



Influence of physiotherapy in the treatment of children with autism spectrum disorder

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Drielly Tífany Ferreira Reis

E-mail: driellytifanyfreis@gmail.com

Rafaela Rodrigues Pereira

E-mail: rafaelar806@gmail.com

Rogério Alves da Silva

E-mail: rogerioasilva1970@gmail.com

ABSTRACT

Introduction: The etiology of the disorder is not yet well defined, what is known is that several factors can predispose the child to have autism, which may be genetic and environmental factors, according to scientific evidence. The TEA has three measurement degrees, classified as mild, moderate, and severe. The autistic child and his family must have the support of a multidisciplinary team that instructs them to overcome the diagnosis and the current situation in which they find themselves. Based on the characteristics presented by the autistic individual, there is a need to develop activities that encourage movement patterns, posture, communication, socialization, and psychics, for this reason, the physical therapy intervention must occur early, promoting improvements in psychomotor development and daily needs. **Objective:** Highlight the benefits of physical therapy as a treatment for children with autism spectrum disorder, present with autism spectrum disorder, and talk about the family attitude given the autism diagnosis. **Methods:** This study qualifies for its basic nature, being a bibliographical research with a qualitative approach, through scientific journals of the last 10 years. **Conclusion:** When talking about physiotherapy in ASD, it is possible to understand that as the autistic person undergoes these treatments, their difficulties become smaller. Physiotherapy allows the child to have physical, motor, and emotional well-being.

Keywords: Multidisciplinary Team, Development, Rehabilitation, Autism.

1 INTRODUCTION

Autism spectrum disorder (ASD) affects neurodevelopment, however, there is still no proven cause, and its origin is unknown. Autism is a behavioral syndrome, with direct action on psychomotor development, and is characterized by social isolation, communication deficit, and behavioral patterns (SEGURA; NASCIMENTO; KLEIN, 2011).

Autism has levels that are determined according to the severity of the impairment that the individual has to perform their activities of daily living (ADLs), the levels can be classified as mild, moderate, and severe (MORAL et al., 2017).

Physiotherapeutic treatment should occur early, with the benefit of improvements in motor development and daily needs. Autism treatment relies on a multidisciplinary team composed of professionals from various areas, such as physiotherapists, occupational therapists, speech therapists,



psychologists, doctors, and others (SEGURA; NASCIMENTO; KLEIN, 2011).

Equine therapy for a child with autism has several benefits, such as the development of muscle strength, stimulation of motor coordination, postural correction, and balance gain, promoting the physical and emotional well-being of the child (RIBEIRO et al., 2019).

According to Dutra (2018), ludotherapy is a therapeutic practice that works in an artistic, more naturalistic way, where it will be applied playfully with the child to be able to develop communication, interest, motor coordination, and intellectual and cognitive abilities. Ludotherapy is a set of playful and therapeutic activities, what matters is not just the product of the activity, but the action itself and the movement experienced, allowing the child to live in an allegorical and real-world expressing of their feelings and anxieties (RIBEIRO, 2013).

Hydrotherapy through the physical principles of water contributes to motor stimulation, social behavior, sensory development, confidence, self-control, and muscle strengthening (BORGES et al., 2016). According to Santos (2014), hydrotherapy guarantees improvement in mood, and motivation, calms psychic tensions, and meets the needs of autistic movements.

However, this research aims to understand how physical therapy will influence the treatment of children with autism spectrum disorder (ASD).

This study, carried out through a literature review, is relevant, as it shows that physiotherapy contributes significantly to the advancement of functions in activities of daily living, and aims to highlight the benefits of physiotherapy as a treatment in children with a mood disorder. autistic spectrum.

2 METHODOLOGY

The present study was carried out through a literature review. Bibliographic research starts from the bibliography already made public about the subject of study, its purpose is to put the researcher in direct contact with everything that was written, said, or filmed on a given subject (LAKATOS; MARCONI, 2017).

The documents were analyzed in the Scientific Electronic Library Online (SciELO) database. This study is classified as qualitative. The research was carried out through scientific journals in the Portuguese language of the last 10 years, related to the areas that presented interventions and results in the application of physiotherapy in children with autism. All documents were evaluated and revised by both researchers. The following descriptors were used, autism, multidisciplinary team, neurodevelopment, and rehabilitation. The inclusion criteria used were open-access articles that dealt clearly with the subject, 30 articles were cited in the text, and a total of 48 were found, while the exclusion criteria used were searches that contained little content, with many quotes from third parties and studies that were outside the general objective of this study, 18 articles were discarded.



3 THEORETICAL REFERENCE

Autism spectrum disorder (ASD) qualifies as a pervasive neurodevelopmental disorder (MARTINS; GÓES, 2013). It was first told in 1911 by the psychiatrist Eugen Bleuler. However, it stood out years later, with a study published by the physician Leo Kanner in 1943 (CUNHA, 2015).

There is still no proven cause, its origin is unknown. ASD is a behavioral syndrome, with direct action on psychomotor development, characterized by social isolation, communication deficit, and behavioral patterns (SEGURA; NASCIMENTO; KLEIN, 2011).

According to the World Health Organization (2017), a study carried out about 50 years ago shows that cases of autism have been advancing all over the world. What is known about its etiology is that several factors may predispose the child to have it, which may be genetic or environmental, according to scientific evidence.

However, according to Toledo (2010), the neurosciences have associated this condition with a specific neuron, the mirror neurons, which are linked with the context of imitation, social interaction, and language.

Although several genes associated with ASD have been detected in several chromosomes, there is still no study that firmly indicates a gene that is involved with the condition of autism (FARIAS, 2018).

However, scholars believe that autism may be a genetic condition related to the x chromosome, which makes male children more prone to this condition, since they have only one x chromosome, unlike female children who have two x chromosomes (ROCHA et al., 2019).

Environmental factors may be related to the etiology of autism, exceptionally with maternal health care during prenatal care, such as some types of infections, drug use, alcoholism, tobacco, use of abortive drugs, environmental pollution, age group parents, among others (PORTO; BRUNONI, 2015). However, according to Farias (2018), even with the great commitment and attention devoted by neuroscientists, a definitive cause of autism has not yet been reached.

ASD is a complex syndrome that affects three considerable areas of human development: behavior, communication, and socialization (FERNANDES, 2014).

It is possible to identify the disorder before the age of three, through the characteristics presented, such as delay in language development, whether verbal or not, repetitive behaviors, difficulty in social interaction, stereotypy, activity limitations, and communication deficit (MARTINS; GÓES, 2013).

The autistic person does not easily share his emotions, or tastes, does not maintain eye contact spontaneously, has low muscle tone, his interests are restricted, he rarely divides his attention with events or objects and he has difficulty relating to other people (SEGURA; NASCIMENTO; KLEIN, 2011).

According to Moral et al., (2017), children with autism spectrum disorder do not have a different physical appearance from others, however, it is possible to notice changes in their behavior.



According to Lopes et al., (2019), autism is not easily diagnosed, usually, family members seek help from various professionals, such as physiotherapists, speech therapists, neuro pediatricians, psychiatrists, and psychologists.

According to Locatelli and Santos (2016), according to the degree of impairment, it is possible to make an early diagnosis, at around one and a half years of age. However, the earlier the signs are manifested, the easier the recognition and the more serious the child's condition will be (FERREIRA, 2016).

The degree of autism is measured according to the severity of the impairment, which can be mild, moderate, and severe, according to the difficulty that the individual has in carrying out their activities of daily living (MORAL et al., 2017).

According to Braga (2019), in the mild degree, the diagnosis is later, being between 7 and 8 years old, it can manifest difficulties to live socially, as well as low interest in communicating with other people, repetitive and restricted behaviors, usually presents lockdown amid routine changes.

According to the Scientific Department of Pediatrics for Development and Behavior (2019), the moderate degree has been the most common, and its diagnosis occurs between 18 - 34 months, presents signs of intermediate intensity, requires help to carry out daily activities, may have difficulty communicating through speech or not communicate verbally, compromised social interactions, discomfort with changes, lack of eye contact and intermediate food selectivity is observed.

However, in the severe degree it is recognized between 12 - 24 months, presents the signs intensely, requires help to carry out most of the daily activities, has repetitive, restricted habits, has severe problems in communication, presents high food selectivity, is extremely limited to interact with other people, have low muscle tone and have difficulty dealing with changes (DEPARTAMENTO CIENTÍFICO DE PEDIATRIA DO DESENVOLVIMENTO E COMPORTAMENTO, 2019).

According to Pinto (2016), when ASD appears, several changes are caused in the life of the family and the child, since these changes cause a shock in the family environment, they are reported as difficult to deal with. The consequences involve changes in the family bond, marital conflicts, care overload, relationships with friends, and social distancing (MAPELLI, 2018).

It is noted that the autistic child and his family need the support of a multidisciplinary team that instructs them to overcome the diagnosis and the current situation they are in (LOPES et al., 2019). According to Brandalise (2013), the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) has been the method most used today to diagnose the disorder.

According to Netto (2015) when receiving the diagnosis of autism, family members suffer from the loss of a healthy child they were expecting, from this, the five stages of grief arise, which were described by the psychiatrist Elisabeth Kubler-Ross, the first stage is denial, the person remains on the psychic defensive, denying the particular situation they are in and somehow they want to try to escape the reality



of their loss. Afterward, comes the anger phase, where the person starts to revolt against everything around them, questioning the reason for going through that, and feeling diminished without being able to conform to the situation.

Bargaining is the third phase, where the individual begins the negotiation, and the individual even makes promises to God that he will be a better person, to overcome that situation. In the penultimate phase, depression enters, and the individual disconnects from the world, feeling incapable due to the problem. The fifth and final phase is acceptance, at this stage, the shock of the loss has passed, and the person is no longer so upset and in this way can see beyond the difficulty, being ready to face the situation (NETTO, 2015).

“[...] the good family relationship shows that the members appropriately overcame their children's difficulties, even though they are many and cannot be cured, they understood that they can be overcome” (MARQUES; DIXIE, 2011).

As it is a neurological condition, there is no cure for autism spectrum disorder, however, with an early diagnosis and appropriate treatments, the child with autism will develop fundamental skills for their routine (MORAL et al., 2017).

Physiotherapeutic intervention should occur at an early stage, with the benefit of improvements in psychomotor development and daily needs. Autism treatment relies on a multidisciplinary team composed of professionals from various areas, such as physiotherapists, occupational therapists, speech therapists, psychologists, doctors, and others (SEGURA; NASCIMENTO; KLEIN, 2011).

Physiotherapy performs activities with playful and pedagogical toys, working on concentration skills, increasing reasoning and great retention of detail work, generating the inhibition of abnormal movements, and the improvement of self-control (FERREIRA et al., 2016).

Physiotherapy works to develop or improve basic functions such as rolling over, sitting, walking, running, and jumping, exercises are performed for strengthening, motor planning, postural adequacy, balance, coordination, and activities added to psychomotricity. The behavioral part is fundamental in the care of children with autism since many of them are unable to develop common activities (MOURA, 2018).

Based on the characteristics presented by the autistic individual, there is a need to develop activities that stimulate communication, socialization, and psychics of the same (PEREIRA; ALMEIDA, 2017).

Hippotherapy or equine therapy advances new forms of communication and, through the connection with horses, reduces anxiety. For the autistic child, this treatment alternative has several benefits, such as the development of muscle strength, stimulation of motor coordination, postural correction and balance gain through the connection between “person-animal” (RIBEIRO et al., 2019).

According to Barbosa (2013), during the period of riding, the brain of the person who practices is in constant operation, so that motor, respiratory, and postural adjustments, among others, occur. When walking, experiences capable of stimulating the plastic potential of the central nervous system (CNS) are



generated through sensory and motor stimuli, providing the child with the same perceptive, cognitive, and motor mechanism that an individual with normal development presents, establishing the formation of new movement patterns in the right way.

According to Seixas (2011), hippotherapy develops the capacity for sensory-tactile perception, increases circulatory and respiratory capacity, develops the ability to move joints, increases reflexes, and promotes psychomotor coordination.

Ludotherapy is another therapeutic method widely used by physiotherapy, ludic comes from the origin of the Latin word ludos which means game. It is a set of playful and therapeutic activities, what matters is not just the product of the activity, but the action itself and the movement experienced, allowing the child to live in an allegorical and real world, expressing their feelings and anxieties (RIBEIRO, 2013).

As it is a therapeutic modality, ludic activity is used with children, applying the act of playing as a tool to favor and simplify the verbal and non-verbal expression. These games must be planned, helping therapeutic techniques related to greater objectives indicated by the physiotherapist, in which intellectual and cognitive skills are developed, which allow assimilation and behavioral development. The environment is completely planned for expressive facilitation, with the strategic placement of objectives, such as toys and games exposed to the open air, to facilitate handling by the autistic child (SILVA, 2017).

According to Ribeiro (2013), ludotherapy is psychotherapy adapted from a child approach, which is based on helping the child through play and expressing their conflicts and difficulties more easily, helping to carry out their integration and social adaptation. , to promote or restore the child's psychological well-being through playful activities.

Hydrokinesiotherapy through its physical principles of water contributes to motor stimulation, social behavior, sensory development, confidence, self-control, and muscle strengthening. The performance of hydrotherapy will also influence stereotyped behavior and body control (BORGES; MARTINS; TAVARES, 2016).

Aquatic physiotherapy has proven to be a growing area with great possibilities, it is effective in gaining skills, and improving social behavior and motor development (BORGES et al., 2016).

According to Santos (2014), hydrotherapy guarantees improvement in mood, and motivation, calms psychic tensions, and meets the needs of autistic movements. Through the movements performed during aquatic physiotherapy, it is possible to favor the advancement of the individual, exceptionally the autistic one, as it stimulates the learning of laterality, muscle strengthening, develops balance, and motor coordination helps in gaining a range of motion (ROM), increased cardiovascular capacity, promotes knowledge of the space around you and your own body (PEREIRA; ALMEIDA, 2017).

According to Pereira and Almeida (2017), from the moment that the ASD patient adapts to the liquid environment, he is encouraged to demonstrate the changes resulting from the therapy, namely, social



interaction, balance, trust, cooperativeness, coordination, postural correction, and others.

Physiotherapy is part of a multidisciplinary team, to offer better assistance to children diagnosed with autism, since its intervention is fundamental in the treatment of these children, regardless of the level of seriousness presented. Since, physiotherapy can promote human development (DUTRA, 2018).

4 FINAL CONSIDERATIONS

During this study, it was possible to understand that the physiotherapeutic intervention is an extremely relevant experiential process, where the autistic being is seen as a whole, being worked on by touching, listening, speaking, or even through a simple look. Being autistic is being a person like any other, only with different limitations.

Physical therapy has several effective therapeutic modalities in the treatment of children with an autism spectrum disorder. When talking about physiotherapy in TEA, it is possible to understand that as the autistic are submitted to these treatments, their difficulties become smaller.

Physiotherapeutic interventions had considerable influences, as each treatment alternative was able to reduce the condition of the disorder, allowing the child to have physical, motor, and emotional well-being, among others.

Because of this, the research was successful in its objective, as it highlighted the benefits of physiotherapy as a form of treatment for children with ASD, proving to be beneficial in the difficulties presented by an autistic person.

The diagnosis of autism triggers the most diverse feelings in the family environment, feelings that are common in the period of discovery of the disorder, as characteristics and situations that are difficult to deal with begin to emerge. However, physiotherapeutic approaches in the treatment of ASD in children clearly express their effectiveness, especially in early interventions, whether through hippotherapy, play therapy, or hydro kinesiotherapy.

This study sought to carry out a previous approach to the importance of physical therapy intervention in the treatment of children with an autism spectrum disorder. It is suggested that further studies may be interested in this topic, regarding physiotherapy and its challenges as a tool to treat this neurological condition, ASD.



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