



ORIGINAL RESEARCH ARTICLE

OPEN ACCESS

ACTIVITY ASSISTED BY DOGS IN THE TREATMENT OF CHILDREN WITH AUTISM SPECTRUM DISORDER - A COMPARATIVE STUDY UNDER THE PERSPECTIVE OF THE PARENTS

* Antonio Carlos Rodrigues, Rosendo Freitas de Amorim, Giselle Maranhão Sucupira Mesquita, Wanderlei Gomes Filho, Erika Maria Rocha Leite, Alexandre Pinheiro Braga, Zélia Maria de Sousa Araújo Santos, Aline Veras Moraes Brilhante, Mirna Albuquerque Frota, Marinina Gruska Benevides, Paula Dayanna Sousa dos Santos and Francisco Ricardo Miranda Pinto

Master in Collective Health from the University of Fortaleza, Brazil

ARTICLE INFO

Article History:

Received 17th December, 2017
Received in revised form
16th January, 2018
Accepted 04th February, 2018
Published online 30th March, 2018

Key Words:

Autism; Evaluation;
Treatment Procedures.

ABSTRACT

Introduction: The treatment of autism spectrum disorder, due to its difficulty in diagnosis through clinical exams, presents challenges regarding the inclusion and maintenance of treatment procedures and effective therapies.

Objective: The study aims to apply a checklist to the parents of autistic children in two moments in order to evaluate the effectiveness of the Assisted Activity by Dogs in addition to other treatments for autism given to their children.

Methodological Path: This is a quantitative-qualitative research of a comparative nature. The research was carried out at the Casa da Esperança Foundation, in Fortaleza, Ceará, from May to July 2016, after approval by the Ethics Committee of Opinion No. 1540551/2016. An Autism Treatment Assessment Checklist (ATEC) was used as an instrument at an initial time and the application of the same form was repeated two months later for a comparative analysis of data. The sample consisted of ten parents of children with autism spectrum disorder.

Results and Discussion: After completing the second form by the parents / mothers of the children with ASD, we obtained the final results that were compared with the first results. All children showed a significant decrease in the score of the second ATEC form (T1) when compared to the form applied in Time Zero (T0), which characterizes an evolution in the treatment, because the lower the score, the better. A mean decrease = 8.3 points was obtained.

Final Considerations: In this way, it concludes that it is important to encourage professionals to maintain the therapies and procedures performed in Early Intervention, since they have shown efficient results, according to the parents' evaluation.

Copyright © 2018, Antônio Carlos Rodrigues et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Antônio Carlos Rodrigues, Rosendo Freitas de Amorim, Giselle Maranhão Sucupira Mesquita, et al., 2018. "Activity assisted by dogs in the treatment of children with autism spectrum disorder - a comparative study under the perspective of the parents", *International Journal of Development Research*. 8. (03). 19566-19569.

INTRODUCTION

The issues related to autism have, to a certain extent, become more commented in recent years, since the theme has been stereotyped in national media, such as soap operas, television programs, among others. It is emphasized that common sense still prevails, as do the questions that approach the subject. Autism Spectrum Disorder (ASD) is a neuro developmental disorder that affects early communication, socialization, and

*Corresponding author: Antônio Carlos Rodrigues,
Master in Collective Health from the University of Fortaleza, Brazil.

behavioral skills. The prevalence in the population was 1:68 in the year 2012, according to the Centers for Disease Control and Prevention (CDC), being more common in males. This research was carried out in 11 American states, representing 8.5% of the population of children up to 8 years of age in the United States that year (SURVEILLANCE SUMMARIES, 2016). According to Varella (2014), although Brazil does not have a similar study register, these data can also be used in Brazilian reality. To date there are no tests that can diagnose autism. The diagnosis is based on clinical observations and comparisons with criteria established in the International Classification of Diseases (ICD 10) and Diagnostic and

Statistical Manual of Mental Disorders (DSM-5). This diagnosis should occur preferentially in early childhood, where therapeutic interventions are most effective and inadequate behaviors are not yet in place. The later the diagnosis is made and the interventions are proposed, the course of treatment will no longer be as effective and the interventions will often only provide a more comfortable quality of life for the person with autism and his or her family (Munoz, 2014). Initially autism manifests itself in limitations of non-verbal communication, imitation, imaginative ability, visual contact, socio-emotional reciprocity, and the development and maintenance of relationships (Freire, 2014). In a more advanced situation it is possible to identify signs such as the stereotyped use of the body or objects, resistance to changes, fixation of interests and hyper or hypo sensitivity to sensorial stimuli.

In addition, TEA is often associated with intellectual disability and delayed language development (Klin, 2006). Because of its precocity and chronicity, ASD can be a major impact for the family (Schmidt and Bosa, 2003). After receiving the diagnosis, the family needs to change its habits to adapt to a new dynamic that demands effort, coping skills and resilience (Barbosa and Oliveira, 2008). The severity of symptoms such as agitation, aggressiveness, irritability, social avoidance, language delay, cognitive impairment and child dependence are stress factors related to the degree of impact (Fávero and Santos, 2005; Andrade and Teodoro, 2012). The TEA has always been the object of curiosity, questions and interest in the area of Health. Its phenomenological and behavioral diversity, the discussions about its possible causes and the different treatment proposals motivate the research in several fields of knowledge (Mercadante *et al.*, 2006). The Guidelines for Attention to the Person Rehabilitation with ASD (Brasil, 2014) guide the multi professional teams of the attention points of the SUS Network for the health care of the person with ASD and his / her family in the different points of attention of the Network of Person Care with Disability. The multi professional team should be prepared from the initial identification to the conclusive diagnosis of ASD.

The timing of the diagnosis should be carefully prepared as it will be very distressing to the family and will have an impact on their future adherence to treatment. The presentation of the diagnosis should be complemented by the suggestion of treatment, including all activities suggested in the singular therapeutic design. The referral to the professionals who will be involved in the care of the case must be done in an objective and immediate way, respecting, of course, the time necessary for each family to elaborate the new situation. After diagnosis and communication to the family, the treatment and habilitation / rehabilitation phases are started immediately. New forms of care have been added to the treatments already proven, in order to improve ways of stimulating the abilities affected by the TEA and to ameliorate its symptoms (Berger, 2003). Although each child with ASD is different, all children present difficulties with communication and social interaction. They may also have difficulties with non-verbal communication, such as looking in the eyes, facial expressions, and gestures (such as pointing).

Play skills develop late and may seem repetitive and unusual. Behaviors and sensory sensitivities also vary. Although some children are easy to reach and accessible, others may have a difficult temper and little tolerance for change or frustration. Like the dots strengths and problems vary, each child will need

a different combination of program and services suited to their individual learning and social profile (Autism Consortium, 2013). Therapies can be a bridge between the child with autism and the pedagogue, where both have the opportunity for an approach between two distant worlds. Considering the importance of therapies applied to early intervention in the treatment of autism spectrum disorder, this study aimed to understand the parents' perception of the developmental progress of their children.

Methodological Route

It is a qualitative study and quantitative tools to characterize identification data and knowledge about the reality and development of children with ASD, with a methodological complementarity that allowed a more effective approximation to the comprehension of the complex reality studied. The relation between quantitative and qualitative, between objectivity and subjectivity, is not reduced to a continuum, therefore; it can not be thought of as contradictory opposition. Thus, "the quantitative study can generate questions to be qualitatively deepened, and vice versa" (Minayo and Sanches, 1993, p 247). The research was conducted at the Casa da Esperança Foundation, in Fortaleza, Ceará, specifically in the Early Intervention sector, from May to July 2016. The Casa da Esperança Foundation was made possible through numerous and decisive partnerships and currently offers the following services to patients with Autism Spectrum Disorder: Health Care Center, Early Intervention, Therapeutic Workshops, Specialized Educational Assistance, Family Attention Center, Courses and Seminars. The Early Intervention rooms are for children one to six years old who receive intensive care from a multi professional team, about four hours a day, with emphasis on the development of communication skills and emotional regulation. Individual and group sessions of speech therapy (two hours per day), sensory and cognitive behavioral therapy with occupational therapists and psychologists are carried out. All the children assisted in this service are accompanied, also, by the medical and social teams of the organization.

The participants were ten fathers / mothers of children between three and five years of age, with autism spectrum disorder, having been adopted as inclusion criteria students enrolled for more than two months and diagnosed with autism spectrum disorders mild to moderate. For the information collection, a checklist of Autism Treatment Assessment (ATEC) was applied to the parents of the participating children in two moments: before and after the introduction of the project of Assisted Activity by Dogs, which lasted two months.

The AUTISM RESEARCH INSTITUTE (2007) is a scale developed specifically to evaluate the effectiveness of treatments for autism, proposing to be more sensitive to improvements in the child's condition than the diagnostic tools. A form that is already translated and validated presents a scale inversely proportional to the subject's improvement, divided into four subscales that cover all areas affected by autism: (1) speech / language / communication (14 items), (2) sociability items), (3) sensory / cognitive perception (18 items) and (4) health / physical aspects / behavior (25 items). Psychometric analyzes, performed by researchers, showed high reliability of the ATEC in the parameters test-retest and internal consistency (Freire *et al.*, 2013). The ATEC form was developed in 1999 to help researchers evaluate the effectiveness of various

treatments for autistic children and adults and to help parents determine if their children benefit from a specific treatment. Parents and teachers use ATEC to monitor or monitor the development and course of treatment of their children and students, respectively, over time, even without the introduction of a new treatment. This form was used in this research to analyze the parents' perception regarding the evolution of the autism treatment of their respective children. The research was approved by the Research Ethics Committee of the University of Fortaleza (UNIFOR), whose final opinion presents no. 1540551/2016. All the participants signed the Informed Consent Term (TCLE). Participant names have been changed by numbers from 1 to 10 to remain anonymous.

RESULTS AND DISCUSSION

The ATEC form is divided into four topics: 1) Speech / language / communication, 2) Sociability, 3) Sensory / cognitive perception and 4) Health / physical aspects / behavior. In the table below are inserted the values of the results found in each topic after interviews with the parents / mothers of children with ASD, being T0 = The initial time of application of the forms and T1 = The moment of application of the second form two months later, containing the same issues. The ATEC score ranges from 0 to 180. The lower the score, the better. If a person scores zero or close to zero, it cannot be distinguished from non-autistic people and, therefore; can be considered fully recovered. ATEC <30. This level classifies the person in the top 10 percentage. A person with a score of less than 30 has the ability to conduct normally two-way conversations and more sociable behavior. These people have high chances of leading a normal life as independent individuals. ATEC <50. This puts the person at the 30 percent level. The person has a good chance of being semi-independent. This level is already considered very significant. ATEC > 104. Even if the maximum score is 180, anyone with a score greater than 104 points is already in the 90th percent, which is considered to be severe autistic. After completing the second form by the parents / mothers of children with ASD, we obtained the final results that were compared with the first results.

All children showed a significant decrease in the score of the second ATEC form (T1) when compared to the form applied in Time Zero (T0). A mean decrease was obtained = 8.3 points, and child number 3 was the one that had the most significant decrease in the sum of points: 21, indicating in the topic Sociability a considerable improvement. In the first form, the same child obtained a score of 107, which classified it in the percentage 90, that is, with a severe level of autism, and two months later its classification decreased, indicating that the therapies applied to Early Intervention were primordial for the development of Sociability, in question. Children 1, 2 and 5 presented a final score of less than 50, that is, they are classified in the 30th level, with a high probability of being semi-independent. The other children are classified as moderate autism, but it is worth noting that all of them had a great acceptance of the Assisted Activity by Dogs, which added to the other therapies existing within the institution, brought this significant result through the parents' perception.

Final considerations

Thus, according to the parents' evaluation, it is important to encourage professionals to maintain the therapies and

procedures performed in Early Intervention, including the project of Assisted Activity by Dogs, since they have shown efficient results. The fact that some children do not present a significant evolution when compared with the other children is justified because, during the Assisted Activity by Dogs, it was observed that these same children did not interact much with the dogs. It is important to mention that the treatment of ASD should be extended also in the family, not leaving only the responsibility of care to health professionals and education, the caring and comfort of the home are essential for the evolution of treatment.

REFERENCES

- Andrade, A.A. and Teodoro, M.L. 2012. Family and Autism: A Literature Review. *Clinical Contexts*, Belo Horizonte, v. 5, n. 2, p. 133-142, 2012.
- Autism Consortium. Information for parents of children with autism spectrum disorder. 2013. Available at: <http://www.autismconsortium.org/attachments/PIP_POR_T_2013.pdf> Accessed on: 15 jun 2016.
- Autism Research Institute. Autism is Treatable (US): Autism Treatment Evaluation Checklist (ATEC). 2007. Available at: <<http://www.autism.com>> Accessed on: 01 April 2016.
- Barbosa, A. and Oliveira, L. 2008. Stress and coping in parents of people with special needs. *Psychology and Research*, Juiz de Fora, v. 2, n. 2, p. 36-50.
- Berger, D. S. 2003. Music Therapy, Sensory Integration and the Autistic child. London, UK: Jessica Kingsley Publishers Ltd,
- Brazil. Ministry of Health. Guidelines for the rehabilitation of people with autism spectrum disorders. 2014. 88 p. 1. ed. Brasília: Ministry of Health, 2014.
- Fávero, M.A. and Santos, M. A. 2005. Childhood Autism and Family Stress: a systematic review of the literature. *Psychology: Reflection and Criticism*, Ribeirão Preto, v. 18, n. 3, p. 358-369.
- Freire, M. H. 2016. Effects of Improvisational Music Therapy in the treatment of children with Autism Spectrum Disorder. 2014. 75 f. Dissertation (Master in Neurosciences) - Federal University of Minas Gerais, Belo Horizonte.
- Freire, M. H., Sampaio, R. T. and Kummer, A. M. 2013. Test-retest reliability on treatment assessment scale for autism (AEC). In: CONGRESS OF THE BRAZILIAN SOCIETY OF NEUROSCIENCES AND BEHAVIOR, 37., 2013, Belo Horizonte. Anais ... Belo Horizonte.
- Klin, A. Autism and Asperger, 2006. Syndrome: an overview. *Revista Brasileira de Psiquiatria*, São Paulo, v. 28, suppl. 1, p. s3-s11.
- Mercadante, M.T., Gaag, R.J. and Schwartzman, J. S. 2006. Non-autistic developmental disorders: Rett syndrome, childhood disintegrative disorder, and non-specific developmental disorders. *Revista Brasileira de Psiquiatria*, São Paulo. v. 28, suppl. 1, p. s12-s20.
- Minayo, M.C.S. and Sanches, O. 1993. Quantitative-qualitative: opposition or complementarity? *Cad. Saúde Pública*, Rio de Janeiro, v. 9, n. 3, p. 237-248.
- Munoz, P. O. L. 2014. Animal-assisted therapy - Interaction between dogs and autistic children. 2014. 87 f. Dissertation (Master in Experimental Psychology) - Institute of Psychology, University of São Paulo, São Paulo.
- Schmidt, C., Bosa, C. 2003. The investigation of the impact of autism in the family: critical review of the literature and proposal of a new model. *Interaction in Psychology*, Porto

Alegre, v. 7, n. 2, p. 111-120.
Surveillance Summaries. Autism and Developmental Disabilities Monitoring (ADDM) Network, United States, 2016. Available at: <<http://www.cdc.gov/ncbddd/autism/addm.html>> Accessed on: May 20, 2016.

Varella, D. 2014. Study Finds Increase in Autism Cases in US Available at: <<http://drauziovarella.com.br/noticias/estudo-aponta-aumento-nos-casos-de-autismo-nos-eua/>> Accessed on: May 20, 2016.

Annexes

Authorization for Use of ATEC - Autism Treatment Evaluation Checklist

De: Stephen Edelson <director@autism.com>
Data: 26 de outubro de 2015 13:43:49 BRT
Para: Antonio Carlos Rodrigues <acro1@hotmail.com>
Cc: "atec@autism.com" <atec@autism.com>, "denise@autism.com" <denise@autism.com>
Assunto: On the: AUTHORIZATION ATEC FORM

Dear Antonio Carlos Rodrigues,

You have my permission to use the Autism Treatment Evaluation Checklist (ATEC) for your dissertation.

Best Regards,
Steve Edelson, Ph.D.
Director, Autism Research Institute
