

# Dog-assisted therapy, alternative modality for the development of motor skills in children with disabilities (Note I)

Mihaela Indrieș<sup>1</sup>, Eva Zita Balogh<sup>2</sup>

<sup>1</sup> Department of Educational Sciences, Faculty of Social and Human Sciences, University of Oradea

<sup>2</sup> Psychopedagogue, Bonitas Inclusive Education Center, Oradea

## Abstract

**Background.** In this paper we tried to present a method of animal-assisted therapy for a group of 3-6 year old preschoolers. The preliminary methodological study aimed at the development of animal-assisted activities and, on the other hand, aspects of the activity exercising demonstrations. The aim was to present the advantages offered by dog-assisted therapy in the development of motor skills.

**Aims.** We assume that through dog-assisted therapy we can obtain significant results from the point of view of general motor skills in children with disabilities

**Methods.** We studied research aimed at highlighting the influence of dog therapy on children in training and recovery activities. We also drew inspiration from our own experience with the therapy dog West. The sessions took place in a kindergarten group of 6 to 10 people.

**Results.** Most research criteria were found to be easy to use and demonstrated the ability to monitor changes in children's behavior. The children uniformly showed improvements in behavior being more motivated towards the activity in the presence of the dog. Attention also increased in the activities carried out in the presence of the dog.

**Conclusions.** The studied research and personal observations are extremely promising: it would be worth testing and evaluating the effectiveness of the therapy dog on the activities carried out by children. For this, the present study provides good foundations both in terms of thematics and the application of observational aspects.

**Keywords:** Animal-assisted therapy, development of motor skills, development of attention, stimulation of motivation.

## Introduction

Animal-assisted therapy (AAT) is a structured therapeutic intervention with the deliberate inclusion of an animal in a therapeutic treatment plan. Generally, AAT involves a licensed therapist guiding interactions between a patient and an animal to achieve specific goals (Chandler, 2012; Kruger & Serpell, 2010); (1).

The dog as a therapeutic agent appeared by chance in the case of a therapy session of the American psychiatrist Boris Levinson. He observed the interaction between the strongly internalized child and his dog to whom the boy opened up very quickly, and to whom he began to tell stories.

There is more evidence of the positive effects of dogs on children (Levinson, 1962; Levinson, 1964; Levinson, 1965; Levinson, 1970; Mallon 1994; Reichert 1994; Hansen et al. 1999; Hergovich et al. 2002; Lieber 2002; Anderson & Olson, 2006).

The effect of animals on humans has been investigated in many studies, where they looked at the effect of animals on breathing, heart rate and stress. Friedmann et al. (2010) studied blood pressure in 36 children in performance situations (they had to read aloud from a book).

According to the biophilia hypothesis, observing an animal has a calming effect on people (O'Haire, 2010).

Every child's blood pressure was measured every minute, and each child was examined once in a no-dog situation and once with a dog. The children's heart rate and blood pressure were lower in the presence of the dog.

Baun et al. (1984) found significant differences in blood pressure in those people who petted or talked to a dog versus others who read. They concluded that petting an animal has a more calming effect than resting.

Baun et al. (1984) proved that the presence of the animal also regulates the breathing.

In stressful conditions the presence of a pet can reduce

Received: 2023, February 1st; Accepted for publication: 2023, February 11

Address for correspondence: Department of Educational Sciences, Faculty of Social and Human Sciences, University of Oradea, str. Universitatii nr 1, Oradea, PC 410087, Romania

E-mail: mihaelacosmin@yahoo.com

Corresponding author: Mihaela Indrieș; mihaelacosmin@yahoo.com

<https://doi.org/10.26659/pm3.2023.24.1.38>

the feeling of stress just like the presence of a life partner. This aspect was proved by Allen (2003) and the conditions in which they tested the parameters of stress in the presence of the pet, the life partner or a friend. Also in this study it was proven that the sensation of pain decreases in the presence of the pet.

Coming out of a disadvantaged family environment, children learn the tenderness and care they first show towards the animal, but this attitude later affects the interpersonal relationships (Melson & Fine, 2010). The animal allows itself to be loved and he returns love.

Cole's research has illustrated AAT's potential for facilitating growth towards therapeutic goals when combined with more traditional approaches" (Cole, 2009).

The presence of animals stimulates the spontaneous expression of emotions, which is very important for psychological - and therefore physical - well-being. The presence of animals also reduces anxiety (Wells, 2009). Animals also influence human socialization. Messent, 1983 (quoted by Cusack, 1988) observed that when people walk with a pet they engage in more conversations than without, and these conversations are longer in the presence of the pet.

During one of the studies the development of emerging aggression was observed showed that children's aggressive behavior during the task and decreased while waiting in the presence of an animal (Babos et al., 2002). The results of the research are extremely promising. The children uniformly showed improvement in their emotional and social openness and communication style.

Another exploratory study builds on existing research on the physiological stress response to human-animal interactions in a non-clinical sample of adult dog-owners interacting with their own dog or an unfamiliar therapy dog under similar conditions. Participants were therapy-dog owners interacting with their own dogs and dog owners interacting with an unfamiliar therapy dog. Interestingly, while the results suggested dog owners perceived less stress and anxiety when interacting with their own dogs compared with those interacting with an unfamiliar dog, other results suggested greater reductions in cortisol, SBP, DBP, and HR for those interacting with the unfamiliar dog (Barker et al., 2010).

Although the main goal of animal-assisted therapy is usually better functioning for cognitive processes and the acquisition of knowledge, this therapy can have other significant effects that we can focus on in animal-assisted therapeutic occupations. The therapy dog must be given instructions, which makes the child think and pay attention.

Through physical skill development, children explore their capabilities and learn about themselves and their environment. All children must be allowed to explore their abilities and learn to solve problems. Through play and games, children can learn who they are and what they are capable of doing (Bunker, 1991).

A reading intervention known as canine-assisted literacy has proved to increase children's reading fluency and motivation, providing encouragement for struggling readers, and making reading fun for students in general (Jalongo et al., 2004).

The fields of application of dog-assisted therapy are very broad. It can be applied in the case of children with special

educational needs, with learning disabilities, with reduced mobility, in the case of delayed speech development, the development of children with speech, language and communication disorders or speech impediments (animal-assisted speech therapy), in the development for children with mild, severe disabilities, in the early development of children with autism or symptoms of autism, in children with learning disabilities (dyslexia, dysgraphia), in the development of hyperactive children or with physical problems, in the case of the development of a child with antisocial, behavioral disorders or with integration problems (emotion, empathy, development of social skills).

Many studies have proven that it is very good to work with problem children involving animals. Animals brought into the classroom stimulate learning processes, they have a good influence on the classroom mood (Kaye, 1984).

The dog provides major support in the development of movement: the development of large movements, fine movements, the development of spatial orientation, body schema, body perception, speech, communication, improving attention, concentration, precision, developing memory, developing social skills, developing self-image and self-awareness, developing a sense of rhythm, developing and maintaining a healthy and conscious lifestyle, developing problem-solving skills, increasing tolerance for failure, behavior and behavior problems, attention deficit hyperactivity disorder, foreign language, expanding vocabulary, awakening interest, deepening knowledge etc.

In the case of children with poor development of motor skills, inhibition and frustration appear, therefore these children avoid and refuse motor activities. If the dog appears during the activities, motivation appears, the children perform the tasks willingly, smiling, forgetting about their problems. The dog accepts children as they are, with or without defects, he behaves the same with everyone, it makes no difference.

It is widely accepted that children need physical activities for their healthy development, and it is proven that movement and action are essential for the harmonious development of cognitive functions such as language, sensation and perception, as well as some intellectual skills.

It also plays a big role in behavior control the early motor coordination activities. This is how the child experiences that he is the master of his own actions, that he is ahead he can summon things and control his own movement. Animals are often used to develop greater self-control and a sense of responsibility (Serpell, 2000).

AAT has also been shown to facilitate cognitive and social development (Olds et al., 1994; Sollerhed et al., 2008; Stork & Sanders, 2008), and there appears to be a strong relationship between the development of gross motor skills and language (Rarick, 1980). As children develop more sophisticated motor skills, their capacity for language improves as well.

When dog and child meet there is inevitably a motor component to their interaction. When we think of the image of a child next to a dog we can imagine a series of movements in their way of playing. Inevitably, the idea of detecting the positive effects brought by therapy dogs in the development of motor skills in children arises.

The predictability of school performance can be most easily estimated through perceptual and motor skills. These are the areas where fortunately therapy dogs can be used predominantly, they can be included in motor activities and even provide added value to these activities.

### Hypothesis

We assume that through dog-assisted therapy we obtain significant results from the point of view of general motor skills in children with disabilities.

### Material and methods

We mention that there is the consent of the Ethics Committee of the Center for Inclusive Education Bonitas for conducting the research. We also mention that there is the informed consent of the child subjects and the consent of the parents for the research..

#### Research protocol

##### a) Period and place of the research

b) The experimental research will be carried out for a period of 3 months between February 15 and June 30, 2023. The results obtained will be the subject of Note II.

##### c) Subjects and groups

The target group are children with disabilities of preschool age between 3-8 years old, girls and boys

The children participating in the research have the following disabilities: autism spectrum disorder, intellectual development disorder, movement disorder, delay speech development

##### d) Applied tests

- We cross the route
- We cross the bridge
- We sneak under the bridge
- We overcome obstacles
- We lead the dog
- "Movement Score" Trail
- We imitate the dog

##### e) Statistical processing

Calculation of the significance p-value from the difference of the means, by the specific statistical-mathematical method. Statistical table and p-significance for each item.

### Preliminary results

During the activities carried out with the therapy dog West, we tried to develop basic motor skills, aiming to stimulate children with disabilities to move on all fours, motivating them for the activities demonstrated by the dog. During these activities, in addition to motivation, children's attention also develops, they must watch the dog's demonstrations, follow the route.

In the following we present some ideas of activities carried out for the development of motor skills with the therapy dog West.

#### a) We cross the route

We are putting a play tunnel in the gym. The children are sitting on a bench waiting for the instruction.

The dog presents the task, crosses the tunnel. The children follow him in turn. At the end of the tunnel children can pet the dog. Motor activity performed on all fours by children (Fig. 1).



Fig. 1 – Cross the route by the dog.

We put a bench in the gym. The children sit on another bench waiting for the instruction. The dog presents the task, climbs onto the bench and crosses it on all fours without falling. The children follow him in turn. At the end of the exercise, the children can pet the dog. Motor activity performed on all fours by children.



Fig. 2 – The dog crosses the bridge.



Fig. 3 – The kid crosses the bridge.

#### b) We sneak under the bridge

The dog is placed on two gymnastic benches, between which there is a distance where children cross. Children are asked to take turns to cross under the dog bridge (Fig. 2; Fig. 3).



At the end of the exercise, the children can pet the dog. Motor activity performed on all fours by children.

*c) We overcome obstacles*

In the gymnasium we make obstacles out of different gym objects, objects for maintaining balance, climbing, crossing. The dog presents the task, crossing each element of the route. The children follow him in turn. At the end of the exercise, the children can pet the dog. Motor activity performed on all fours by children, by climbing, by crawling (Fig. 4).



**Fig. 4** – Crossing the obstacles supervised by the dog.

*d) We lead the dog*

In the gymnasium we set up some milestones. We present the task, crossing the route around the stakes leading the dog on a leash. The children take turns performing the task. At the end of the exercise, the children can pet the dog. Motor activity performed standing, walking (Fig. 5).

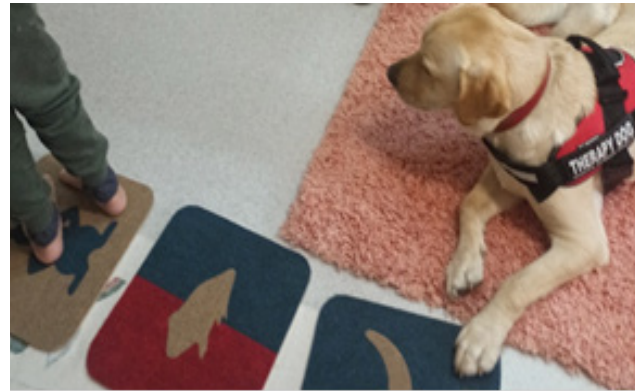
These activities develop walking on all fours, crawling, balance, skill, contributing to the child's development by increasing motor performance and self-confidence.



**Fig. 5** – The children walk the dog.

*e) "Movement Score" Trail*

In the hall we place the elements of the educational game "Movement score". Each tablet means a movement (imitate the bear, imitate the frog, the wind etc.). The dog does the demonstration, runs the route and shows the children the right movement for each tablet. The children follow the dog in turn and make the route. These activities develop balance, eye-hand-foot coordination (Fig. 6, Fig. 7).



**Fig. 6** – Imitate the bear, educational activity.



**Fig. 7** – Movement score educational activity.

*f) We imitate the dog*

Children are asked to stand facing the dog and wait for instructions. Every movement of the dog will have to be imitated. When the dog stands, the children do the same, when it lies down, spins, "slaps" the children imitate the movement. It is a game through which we develop attention, large movements (8).



**Fig. 8** – Do what the dog is does.

## Discussion

We believe that exercises with the help of the dog strengthen the child's self-confidence, therapists always find games where children experience success. Certain exercises are refused by these children because of fear or insecurity in movement, but in the presence of the dog these obstacles disappear, the children no longer think about the sensations of discomfort but simply follow the dog.

The dog is very loved by children and that is why its presence stimulates the children, being much more easily trained in different activities. It is considered a friend, a companion who does not criticize you, accepts you without prejudice.

Since these children are mostly non-verbal at preschool age, they cooperate very quickly and well with an animal that, like him, is directed by short verbal indications and by different gestures. Following the assisted therapies with the dog, relationships with peers deepened as a result of the shared experience.

## Conclusions

1. The current work was thought to be a study of the existing research in the field, before starting our own research.

2. In the framework of the research, we propose the use of exercises that develop the functions necessary for the development of the preschool period and are indicated for this age period. We have also presented some of these exercises in the paper.

3. We will focus on developing laterality, eye-hand-foot coordination, improving fine motor skills and stimulating the vestibular system.

4. We want to do the activities with a certain regularity, carrying out one activity per week.

## Conflict to interests

Nothing to declare.

## References

Allen K. Are pets a healthy pleasure? The influence of pets on blood pressure. *Curr Dir Psychol Sci.* 2003;12(6):236-239. <https://doi.org/10.1046/j.0963-7214.2003.01269.x>.

Anderson K, Olson MR. The value of a dog in a classroom of children with severe emotional disorders. *Anthrozoös.* 2006;19(1):35-49. DOI:10.2752/089279306785593919.

Babos E, Szeredi B, Gábor Sz, Györkös K. Állatasszisztált terápia hatékonyságvizsgálata két értelmi fogyatékos gyerekcsoporton (Hun). (Effectivity study of animal-assisted therapy for two mentally hand icapped child-groups). *Pszichoterápia.* 2002;11(5):355-364.

Barker SB, Knisely JS, McCain NL, Schubert CM, Pandurangi AK. Exploratory Study of Stress Buffering Response Patterns from Interaction with a Therapy Dog. *Anthrozoös.* 2010;23(1):79-91. DOI:10.2752/175303710X12627079939341.

Baun MM, Bergstrom N, Langston NF, Thoma L. 1984 Physiological Effects of Petting Dogs: Influences of Attachment. In Anderson RK, Hart BL, Hart LA. *The Pet Connection - Its Influence on Our Health and Quality of*

*Life.* Minnesota, 1984,162-171.

Bunker LK. The role of play and motor skill development in building children's self-confidence and self-esteem. *Elem School J.* 1991;91(5):467-471. <https://doi.org/10.1086/461669>.

Chandler CK. *Animal assisted therapy in counseling.* New York, NY: Routledge, 2012. DOI: <https://doi.org/10.4324/9780203832103>

Cole ML. Literature review and manual: Animal-assisted therapy. Unpublished doctoral dissertation or master's thesis. University of Lethbridge, Alberta. 2009, [www.deltasociety.org/aaa-and-aat-resources](http://www.deltasociety.org/aaa-and-aat-resources).

Cusack O. *Pets and Mental Health.* The Haworth Press. New York, 1988. <https://doi.org/10.4324/9781315784618>.

Friedmann E, Son H, Tsai CC. The animal/human bond: Health and wellness. In Fine AH (Ed.). *Handbook on animal-assisted therapy: Theoretical foundations and guidelines for practice.* Elsevier Acad Press. 2010, 85-107. <https://doi.org/10.1016/B978-0-12-381453-1.10006-6>.

Hansen KM, Messinger CJ, Baun MM, Megel M. Companion animals alleviating distress in children. *Anthrozoös.* 1999;12(3):142-148. <https://doi.org/10.2752/089279399787000264>.

Hergovich A, Monshi B, Semmler G, Zieglmayer V. The effects of the presence of a dog in the classroom. *Anthrozoös* 2002;15(1):37-50. <https://doi.org/10.2752/089279302786992775>.

Jalongo MR, Astorino T, Bomboy N. Canine Visitors: The influence of therapy dogs on young children's learning and well-being in classrooms and hospitals. *Early Child Educ J.* 2004;32(1):9-16. DOI:10.1023/B:ECEJ.0000039638.60714.5f.

Kaye DM. Animal Affection and Student Behavior. In Anderson RK, Hart BL, Hart LA. *The Pet Connection - Its Influence on Our Health and Quality of Life.* Mineapolis, Univ. Minnesota. 1984, 101-105.

Kruger KA, Serpell JA. Animal-assisted interventions in mental health: definitions and theoretical foundations. In Fine A. *Handbook on Animal-Assisted Therapy.* 2nd ed. Elsevier Inc. Acad Press. 2010, 33-48. <https://doi.org/10.1016/B978-0-12-381453-1.10003-0>.

Levinson BM. The dog as "co-therapist". *Ment Hyg.* 1962;46:59-65.

Levinson, BM. Pets: A special technique in child psychotherapy. *Ment Hyg.* 1964;48:243-248.

Levinson BM. The veterinarian and mental hygiene. *Ment Hyg.* 1965;49:320-323.

Levinson BM. Pets, child development and mental illness. *J Am Vet Med Assoc.* 1970;157(11):1759-1766.

Lieber JS. Animal-assisted therapy for elementary students with emotional or behavioral disorders. *Dissertation Abstracts International.* 2002;63 (2505), 7A. (UMI No.AA13056665).

Mallon, GP. Some of our best therapist s are dogs. *Child & Youth Care Forum.* 1994;23(2):89-101. <https://doi.org/10.1007/BF02209256>.

Melson GF, Fine AH. Animals in the lives of children. In Fine A. *Handbook on Animal-Assisted Therapy.* 2nd ed. Elsevier Inc. Academic Press. 2010, 206-226.

O'Haire M. Companion animals and human health: Benefits, challenges, and the road ahead. *J Vet Behav.* 2010;5(5):226-234. DOI:10.1016/J.JVEB.2010.02.002.

Olds AR, Kranowitz CS, Porter R, Carter M. Building in opportunities for gross motor development. *Exchange.* 1994;97:31-50.

Rarick GL. Cognitive-motor relationships in the growing years. *Res Q Exerc Sport.* 1980;51(1):174-192. doi: 10.1080/02701367.1980.10609282.

- Reichert E. 1994 Play and animal-assisted therapy: A group-treatment model for sexually abused girls ages 9-13. *Family Ther.* 21(1):55-62.
- Serpell JA. Animal Companions and Human Well-Being: An Historical Exploration of the Value of Human-Animal Relationships. In Fine AH. *Handbook on Animal-Assisted Therapy: theoretical foundations and guidelines for practice.* Acad Press. San Diego, California. 2000, 3-19. DOI:10.1016/B978-012369484-3/50003-7.
- Sollerhed AC, Apitzsch E, Rastam L, Ejlertsson G. Factors associated with young children's self-perceived physical competence and self-reported physical activity. *Health Educ Res.* 2008;23(1): 125-136. doi: 10.1093/her/cym010.
- Stork S & Sanders SW. Physical education in early childhood. *Elem School J.* 2008;108(3):197-206. <https://doi.org/10.1086/529102>.
- Wells DL. The facilitation of social interactions by domestic dogs. *Anthrozoos.* 2004;17(4):340-352. doi: 10.2752/089279304785643203.

**Websites**

- (1) International Association of Human-Animal Interaction Organizations. White Paper 2014: The IAHAIO Definitions for Animal Assisted Intervention and Guidelines For Wellness of Animals Involved. 2014 Retrieved from: <http://www.iahaio.org/new/fileuploads/4163IAHAIO%20WHITE%20PAPER-%20FINAL%20-%20NOV%2024-2014.pdf> on October 14, 2015. Accessed on 2022.