiarities of an autistic child may lead to the amelioration of the symptoms of the autistic spectrum disorder. The development of the skills and the adaptation to an adult life are long lasting processes in the case of an autistic child, and they can last as long as the patient's life. The improvement and amelioration of the symptoms of the autistic spectrum disorder depend on the child's IQ, on the degree of seriousness of the disorder, on the associated deficiencies, and on the age when the specific educational programmes begin. The care of autism depends, first and foremost, on education.

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