

# EFFECTS OF ASSISTED ANIMAL THERAPY ON THE DEVELOPMENT OF SOCIO-EMOTIONAL ABILITIES OF CHILDREN WITH AUTISM

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**Abstract:** *We focused in this research on the effects of animal-assisted therapy on improving the socio-emotional skills development of children with autism. To achieve the research were used: case study (main method), interview-based survey, document analysis, and observation method. The tools used are the interview guides for therapists and for parents and observation grids for children with autism. The results of the study confirm the efficacy of animal-assisted therapy in improving the development of socio-emotional abilities of children with autism.*

**Key words:** *autism, assisted animal therapy, socio-emotional abilities.*

## 1. Introduction

One of the most extensive and active areas of research in the field of pervasive developmental disorders is autism, and the most important feature of autism spectrum disorders (ASD) is the lack of social and emotional functioning.

International statistics produced since the 1990s reveal a high incidence of ASD: 1 out of 166 children born annually - according to the European Neuropsychiatry Congress in Barcelona, 1 out of 150 - according to Centers for Disease Control, Atlanta (Gifei, 2009).

Animal Assisted Therapy (AAT) is considered to be a “directed intervention, with a well-defined purpose, in which an animal that meets certain criteria is an integral part of a treatment process. It is done and / or coordinated only by trained staff in the field, being an individual or group activity and always requiring the supervision of a professional” (Delta Society, as cited in Rusu, 2012, p. 7). Animal-assisted therapy works on developing the abilities of children with autism, with some improvements and changes in their behavior. According to Fine (2006), AAT is considered a set of second procedures of a basic therapeutic treatment, not a treatment by itself.

Although the use of therapy dogs in a therapeutic context dates back about 50 years, research into the therapeutic effects of human-animal interaction still needs convincing explanatory scientific paradigms. The first book dedicated to the activities and AAT was published only in 1996 (Altschiller, 2011).

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## **2. Research Methodology**

The present study aims to investigate the effects of AAT on the socio-emotional development of children with autism. It is considered appropriate to carry out this research, as not only will there be certain phenomena found but it will actually contribute to the development of children from the point of view of social and emotional abilities.

AAT was performed in a center for the recovery of children with autistic spectrum disorders by a certified specialist. The animal was a six-year-old puppy, also certified for this form of therapy, named Cara. The fairly low costs and accessibility of a therapy dog allow relatively easy implementation of such intervention in the educational and/therapeutic programs of children with autism.

### **2.1. Research Goals**

The study focused on the surprise effects of AAT on the development of socio-emotional abilities of children with autism. In this context, the overall objective of the research is to investigate the development of socio-emotional skills of ASD children included in intervention programs based on animal-assisted therapy. Specific objectives include: 1) assessing the development of the ability to interact with adults of ASD children enrolled in a AAT program; 2) pursuing the pro-social behavior of children with ASD included in a AAT program; 3) monitoring emotional self-control of children with ASD included in intervention programs based on animal-assisted therapy; 4) appreciating the development of emotional expressiveness of children with ASD who benefited from AAT; 5) identifying the capabilities of recognizing and interpreting emotional expressions of children with ASD included in a AAT program; 6) assessing the achievement of the objectives of AAT intervention.

### **2.2. Research Hypotheses**

The research was based on the general hypothesis according to which we assumed that animal-assisted therapy contributes significantly to improving the socio-emotional development of children with ASD. Working hypotheses - using AAT in children with ASD: 1) contributes to improving the development of interaction skills with adults; 2) improves their social behavior; 3) contributes to improving the emotional self-control of children with ASD; 4) contributes to the development of emotional expressiveness of children with ASD; 5) contributes to the adequate recognition and interpretation of emotional expressions by children with ASD, we also assumed that 6) the level of achievement of the therapeutic objectives aimed at improving the socio-emotional development of children with autism is higher in AAT than in other therapies undergone.

### **2.3. Methods and Research Tools**

The research is of a qualitative type, as the main method of research was the case study, the data being collected through the interview-based survey, the observation method and the document analysis method. The type of design is descriptive, longitudinal research was conducted between June 2016 and April 2017 and includes 4 children with autism, their parents and their therapists. Children diagnosed with ASD participated in assisted

animal therapy once or twice a week.

The observation method focused on the frequency of manifestations of behaviors specific to autistic spectrum disorders. The observation grid was structured into five dimensions, represented by: adult interaction skills (with 9 observed behaviors), pro-social behavior (with 6 observed behaviors), emotional self-control (with 7 observed behaviors), emotional expressiveness (with 6 observed behaviors), and emotion recognition (with 2 observed behaviors). The observation grid was constructed by translating and adapting some of the indicators present in the Revised Behavior Summarized Evaluation Scale – BSE-R (Barthélémy, Roux, Adrien, Hameury, Guérin, Garreau, Fermanian, & Lelord, 1997), The Childhood Autism Rating Scale – CARS (Schopler, Reichler, & Renner, 1988), and The Autism Treatment Evaluation Checklist – ATEC (Bernard & Edelson, n.d.).

The document analysis method aimed at collecting information from the personal files of the four children from the recovery center where they were tracked, in order to make an anamnesis which mainly highlights the age of diagnosis, the ASD severity as well as the evolution of their recovery. Among the documents analyzed are: the psychological assessment sheet, the medical assessment report, the logopedic evaluation report, the kinotherapy report, the child's diary, the birth certificate, the medical letter, the educational path, the child's certificate of registration in a degree of disability, and treatment intervention plans.

Two interview guides were made: one addressed to therapists and one addressed to parents. The guide to interviewing therapists was done in five dimensions, namely: adult interaction skills (2 questions), social behavior (1 question), emotional self-control (1 question), emotional expressiveness (1 question), and appropriate recognition of emotions (1 question). The interview was conducted with two therapists: a therapist who performed animal-assisted therapy and a therapist who approached ABA therapy. The interviews were conducted at the end of some therapy sessions with the subjects included in this research. The interview with parents of children included in the research was also based on the five dimensions mentioned above.

### **3. Brief Presentation of Cases**

#### **3.1. Case study no. 1**

The A. D. subject was born on September, 2007, is a 9-year-old girl of Romanian ethnicity. The subject comes from a 4-member family, with a older brother. Mother is 40 years old with high school education, she is a computer operator and is declared to have a good health. The father is 35 with middle school education. Mother was 30 years old when the subject was born. It had problems during pregnancy. Birth was premature, subject was born 7 months through caesarean section and weighing 1kg 900g. He scored 7 at the APGAR score. A.D. has been diagnosed with infantile autism at the age of 3. Currently, she takes medical treatment. She was classified as seriously disabled and had a personal assistant.

#### **3.2. Case Study no. 2**

Subject V.S. was born on January, 2011, and is a boy. V.S. is part of a family of 3 members. Mother is 30 years old, has higher education, is a lawyer, and the father is 31

years old, also a lawyer. There were no special problems during pregnancy. He was born at 38 weeks with 3300g. Apgar score was 8/9. Parents noticed that, when the child was 13 months old, did not imitate behaviors, did not reproduce words or gestures. He stood, but only helped, and walked to the tip of his fingers. By the age of 3-4 months he maintained a proper visual contact with his parents, after which he was no longer attentive to the things around, he played more alone, especially interested in certain objects. The subject V.S. was diagnosed with autism, mildly psychic and language retardation, with atypical elements, and hyperkinetic disorder. The subject also has convergent strabismus.

### **3.3. Case Study no. 3**

The subject D.S. was born on February, 2013 and is a boy. The subject is part of a family consisting of 3 members, is the only child in the family. Mother has higher education, father has high school education. Both parents declare themselves healthy. During pregnancy, the mother of the child had no problems, she gave birth on time, with APGAR 9 score and weighing 2 kg 800 g. In the first few months of life, the subject developed normally, but the parents noticed the lack of communication from the subject and decided to consult a specialist. The child was diagnosed with autism, delay in expressive language, and bilateral hearing loss. Currently, the subject does not exhibit proper exploration and manipulation behavior of toys, it often engages in stereotypical behavior, walks from corner to corner of the room.

### **3.4. Case study no. 4**

The subject B.T. was born on October, 2009, he is a boy. The subject has a 4 years older sister. The child's mother is an engineer. No data is known about the child's father because he is no longer living with his family. During pregnancy the mother had several problems, she was hospitalized several times in hospital/maternity, but the birth was on time. The baby weighed 2kg 500g and the APGAR score was 9. At the age of one, parents took him to a doctor where they were told that show signs of autism and were given medical treatment. A committee of specialists has determined that the diagnosis is infantile autism. Currently, the subject exhibits a variety of excess behaviors that it exhibits at a high intensity, duration and frequency. B.T. manifests vocal stereotypes, auto stimulation with hand movements in the eyes, hyperkinesis of hands and feet, and tactile auto stimulation at the level of lips and mouth using objects.

## **4. The Results of the Research**

Following the observation of the children with autism in research, comparison and interpretation of the results, hypothesis number 1, according to which I assumed that the use of AAT in children with autism contribute to improving the development of interaction with adults skills has been validated since in all 4 case studies there were changes in the frequency of subjects' behavior; if, prior to the participation in AAT sessions, some subjects behaved often in a certain manner, after attending the therapy sessions, that behavior was manifested very often. As a result of attending AAT sessions, subjects communicate more often and easily with adults, they are very often aware when addressed by adults, they respond very often to adult's questions, they make visual

contact and ask for information or help when they need it.

In Figure 1 there have been highlighted some of the changes that occurred following the participation of the subjects in AAT sessions.

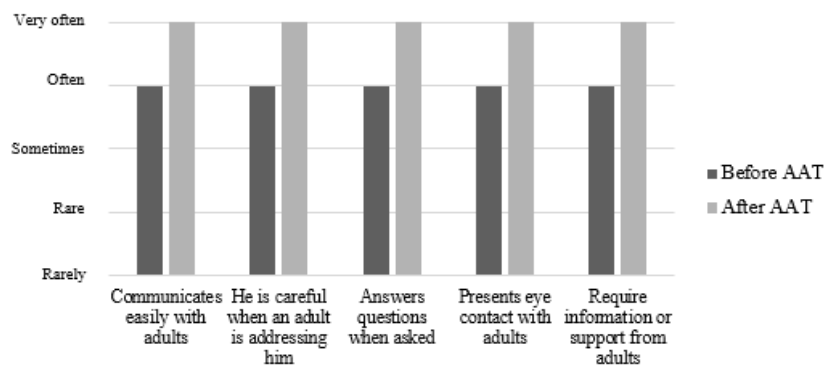


Fig. 1. *The ability to interact with adults*

Also, hypothesis number 2, which assumes that assisted animal therapy in children with autism improves their social behavior has been validated, as improvements in the behavior of subjects regarding waiting at a queue or imitating simple behaviors have been observed, they showed a reduced frequency of these behaviors, now, after attending TAA sessions, the frequency of these behaviors has increased. Also, after attending therapy sessions, subjects very often follow simple rules of participation in activities and games, in small groups and work very often without disturbing others. The following graph highlights some improvements that have emerged from the participants' participation in AAT sessions.

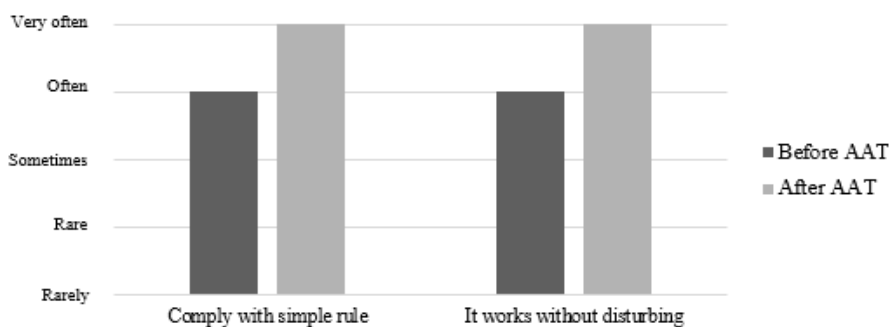


Fig. 2. *Social behavior*

Hypothesis number 3, in which assisted animal therapy was supposed to help improve emotional self-control of children with ASD, has been validated, as there have been changes in the frequency of subject behaviors. For example, if before attending AAT sessions, subjects often presented psychomotor agitation after attending AAT sessions this behavior is manifested at a reduced frequency: rarely do they present psychomotor agitation, now they rarely or hardly have aggressive behaviors, they seldom and very rare redirect their spontaneous attention to the intervention of irrelevant stimuli, often and

very often control their expression of feelings (especially the negative ones - anger), rarely or very rarely present behavioral stereotypes and often change their expression and behavior according to the context. The following chart highlighted some of the changes that occurred as a result of the participants' attendance in the AAT sessions.

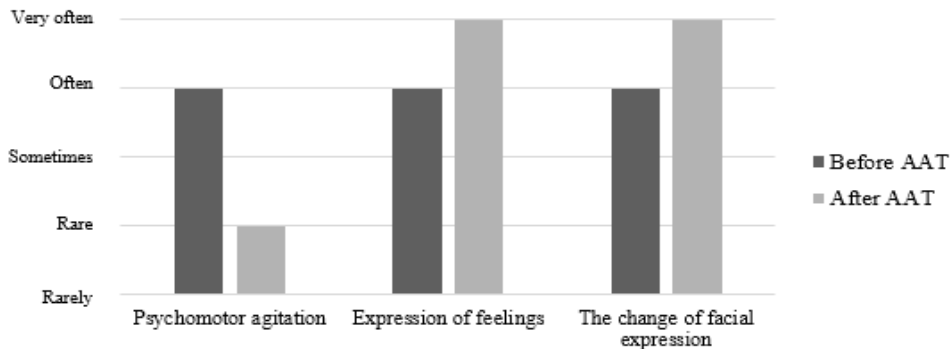


Fig. 3. Emotional self-control

The hypothesis number 4, which assumes that animal-assisted therapy contributes to the development of emotional expressiveness of children with autism, has been validated, as there have been changes in this dimension. After AAT sessions, subjects often express their emotions through artistic play and activities, react very often appropriately emotionally in various situations, seldom refuse to be hugged, cry less often, smile very often, and often associate emotions with facial expressions and words. The following chart highlighted some of the changes that occurred as a result of the participants' participation in the AAT sessions.

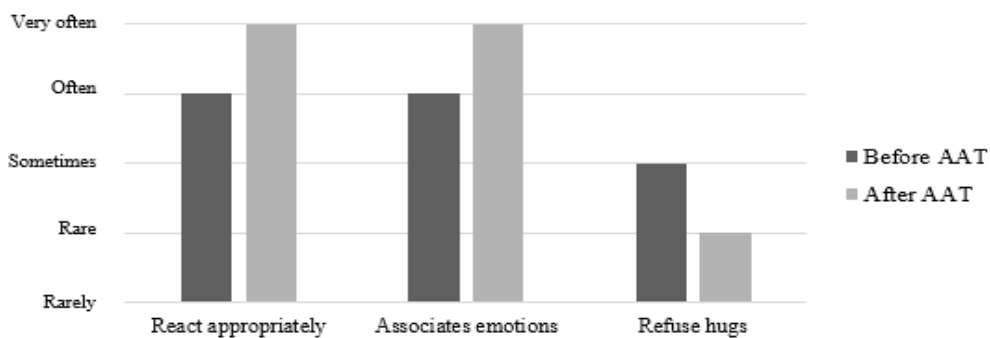


Fig. 4. Emotional expressivity

The hypothesis number 5, which assumes that animal-assisted therapy contributes to the proper recognition and interpretation of emotional expressions by children with autism, has been validated as changes in the frequency of behavior of subjects have been found. After participating in AAT sessions, subjects often recognize their own emotions and those of other people, and recognize emotions based on the non-verbal component: facial expression, posture, etc. The following chart highlighted some of the changes that occurred as a result of the participants' attendance in AAT sessions.

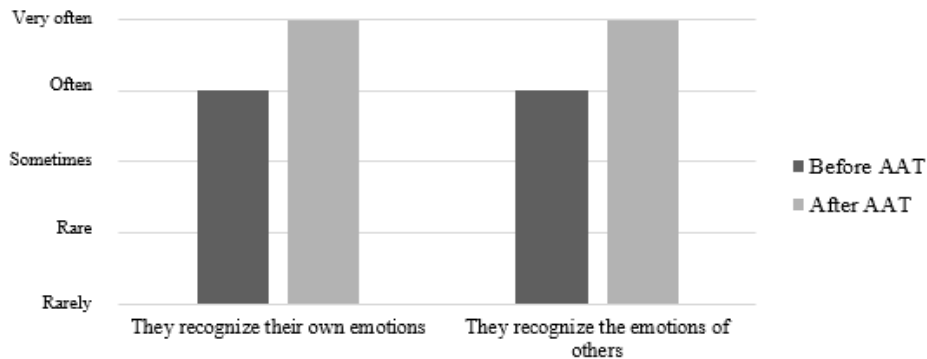


Fig. 5. *Appropriate recognition and interpretation of emotional expressions*

The 5 hypotheses presented above were validated with the help of the data collected following the application of the interview guides addressed to the parents of the subjects who participated in the sessions of AAT. All parents said they have seen improvements in the issues associated with their children's socio-emotional behavior.

Hypothesis number 6, according to which we assume that the level of achievement of the therapeutic objectives aimed at improving the socio-emotional development of children with autism is higher in AAT than in ABA therapy has been validated since from the answers given by the two therapists we drawn the fact that the therapist who adopted animal-assisted therapy has achieved better results in socio-emotional development of subjects than the therapist who has not adopted animal-assisted therapy. Following the interviews with the therapists, relevant information was obtained on the changes and improvements that took place in the socio-emotional development of children. Thus, the therapist who adopted AAT said that his children have become more enthusiastic, more cooperative, have begun to obey rules, express more emotions, have a diminished emotional rigidity, children smile more often, express how they feel, and regarding the appropriate recognition of emotions, the therapist who adopted the AAT states that participants in therapy sometimes recognize how others feel after facial expressiveness and are more aware of emotions; in comparison with the therapist who did not adopt AAT and who stated that the participants (children) did not show changes in socio-emotional development.

#### 4. Conclusions

The results of the study confirm the efficacy of AAT in improving the socio-emotional skills of children with autism. Children have a higher frequency of interacting with the adult behavior, of social behaviors, have a better control of emotions, emotional expressiveness, and can interpret emotional expression appropriately.

These results are in line with recent studies on the beneficial effects of AAT in children with autism in terms of the frequency of behavior linked to development of socio-emotional skills. Although the mechanisms by which these effects are not yet clear, the practical implications of the application of this adjunctive therapy to the recovery of the significant socio-emotional deficits of children with autism are diverse. Therefore, it can be argued that the presence of a therapy dog brings improvements in the socio-emotional functioning of children with autism.

Regarding the limits found in the research, I can say that parents' willingness to answer questions in the interview guide is one of the limits. Also, time was another limit, as therapy sessions had to be planned weekly depending on the subject schedule and last but not least on my college schedule. Another limit could be the fact that we had to take care that the puppy does not feel stressed and does not get tired, because the subjects sometimes pulled her fur, stroked her excessively, etc. The fact that one of the subjects' therapists was afraid of dogs was a limit. Another limit would be the fact that I did not have any research or witness cases that did not undergo AAT. Accessing subjects' files was a limit, and we could hardly collect the information that was of interest for the purposes of conducting the case studies. The main limit of the study is the lack of control of the other variables that could explain the therapeutic progress of the subjects. Also, the therapeutic progress can be explained by the learning and maturation processes occurring during the 11 months in which they were monitored.

With regard to personal contribution, it may be noted that in the research, before starting the AAT meetings, we analyzed the subjects' files and, based on them, we made the intervention plans describing the activities and exercises that were to be developed at the AAT meetings with the subjects. It is worth mentioning that each individual subject corresponds to an intervention plan, since the activities and exercises were largely different, except for some, which were executed with all the subjects. I also personally handled the implementation of assisted animal therapy at the center and implicitly in the city of Braşov, since until then the AAT has not been carried out.

Concerning future research directions, the study on the effects of AAT in physical therapy sessions of children with neuro motor disabilities or the effects of cat purring on reducing anxiety in children and on reducing stress levels in adults could be addressed.

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