

Therapies with animals in neurodiversity.

Terapia con animales y neurodiversidad.

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Abstract.

Since the beginning of our history, the dog (*Canis familiaris*) has been our most faithful companion being this the first species domesticated by man. As a result of an interaction process for thousands of years. Dogs, during this process, have acquired different skills, including communication skills, which have facilitated relationships with humans.

Answering our initial question, why observe a dog makes us so happy? It is *oxytocin*, it is a hormone that has developed in different aspects of the human-dog bond, after several investigations and long processes. It was discovered that the hormone only develops and appears when we maintain a bond with an animal.

Finally, I ask: If the look of a dog produces such happiness regardless of the diverse capacities of a human being, what are they capable of producing or stimulating in a person with neurodiversity? ¿Do we really know animal therapies (TAA)?

Keywords: dog; neurodiversity; animal therapies; TAA; oxytocin

Resumen.

Desde el comienzo de nuestra historia, el perro (*Canis familiaris*) ha sido nuestro más fiel acompañante siendo esta la primera especie domesticada por el hombre. A consecuencia de un proceso de interacción durante miles de años. Los perros, durante este proceso, han ido adquiriendo diferentes habilidades, entre ellas, habilidades comunicativas, las cuales, han facilitado las relaciones con los humanos. Respondiendo a nuestra pregunta inicial, ¿Por qué observar a un perro llena a uno de felicidad?, se trata de la oxitocina, se trata de una hormona que se ha desarrollado en distintos aspectos del vínculo humano-perro, tras varias investigaciones y largos procesos, se descubrió que la hormona solamente se desarrolla y aparece cuando mantenemos un vínculo con un animal.

Para finalizar, pregunto: Si la mirada de un perro, produce tal felicidad independientemente de las diversas capacidades de un ser humano, ¿qué son capaces de producir o de estimular en una persona con diversidad funcional? ¿Realmente conocemos bien las terapias con animales (TAA)?

Palabras clave: perro, diversidad funcional, terapias con animales, TAA, oxitocina

1.-Introduction.

The term *neurodiversity* has been used to replace that of “disability” in educational institutions, mainly in special education. It refers to children who have a deficit, disorder or dysfunction. According to Armstrong (2012) they are children who have been referred to as “special education” students because of their difficulties of one kind or another. It has served to investigate, both in the difficulties and in the positive aspects of children who are accustomed to be called “normal” or of those who have a disability (Chilean Ministry of Education, 2015)

Throughout this article we will refer to this group of people, as neurodiversity, since there is a wide diversity of brains in our environment and therefore, we must have some respect for the unique brain of each child, as well as different opportunities and levels of stimulus. As a result of these differences, the level of intervention of each child will also be different; including animal therapies since for this type of therapy we not only have our faithful companions, dogs. We also get therapy from other animals, such as horses, dolphins or companion animals such as cats.

Animal Therapies (TAA) are direct and pre-designed interventions, where an animal with a specific education participates. Designed to promote physical, emotional and cognitive benefits, as a key part of the treatment.

We can find two types of therapies, in one of them the animal participates for the enjoyment of its company that provides physical and psychic benefits; in the other we find a structured and organized rehabilitation intervention with the help of the animal, coordinated by a doctor and a multidisciplinary team in which they include animal therapist for people with a motor diversity. These therapies have obtained a valid recognition by scientific research concluding in fast, effective and accepted procedures.

These therapies are not something new, since historically, animals have always been part of therapeutic programs designed to help people, both physically and psychologically. The Greeks were riding horses as part of therapies with the aim of increasing the self-esteem of people who were in a terminal situation. The activity with horses was “very relaxing” considered of the seventeenth century, for people with a high degree of physical disability the horse was used, and then this therapy was extended to the United States, where there are more than 500 therapeutic riding programs.

Subsequently (1978), the animals intervened in the treatment of people with epilepsy in Bether, Bielfield and Germany. Animal therapies were also effective in the rehabilitation of aviators of the *Army Air Convalescent Center*, in Pawling, New York (1944-1945), where the animals distracted the military who received intensive treatments.

In 1996, Erling Stördahl founded the Beitostölen center for blind people, where dogs and horses, intervened for animal patients to exercise. In 1953, when Jingles, the psychiatrist Boris M. Levinson’s dog, showed him his potential as a psychotherapist practice characterized by the presence of two therapists.

Sigmund Freud (1856-1937), an Austrian doctor and psychiatrist, consulted with his dog because it facilitated communication with his patients.

“A small pet is often an excellent therapy against the disease and especially for long-term hospital diseases. A bird in its cage is often the only pleasure for a person who has been invalidated for years in the same room. Being able to feed him alone helps him regain self-esteem and encourages him to do other things”.

There are so many benefits of animal's therapies that it is intelligible that today the question of the veracity of these therapies continues to be questioned. Maribel Vila (2012), of the Affinity Foundation, states that these therapies have found that they improve health, reduce cholesterol, blood pressure and triglycerides, social relationships and survival after a heart attack or stroke; neurotransmitters increase, which make us have a better mood; reduce stress and interpersonal violence; and provide greater autonomy. For people suffering from some type of neurodiversity, the horse and the dolphin can mean not only the means of suddenly acquiring all its attributes, but an extraordinary form of treatment (Font de Mora Turón, 2008)

2.-Hippotherapy.

We talk about the horse, which is known to have the purest instinct of strength and nobility as well as a large size, helping to improve interpersonal relationships and self-image. This therapy is also known as equine therapy, which as its names indicates is a method based on the movement of the horse which provides a basic learning related to basic motor skills.

According to Bertoti (1991), when riding a horse, experiences such as hip movements, pelvic rotation, balance and body alignment awareness are acquired. In children with neurodiversity the stimulus are presented later so that with the hippotherapy it is intended to create an interaction of the environment and the child so that it will gradually adapt to face different situations as stimulus without losing control of them.

The intervention with the horse not only improves muscle activation in response to the movement of riding, but also keeps our senses alert by learning to react more quickly to a continuous flow of tactile, auditory and visual stimulus (Horvat, Croce, Zagrodnik, 2010)

All these improvements can be produced in a fairly short period of only 3 sessions and motivates children with neurodiversity to be active participants in most cases in an activity. According to Giagazoglou (2013), horse riding offers continuous motor and sensory inputs through variation in gravity.

On the other hand, adapting to the movements of the horse already implies a therapeutic intervention since the system is activated and will produce an increase in muscle activity (McGibbon, 2009).

Animals are an important support for the development of social skills in children with neurodiversity, since they reproduce responses to the stimulus that animals produce in addition to obtain knowledge of values and positive attitudes towards them (Granados and Agís, 2011)

3.-Delphinotherapy

The characteristic of these therapies is that dolphins (usually the *bottlenose* species) act as master therapists, not only for their behavior towards us but for the sounds emitted by balance the homeostasis of our bodies. It is a sound, scientifically proven, healing and holistic healing. This modality is therapeutic procedure in and out of the water, which is related to children or adults with attention deficits, Down syndrome or other types of neurodiversities.

The objective of this therapy is motivational, although other objectives related to language; motor skills and conceptual thinking are achieved.

A novel therapy, which opens the way in the therapy of autism, psychomotor retardation and cerebral palsy, is the combination of biosónica and sacrocranial therapy that use acoustic emissions of dolphins in favour of unlocking and rebalancing (Oropesa Roblejo, García Wilson, Saní Bridge and Matute Gainza, 2009).

Dolphins also cause cellular and tissue changes in the influx of neurons through resonance, cavitation or sonophoresis. In addition to the better synchronicity between the cerebral hemispheres and a greater degree of waves in the alpha and theta spectrum.

Psychologically speaking, they transmit waves through their echolocation, from those waves, sounds come out that directly influence the nervous system. First they scan as we are, in a holistic, bodily, mental and values way, and then when the time is right they will emit the waves capable of balancing and making us feel good.

4.-Canotherapy

We can define as Canotherapy, that therapeutic intervention in which the main therapist is a dog with specific qualities and with a predetermined education that helps people with various neurodiversities.

Dogs produce various sensations, and establish immediate connection with children, activating coordination, postural control and strengthening the muscular system. In addition to activating different immune systems as hormonal. By establishing a connection between can-child, new loving relationships are admitted, which is a very good technique for children with withdrawal difficulties and poor security.

With children with different pathologies, especially in trisomy 21 (Down syndrome) the dog is a magnificent therapist, since it helps develop his motor skills (Alterna, Peques, 2010).

Through different results obtained by different entities, the dog has the ability that energy is unique, transmitting tranquility and peace to the children, leaving the emotional load focused on the dog, in addition, we could name some more benefits it causes in children, girls and adults:

- Increase self-esteem
- Reduce insecurity
- Regulates the character.
- Increase your language level.

- Improves concentration and perception
- Modulates emotions and impulsivity.
- Stimulates responsibility (Chula F.E, 2018)

According to Torner, director of the Purina Foundation, which funded programs for animal-assisted therapy in Spain, she said "it is necessary to ensure that what is done has social value, which is based on a scientific basis. And that Canotherapy is a treatment that has very good results especially in people with neurodiversity".

Mona. Fortney, V. Elizabeth y Willenbring Stan, conducted a study in 2006 with 22 children from different cohorts, between 2 and 13 years with neurodiversity in order to demonstrate the effectiveness of this therapy by comparing children's language and development. The conclusion was obtained was that they improved in language and there was an advance in motor development where they included dogs compared to ordinary therapeutic sessions.

5.-Cats

At present, there are no therapies with cats; however multiple investigations state that having a cat is beneficial for health. Contact with cats reduces stress on their owners, who neglect and reassure.

It is true that individuals with psychological conditions improve by having the company of this animal, in addition to people suffering from heart disease.

Psychologically speaking, the cat relaxes us with awareness, even if he is asleep but at the same time He is alert to what is happening around him. Purring encourages positive emotions and their small affective actions are comforting.

We can find instrumental, physiological benefits by having this animal. According to Hernández, in studies conducted by Mowry (1994) in deaf people it is vital to be alerted about sounds or alarms, and the cat warns of these sounds with reactions.

As a physiological benefit these animals help to be more independent, in addition to people with deafness, paraplegia or sclerosis, they are more able to control stress, increase confidence, relax, accept their diversity and feel less depressed, irritable and alone.

3.-Conclusion.

It is essential to know the therapies with animals, in addition to knowing the beneficial use of these animals in different types of institutions reports physical, psychological and social benefits in their interaction with human beings, which allows to maintain or improve the quality of life of people; however bibliographic references on the subject in the country are insufficient and it is necessary to systematize the use of these techniques as a source of resource for the occupational therapist in the rehabilitation process.

As a final point, I would like to highlight the involuntary therapy that we have that we have dogs or cats at home, we are involuntarily receiving a therapy when we get home and see our partner move his tail and so happy for our return.

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