

The psychosocial benefits of an assistant dog for Irish autistic children and their families

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Abstract

This study is based on Animal Assistance Therapy and the use of an assistance dog for children with autistic disorders. A snowball sampling of 41 Irish families living in Ireland who own an Assistance Dog were asked to fill out questionnaires evaluating the psychosocial disorder of their child, their stress levels and the roles and benefits of owning an assistance dog. A significant relationship was found between the psychosocial issues of autistic children, family stress levels and the number of years in owning an assistance dog.

The longer the dog was present in the life of an autistic child and their families, the less psychosocial issues were observed and less worry and stress were experienced by the parents. The project confirms that the central role of the assistance dog in the home and in the community, improves the quality of life for children with autism and their families.

Introduction

Genetic information suggests that primitive humans may have begun to domesticate animals centuries ago. Consequently, a mutually beneficial and dynamic bond between people and animals has evolved. This strong relationship between humans and animals forms the basis of Animal Assistance Therapy, whereby the quality of life of patients with chronic diseases is improved through the use of animals (Olson, 2002).

Training dogs professionally began in the 1920's ,at first with guide dogs and since then has expanded to include response dogs and assistance dogs for people with mental or emotional disabilities, like people suffering from autism (Nattrass, Davis, O'Brian, Patroneck, & Mc Collins, 2004).

Assistance dogs have been used in particular on autistic children who during their lives face challenges such as communication, social development and community integration.

Research studies indicate that autistic children who receive an assistance dog show benefits and improvement in their lives (Turner, 2011).

This project aims to investigate how the presence of an assistance dog can be beneficial for an autistic child and also how an assistance dog may benefit their families. Difficulties such as stress and isolation experienced by families who have an autistic child are also investigated.

This project aims to improve the use and the development of Animal Assistance Therapy in Ireland.

History of Human and Animal Bonds

Domesticated animals have played a significant role in the life of humans for thousands of years. The term domestication comes from 'domus', home, meaning that humans have brought some animal species close to their home. Although the purpose of domestication was to achieve utilitarian goals, the daily contact had induced the establishment of a relationship between human and animals (Gradgeorge & Hausberger, 2001).

The power of human/animal bonds has been well documented in literature and a number of scholars tried also to explain and to establish the nature of the bond between human and animals.

Attachment theory developed by Bowlby 1969 explains the need for humans to protect and to be protected; this reason could be the base of the bond (Fine & Beck, 2010).

Barba (1995) suggested that the roles of humans in relationships with their pets can be considered as a role parallel to human/human relationships: young children rely on their parents; pets must depend on their human companions for care and protection from dangerous situations.

The American Veterinary Medical Association's Committee defines the human animal bond as the mutually beneficial and dynamic relationship between people and animals that is influenced by behaviours essential to the health and well-being of both (Fine & Beck, 2010).

Social support theory, Fine and Beck (2010) buttressed by a large volume of research, describe the positive health effects of human social companionship; animals are demonstrably a source of social support: research conducted in the USA show that a

large number of American people say that the pet is number one in the family and they talk to their pet as they would to a person or consider their pet a confidante.

A sense of safety and relaxation in humans tends to be noticed when a friendly and calm animal is present. Therefore it is well demonstrated that animal contact can influence psychological and physiological parameters important to health and welfare. Beck and Katcher (2003) focus attention on psychological factors that play a fundamental role in health and-particularly in the progression of severe forms of diseases, suggesting that the presence of animal companionships was one of an important psychological factor relating to health and development of disease.

One of the most remarkable and important areas of research conducted in this field began in 1987 by The National Institute of Health (NIH) in the United States.

At the time the researchers of NIH started by taking into consideration the health benefits experienced by pet owners, for example patients had an increase in one year survival rates subsequent to being discharged from coronary care units.

Continuing research conducted over ten years indicated that dog ownership, lowered anxiety. The presence of a pet and the consequent relationship with the patient reduced the incidence of cardiovascular disease and an increase in one year survival rates after a myocardial infection (Beck & Katcher, 2003).

Animal Assisted Therapy (AAT)

The first intentional use of animals for therapeutic support dates back to the 11th century in a Belgian hospital where animals were used as part of the “therapie naturelle” which was provided for handicapped members of the community (Gradgeorge & Hausberger, 2001).

In the 18th and 19th century various species of animals have been part of the health care institutions in Europe: for example in 1792 at the York Retreat in England, birds and rabbits were used to help those considered insane (Gradgeorge & Hausberger, 2001).

In 1940 a military hospital in the USA recommended that veterans of World War II suffering from post traumatic stress attend a program which consisted of physical activity working at facility’s farm (Gradgeorge & Hausberger, 2001).

Scientific observations in this field began in the 20th century with Levinson who is considered the father on animal assisted therapy.

By chance, his dog was present in his office during a consultation with a child and their parents. The boy was unable to speak and during the consultation he began to interact with the dog expressing also the desire to come back and play with it. The start of this relationship leads to a gradual improvement of the boy’s condition, culminating in the boy talking for the first time with the dog (Gradgeorge & Hausberger, 2001).

After the 1960s studies relating to animal assisted therapy developed with two main peaks: the first one was in the 1980’s and the second one in the 1990’s.

Many terms and definitions have been used over the years to describe the field of animal assisted therapy. These terms reflect the diversity of practices: some have therapeutic aims; others can perform educational or social functions.

In order to bring light and clearance in the multiplicity of terms and definitions and to promote the standardisation of terminology, the Delta Society one of the largest organisations responsible for the certification of animal therapy in the United States published definitions of animal-assisted therapy (AAT) and animal-assisted activity (AAA)

AAT is a goal-directed intervention in which an animal that meets specific criteria is an integral part of the treatment process delivered by a professional figure in the area. Features of the therapy include specified goals and objectives for each individual and measured progress (Shubert, 2012).

AAA provides opportunities for motivational, educational and therapeutic benefits to enhance the quality of life.

AAA is delivered in a variety of environments and in association with animals that meet specific criteria and it does not include specific treatment goals (Shubert, 2012). Animal-assisted therapy is able to aid many aspects of a person's well being and the impact of AAT on physical health has been studied in several areas of medicine taking into consideration numerous patients with different form of health issues.

It is increasingly recognised that pharmacotherapy for people affected by chronic illness has inherent limitations as well as carrying significant risks of its own.

Additionally patients with these types of conditions have cognitive impairments and impairments in social functioning; AAT can be a useful treatment for patients by increasing social interaction and decreasing problem behaviours (Tyberg & Frishman, 2008).

Serpell (1991) examined changes in behaviour and health status among 71 adults who had acquired a new pet dog or cat and 26 non-pet owners who acted as a control group.

The study reported a significant reduction in minor health problems during the first month after acquiring the dog and significant improvements in psychological well-being during the first six months of pet ownership-

Over a 10 month period, improvement of self esteem was reported and also owners were less afraid that they would become victims of crime.

Friedmann, Katcher, Lynch and Thomas (1980) suggest the existence of a link between human-animal companionship and cardiovascular health and increased social interaction. The study examined the effect of social isolation and support on survival rates of persons hospitalized in a coronary care unit suffering from myocardial infection and angina pectoris. The researchers hypothesized that the absence of a companion dog interfered with the person's ability to maintain healthy behaviours and normal activity level. The study consisted of 92 patients, 53 were dog owners and 39 non dog owners. After one year 14 patients died, 11 were of them not pet owners. Fredmann and colleagues concluded that dog ownership could be a measure of physical status affecting health due to exercise input that their care required (All, Loving & Crane, 1999).

It is well established that the bond between human and animals is the core of animal-assisted therapies which use various species of animals for therapeutic treatments.

In the United States the American disabilities Act 2010 (ADA) defines a service/assistance animal as any dog that is individually trained to work or perform tasks that benefit an individual with disability including physical, sensory, psychiatric, intellectual or any other mental disability. Assistance dogs can promote functional independence and a better quality of life (Mills, 2012).

Specially trained assistance dogs can perform a variety of tasks such as providing balance and counterbalance, alerting the handler to pending medical disorders such as

seizures or hypoglycaemia, assisting to pull a wheel chair, retrieving items, and turning lights on and off etc. (Shubert, 2012).

A number of studies examined the use of assistance dogs in patients with chronic, mental and lifelong illnesses. Assistance dogs have been used for those suffering from seizures: the dog can sense physiological change in their owner when a seizure is approaching and alert the owner ahead of time, allowing the owner to move in a safer place and to take preventative medication (Tyberg & Frishman, 2008).

A study conducted at Sydney University found that the presence of an assistance dog decreased aggression and agitation and increased social behaviours in patients with dementia (Tyberg & Frishman, 2008).

Psychological, social and functional outcomes must be taken into consideration when owning an assistance dog.

Research from Lane, Hart and colleagues (1987) report that people who own an assistance dog have better social lives and increased interaction with people when they are out with dog.

Although AAT has been shown to provide many benefits for a variety of patients with medical conditions, adverse effects of this form of therapy must be taken into consideration. Animals carry a variety of zoonotic diseases like rabies, internal and external parasitism which may induce allergies in patients. They may also bite or scratch when they interact with patients. Yet, despite these potential risks, AAT therapy appears to be relatively safe (Tyberg & Frishman, 2008).

It is possible to conclude that AAT has shown to have beneficial effects from a psychological, social and medical point of view and certainly has the potential to be considered as a useful complementary therapy that could improve the quality of life of many people suffering from different difficulties.

Animals and Children

Companion animals can play an important role in the development of children because they are more at ease in crossing species lines and have an intuitive understanding that we are both human and animal (Brown, 2004).

Alper 1993 stated that in families where the parents are unable to provide emotional support or are inadequate figures with whom to identify with, the child will be unable to form a positive stable consistent sense of self (Alper, 1993).

In families where emotional expression and attachment are limited, children may find it safer to explore their emotions with their companion animals: animals do not criticize, retaliate or reject the child who is expressive in showing off their emotions.

Alper points out that in many cases the family companion animals can provide a means to a healthy emotional balance and continued development (Alper, 1993).

Alper in his theory explained that different species of animals have different impacts on humans and in particular dogs have been found to have had beneficial impacts on people, particularly children since they are able to show direct reactions and emotional states to them (Alper, 1993).

Further studies on the impact of pets on children suggest the positive role of pets in the development of nurturance (Daly & Morton, 2009).

The benefits of pets have been demonstrated also in a number of programs using AAT for children with cognitive, physical and psychological disorders.

In 1998 counsellors at Thurston High School in Ohio (USA) reported that the use of a therapy dog helped the students to calm down and return to a sense of normality after psychosis; finding that the patient felt safer and more relaxed when an animal was present (Berk, Seraydarian & Hunter, 1986).

Barker and Dawson (1998) investigated the use of AAT on children with mental disorders and found a statistical decrease in anxiety among the group of children who were in contact with a dog as opposed to a group of children treated with conventional relaxation methods.

The general assumptions related to AAT with children underline that therapy dogs are interactive with them: children seem to perceive the dog as non-judgemental and are outside the complications and expectations of human relationships. This unique interaction may offer children a form of social and emotional support in educational and therapeutic settings (Brown, 2004).

Understanding Autism

The American Psychiatric Association in 2000 defined autism as a neuro-developmental disorder resulting in impaired cognitive abilities, communication, social interaction and restricted reoccurring behaviours (Avril, 2000).

Pioneering research conducted by Kanner 1963 defined the symptoms of autism as the inability to relate to others, lacking conveyance of meaning and having restricted interests (Kashel & Meilijson, 1996).

The autistic disorder is heterogeneous in nature with symptoms varying widely in form and intensity within the diagnosis. Diagnostic research found that autistic conditions tend to begin before three years of age; however some symptoms such as a deficiency in responding to attention can be detected in children as young as fourteen months of age (Sullivan et al., 2007).

According to the World Health Organization, within the last twenty years there has been an increase in the number of diagnosed cases of autism. They suggest that by

2020 the number of children with neuropsychiatric disorders will increase by over 50% (Nattrass, Davis, O'Brian, Patroneck, & Mc Collins, 2004).

The American Psychiatric Association (2000) classified autistic disorders as part of a broader family of pervasive developmental disorders (PDDs) (Avril, 2000).

Impairments in the autistic individual's abilities in communicating and socializing are purported to be best explained by having deficiencies in their ability to do so.

However, behavioral abnormalities such as restrictive or repetitive behaviors cannot be accounted for by such deficiencies. Impairments in communication and socialization result in excessive reliance upon executive-functioning in social contexts (Ruser et al., 2007).

Specific deficits in social interactions include impairments in the use of directed eye-gaze whilst communicating, lacking empathetic awareness, misinterpreting gestures, the inability to form intimate relationships such as friendship and inappropriate use of gestural communication (Kashel & Meilijson, 1996).

Autistic individuals display a wide range of atypical and stereotypical patterns of behaviors, often including repetitive body movements like clapping, rocking and self-injurious behaviors (Levy, Kim & Olive, 2006).

Pragmatic language is defined as the use of language in social contexts which communicates intentions and references (Philofsky, Fidler & Hepburn, 2007).

Research indicates that deficiencies in pragmatic language are a general feature of the autistic disorder: language impairments in the autistic population vary from lacking in speech to abnormal speech patterns (Kashel & Meilijson, 1996).

Interventions for children diagnosed with autistic disorders may vary (Kashel & Meilijson, 1996).

Common interventions for autistic behaviour include teaching various skills such as communication and social behaviours, thought reinforcement schedulers, modelling or imitation; interventions also involve speech or language therapy and the use of psychotropic medications (Kronenberger & Mayer, 2001).

Positive effects in the treatment of autism are found to be significant when the treatments involve early interventions incorporating multiple components, such as treatments of speech and language, imitative interactions and intensive behavioural interventions (Levy, Kim & Olive, 2006).

AAT and the use of assistance dogs have been also extremely helpful for children with autism as an integrative form of therapy (Barker & Dawson, 1998).

The role of the Assistance dog autistic children

Over the past number of years AAT and assistance dogs have been used in the treatment and intervention of autism. The scientific investigation of the human-animal bond and its potential for medical and mental health interventions has increased in recent decades (Sams, Fortney & Willenbring, 2006).

According to the “biophilia” hypothesis, humans have adapted to be attentive to both human and nonhuman forms of life present in the environment. An increasing number of developmentalists in relation to child development have begun to adopt a “biocentric” perspective which departs from the traditional anthropocentric theory and research, suggesting that children exhibit a natural interest towards animals and other nonhuman aspects of the environment (Sams, Fortney & Willenbring, 2006).

One of the most profound and moving examples of the potential power of the ‘biophilic’ approach in understanding human development in general and particularly in autism comes from Temple Grandin: a leading professor of animal science, who is

herself diagnosed with autism. In her writings about her life she provides insights into an inner world of autism describing also a sensitive understanding of animal behaviour: “Being autistic has helped me to understand how they [animals] feel... People often fail to observe animals” (Sams, Fortney & Willenbring, 2006).

Redefer and Goodman (1989) conducted research involving animals in the treatment of autistic children. Their research investigated the effect on AAT on autism.

They measured several markers of changes in social interactions in autistic children, aged from five to ten, who were considered to be severely impaired. These children were involved in therapy sessions where a dog was present. The researchers conducted a number of monitored sessions with autistic children and dogs (Redefer & Goodman, 1989).

A number of changes in social interactions were discovered which were attributed to the fact that the dogs offered a multisensory experience which overcame the children’s inhibited sensory arousal levels and the actions of the dogs (simple and repetitive) were easy nonverbal acts for the children to decipher. The researchers’ finally suggested that the children were better prepared to be involved in social interactions due to the priming effects of the dogs (Redefer & Goodman, 1989).

More recently Burrows and Adams (2005) conducted a qualitative study to assess the benefits and changes associated with the placement of service dogs with autistic children. Families were interviewed over the course of twelve months. Positive results were reported including a decreased level of stress due to the safety the service dogs provided to parents by alerting them when their child was in unsafe situations.

Other changes were also reported like improvements in motor functions and behaviours. It was also reported that parents who were avoiding social interactions and situations due to feelings of embarrassment received a more positive reception

from the public and felt less isolated after the placement of an assistance dog.

Burrows concluded that the assistance dog offers benefits like safety, socialisation, manages behaviour and decreases stress and anxiety (Burrows & Adams. 2005).

Because autism is not life threatening individuals with autism require services and supports throughout their lifespan. Society must be compelled to discover and make available a variety of options and interactions for those affected by autism from early childhood, the contribution of animal assistance interventions in using assistance dogs can provide an enriched quality of life (Pavlidis, 2008).

Assistance dogs can be trained to accomplish different tasks, however one of the main roles provided by assistance dogs is in preventing the autistic child from potentially dangerous situations such as bolting unexpectedly into traffic (Pavlidis, 2008).

The dog is often tethered in some way to the child while the parent holds a leash.

Eventually the child will learn to hold the dogs harness and become reliable in not letting go, although an adult still holds an additional leash. Dogs are then trained to stop or block a child's movements (Pavlidis, 2008).

Autistic children do not only try to elope in public environments but also from home as well. In this case the assistance dog can be used to alert parents or caretakers of the attempted escape. The dog is also trained to alert in case of dangerous behaviours like climbing window ledges and it also has the ability to sense an oncoming seizure (Pavlidis, 2008).

The assistance dog's function is to facilitate sensory integration and calming: without exception, parents of autistic children interviewed commented on how calm and more manageable their children are whilst the dog is present. They also reported positive changes in sleeping behaviours (Pavlidis, 2008).

Finally one of most fundamental uses of an assistance dog is the social support provided for this type of disability (Pavrides, 2008).

Assistance dogs can provide a level of comfort in social situations and create a social conduit for interacting with other people.

Freedom and well-being for families with autistic children

Autism disorder is the most extreme form of pervasive developmental disorder that share core impairments in socialization and communication. Families who have an autistic child experience a myriad of difficulties including, extra financial requirements, and an increased burden of care, lost opportunities, neglected siblings, social isolation and confusing healthcare systems (Burrows, Adams & Spiers, 2008).

Autism presents challenges for the parents and threatens the cohesion of the family unit because the stress due to the unpredictable behaviour displayed in autism such as impulsivity, irritability, unpredictability and volatility.

These characteristics of autism prevent families from travelling and make every day activities such as grocery shopping extremely stressful. Finding coping strategies to deal with behavioural challenges might alleviate some problems for parents and in general for all the family, as well as providing companionship for parents who are at risk of social isolation (Burrows, Adams & Spiers, 2008).

The introduction of an assistance dog provides safety and helps to manage difficult and impulsive behaviours in the child. The assistance dog encourages development of social opportunities and skills for autistic children, is beneficial in calming sensory inputs and increases their ability to function in public. For many families, acquiring an assistance dog has increased their quality of life substantially (Burrows, Adams & Spiers, 2008).

Burrows (2005) wrote that the benefits of the assistance dog were almost more important for the mental health of the parents than they were for the child with autism. Having an assistance dog is not a panacea for the challenges of living with autism. As talented as these dogs are, an assistance dog is not a babysitter for the child. Assistance dogs after undergoing a stressful work day need time for relaxation, play and exercise and veterinary care may be needed (Pavlides, 2008).

Literature and research demonstrate the mutual benefits experienced not only by children who have autism but also for their families. The assistance dog improves the overall wellbeing of the entire family, improving freedom for all concerned.

Hypothesis and Aim

The current study investigates the psycho-social benefits provided by owning an assistance dog for autistic children. It also investigates and their families currently in Ireland and the parental stress experienced regarding their child who often become isolated.

It is envisaged that the overall results of this study will contribute to the literature giving useful information which may improve the use of assistance dogs and the development of pet therapy in Ireland. For this research project the following hypothesis will be taken in consideration:

1. There will be a negative correlation between the length of time in which an assistance dog is present in the family and the parental rating of the child psycho-social conditions.
2. There will be a negative correlation between the length of time in which an assistance dog is present in the family and the parental stress.
3. To explore the potential opinions that a parent has in relation to the presence of an assistance dog in their child's life and the family as a whole.

Method

Materials

The material used in this research consisted in a pen and in a questionnaire printed on A4 paper. In particular, three questionnaires were used to collect the data.

The first questionnaire was the Autism Treatment Evolution Checklist (ATEC) (http://www.autism.com/index.php/ind_atec).

One of the major obstacles in autism has been the lack of a valid method to measure the effectiveness of various treatments. Over the past years a number of researchers attended to evaluate different biomedical and psycho-educational interventions that benefits autistic children, but all those researches have been inconclusive.

The Autism Treatment Evaluation Checklist (ATEC) was designed by Bernard Rimland and Stephen M. Edelson from the Autism Research Institute.

ATEC use diagnostic instruments to measure changes in response to treatment.

The questionnaire was designed to be completed by parents, teachers, or caretakers and consists of 4 subtests: speech/language communication (14 items); sociability (20 items); sensory/ cognitive awareness (18 items) and health/physical/behavior (25 items).

The ATEC is not a diagnostic checklist; basically it provides several subscale scores as well as a total score to be used for comparison.

For example if a person scores a '20' on one day, and then a '15' two weeks later, then the individual showed improvement, in contrast, if the score was '30,' then the individual's behavior worsened. The ATEC have been used by parents and teachers to monitor how well the child is doing over time and researchers have used the ATEC to evaluate the improvement following an

intervention by comparing the baseline ATEC scores with the post-treatment ATEC scores.

The second questionnaire used in this project is the APSI (www.midss.org) designed by Silva, L. M. T., & Schalock, M. (2012) which measure of parenting stress specific to core and co-morbid symptoms of autism.

Stress among parents with autism children has been found to be particularly high. Core symptoms, co-morbid behavioral and physical problems, have been found to affect parents' stress levels. The APSI was designed to identify areas where parents need support with parenting skills, and to assess the effect of intervention on parenting stress.

The APSI was developed by taking on consideration a large number of interviews with parents of autistic children. The questionnaire contains items that fall into three categories: the core social disability, difficult-to-manage behavior, and physical issues. Items are rated as being 'Not stressful', 'Sometimes creates stress', 'Often creates stress', 'Very stressful on a daily basis' and 'So stressful that sometimes we feel we cannot cope.' The APSI indicates gives an indication on how much stress parents are experiencing and what factors are causing this stress.

The scale score for the APSI questionnaire demonstrates acceptable internal consistency and test-retest stability for parents with autistic children and other developmental disorder.

The third and final questionnaire for this research project consists in a number of questions designed by the researcher to evaluate the impact that an assistance dog has on the autistic children and their family. The purpose of this last questionnaire, is to get an overview related to the opinion that a parent has in relation to the assistance dog's presence in the family and the benefits gained by the whole family from the

adoption of the dog; a parent's evaluation is related to the progress that a child has made according to a behavioural and communicational point of view considering the length of time of that dog's presence. Another opinion is related to the effectiveness of the assistance therapy and recommendation of taking an assistance dog. Other people opinions will be considered: parents will be asked if anyone (for example a teacher) has noticed improvement in the child behaviour since the dog has been present in the family.

Participants

A snowball sampling, which is a type of non probability sampling technique, has been used for this project. (Howitt and Cramer, 2009)

Therefore a purposive sample of a specific type of people has been recruited, because they have the characteristics of interest for the theoretical concerns of the researcher. (Howitt and Cramer, 2009)

In particular, 41 families living in Ireland, who own an assistance dog for their autistic children have been taken in consideration. Families are from Cork, Galway and Dublin and they all have had a certified assistance dog from 3 to 6 years.

Design

Correlational research design will be used for this project. This type of design does not involve the deliberate manipulation of variables and helps to determine the direction and the strength of the association between two or more variables (Howitt and Cramer, 2009).

The main predictable variable (PV) used is the number of years that the assistance dog is present in the family with autistic child. The criterion variables (CV) used for the

first hypothesis will be the child psycho-social issues

(Speech/language/Communication, sociability, Sensory/ Cognitive Awareness and Health/Physical/Behavior) reported by the parents.

The criterion variable (CV) used for the second hypothesis will be Autism Parenting Stress Level.

An exploratory hypothesis will be considered in the project. Parent's opinions will be asked in the last part of the questionnaire; the data collected will be correlated and quantified by the researcher.

Procedure

The research will be conducted through the use of questionnaires to collect quantitative data in order to measure and statistically analyze what has been hypothesized in this research project.

The researcher obtained the permission from the Dublin Business School to hand out the questionnaires. The time necessary to fill out the questionnaires was calculated approximately at 40 minutes. Participants were allowed time to read the protocol form and to consider the implications. An information sheet was attached to the questionnaire to inform the participant about the purpose of the study and to ensure confidentiality of the data collected which were not be submitted for publication.

One of the parents (mother or father) of the autistic child was asked to fill out the questionnaire.

The contact address and phone number of the researcher was provided on the information sheet in order to address any further possible questions or concerns of the parents after the filling of the questionnaires. The data collection started at the end of

December 2013 and finished in January of 2014. Data were stored in a computer protected by a password.

Participation in this research was anonymous and it was not possible to contact the participants to take part in a follow-up to the study.

Results

The statistical software called SPSS Version 21 was used to analyse the collected data, Microsoft Office Excel 2003 and Microsoft Word 2003 were used for building graphs and tables

***Sample of Families Owning an Assistance Dog for autistic child support in Ireland**

Number of Families	Number of years owning an Assistance dog
8 Families	8 years
13 Families	7 years
9 Families	6 years
8 Families	5 years
2 Families	4 years
1 Families	3 years
Number of Families	Child level of Autism
9 Families	Severe
13 Families	Moderate
19 Families	Mild

*Sample based on 41 Irish Families Owning an Assistance dog

Hypothesis 1

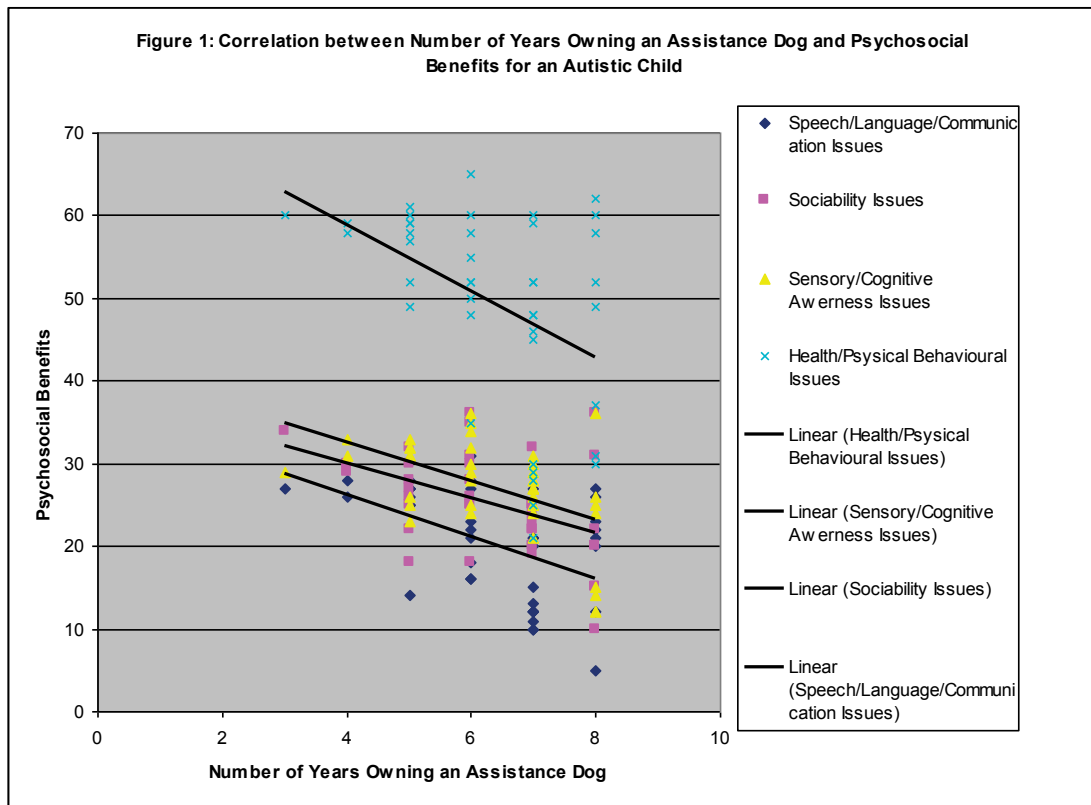
A Pearson Correlation Test was conducted on the data collected to analyze the relationship between Numbers of Years Owning an Assistance Dog (PV) and the following variables: Speech/language/Communication Issues (CV), Sociability Issues (CV), Sensory/ Cognitive Awareness Issues (CV) and Health/Physical/Behavior Issues (CV).

The mean score for the Number of Years Owning an Assistance Dog was 6.34 (SD = 1.277) and for Speech/Language/Communication Issues was 20.34 (SD = 6.729). A Pearson correlation found that there was a moderate negative significant relationship between the Number of Years Owning an Assistance Dog and Speech/Language/Communication Issues ($r(39) = -.479, p = .001$). This was one tailed test. Therefore the null hypothesis is rejected.

The mean score for the Number of Years Owning an Assistance Dog was 6.34 (SD = 1.277) and for Sociability Issues was 25.07 (SD = 5.951). A Pearson correlation found that there was a moderate negative significant relationship between the Number of Years Owning an Assistance Dog and Sociability Issue ($r(39) = -.451, p = .002$). This was one tailed test. Therefore the null hypothesis is rejected.

The mean score for the Number of Years Owning an Assistance Dog was 6.34 (SD = 1.277) and for Sensory/ Cognitive Awareness Issues was 27.10 (SD = 5.881). A Pearson correlation found that there was a strong negative significant relationship between the Number of Years Owning an Assistance Dog and Sensory/ Cognitive Awareness Issues ($r(39) = -.504, p < .01$). This was one tailed test. Therefore the null hypothesis is rejected.

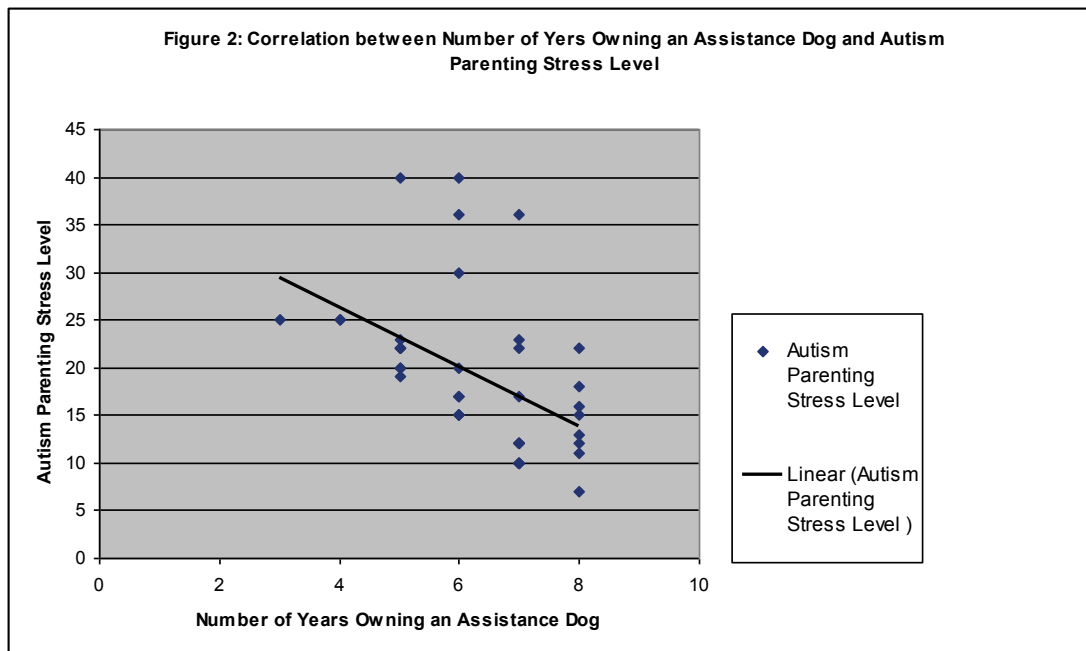
The mean score for the Number of Years Owning an Assistance Dog was 6.34 (SD = 1.277) and for Health/Physical/Behavior Issues was 49.49 (SD = 11.894). A Pearson correlation found that there was a moderate negative significant relationship between the Number of Years Owning an Assistance Dog and Health/Physical/Behavior Issues ($r(39) = -.429, p = .003$). This was one tailed test. Therefore the null hypothesis is rejected.



Hypothesis 2

A Pearson Correlation Test was conducted on the data collected to analyze the relationship between Numbers of Years Owning an Assistance Dog (PV) and the Autism Parenting Stress Level (CV).

The mean score for the Number of Years Owning an Assistance Dog was 6.34 (SD = 1.277) and for Autism Parenting Stress Level was 18.98 (SD = 8.920). A Pearson correlation found that there was a moderate negative significant relationship between the Number of Years Owning an Assistance Dog and Autism Parenting Stress Level ($r(39) = -.483, p = .001$). This was one tailed test. Therefore the null hypothesis is rejected.



Exploratory Analysis

An exploratory analysis for the last questionnaire, designed by the researcher, and based on the opinions of 41 parents found the following results:

- Question n.3 had the purpose to get opinions related to the role of the assistance dog in relation to the child: (1) potential stressful situations, (2) negative behavior, (3) self-injurious situations, (4) language skills and (5) social interaction. 73% of parents answered positively to all five questions, 15% of parents answered positively to four questions, and 12 % of parents answered positively to three questions. These results show that the majority of parents have a positive opinion about the benefits of the presence of an assistance dog
- Question n.4 had the purpose to get a family overview related to the role of the assistance dog :(1) family’s members increased contact, (2) improvement of family activities like going out, (3) improvement of social interaction and (4) general quality of life. 85% of parents answered positively to all four

questions and 15% of parents answered positively to three questions. The large majority of parents answered positively to all four questions highlighting one more time the positive benefits of the presence of an assistance dog.

- Question n.5 had the purpose to ask parents opinions related to: (1) development of child /dog interaction, (2) development of physical affection between the autistic child and the dog, and (3) to see if the child was involved in the caring of the dog. 23% of parents answered positively to all three questions, 73 % of parents answered positively to two questions, 2% of parents answered positively to one question and 2% of parents answered negatively to all questions .An interesting data that must be noted is that 34 parents out of 41 answered no when asked if the autistic child was involved in the care of the dog and only 7 parents out of 41 answered positively to the question.
- Finally, parents were asked, in question n.8 and n.9, related to: (1) the effectiveness of the Animal Assistance Therapy and (2) they would recommend other families to take an assistance dog for their autistic child. 41 out of 41 parents answered positively to both questions.

Discussion

The aim of this study was to investigate the psychosocial benefits of owning an assistance dog for autistic children and their families currently in Ireland. The difficulties such as stress and isolation experienced by families of autistic children were also investigated. The first hypothesis of this project predicted a negative correlation between the length of time in which an assistance dog is present in the family and the parental rating of the child's psycho-social conditions.

In other words, it was hypothesized: the longer the dog was present in the life of an autistic child the less psycho-social issues were observed. This was found in current study. (See Figure 1)

The Pearson's correlation test found a moderate negative significant relationship between the Number of Years in Owning an Assistance Dog and Speech/Language/Communication Issues; Sociability Issues; Sensory/ Cognitive and Health/Physical/Behavior Issues.

Those results confirm that the presence of an assistance dog, in the life of an autistic child and the nature of the relationship established, represents a significant variable relating to the improvement of the child's psychosocial conditions; results are also supported by the review of the literature mentioned earlier in this project.

Autism is a brain disorder which results in social impairments and problems with communication and relationships. This can affect the development, learning processes' and all aspects of the child's life (Avril, 2000).

For children with autism, assistance dogs are not only furry friends, but they have therapeutic benefits which promote the healthy functioning of the autistic individual, and therefore improve the overall functioning of the family.

Those dogs are not only a source of unconditional love; they also promote responsibility in children. Autistic children may gain confidence as a result of working with an assistance dog (Burrows & Adams, 2003).

Assistance dogs provide a sense of comfort which can result in a positive difference in behaviour. They have a "calming power". A situation that may otherwise be overwhelming and stressful to the child may now seem more manageable as they respond to cues from their assistance dog. For example, a loud room may be distressing for an autistic child, but with an assistance dog, the child can see that the dog remains calm and may reflect that energy. (Pavlidis, 2008)

Service dogs can help those with autism to develop more independence. They are trained to help keep their handler focused. This can make daily activities less stressful and easier to complete (Pavlidis, 2008).

They provide safety. They can alert their handlers to important and urgent sounds and cues in the environment, such as a fire alarm. While the child may know what the sound means, it may startle them, cause stress, and result in poor response time. A service dog can direct attention and steer the child to a safer place. They are also trained to interrupt harmful behaviours and breakdowns. Over time, this could result in fewer instances of those behaviours (Pavlidis, 2008).

Assistance dogs are often an "ice breaker". The presence of a dog may initiate conversation and physical proximity which the child may not have been used to. The child may be more likely to speak when the conversation is focused on the dog. This also gives children an opportunity to witness normal social behaviour.

Receiving affection from the animal may encourage the child to show affection towards the animal, which could promote positive physical social behaviours with other people (Pavlidis, 2008).

The second hypothesis of this project investigated a negative correlation between the length of time in which an assistance dog is present in the family and parental stress. In other words, it was hypothesized: the longer dog is present in the life of an autistic child the less worry and stress are experienced by the family and particularly by the parent in relation to their child. (Figure 2)

Pearson's correlation test found a moderate negative significant relationship between the Number of Years of Owning an Assistance Dog and Autism Parenting Stress Level. These results confirm that the presence of an assistance dog, in a family with an autistic child, represented a significant variable in the improvement of stressful situations experienced by parents and by the overall family. Results also supported the review of the literature previously mentioned in this project.

From the time that the child is diagnosed with an autistic disability the parents are very often thrust into a fury of emotions. Several studies report that for parents of children with autism, life proves more difficult and frustrating than for those parents of children with a long-term illness or developmental disability (Burrows, Adams & Spiers, 2008).

Parents may experience increases in stress depression, anxiety, financial difficulties, relationship problems as well as a decrease in self competence and self confidence due to unpredictable behaviour displayed in their autistic child.

Previous literature, mentioned in this project, showed that companion animals provided a sense of comfort and relief from stress for humans of all ages and cultures. There is a calming effect from the sensation of stroking their soft fur, looking into those big beautiful eyes, and knowing that they never judge or question anything about you.

Autism Assistance Dogs are very special providing a unique approach to dealing with the obstacles that families need to overcome on a daily basis. Autism assistance dogs help provide comfort and support for the entire family as well as the autistic child or other children of the household (Burrows, Adams & Spiers, 2008).

There is a certain comfort in knowing and understanding that there is a “resident” resource on duty at all times. Parents endure a great deal of stress in their efforts to communicate and soothe their child twenty-four hours a day, seven days a week. Living with a child that is difficult to comfort or understand can be a huge hardship and parents are to be commended and respected for their dedication (Burrows, Adams & Spiers, 2008).

Parents and siblings also need an outlet and relief from the stresses of living with an autistic child. Autism Assistance Dogs help provide this outlet by offering a soft ear or furry belly to rub, not to mention serving as a partner for a jog or stroll through the park. Better yet, you can load them in the car and take them with you on vacation. The entire family can benefit from these dogs (Burrows, Adams & Spiers, 2008).

An exploratory analysis was considered in this project based on opinions that a parent has in relation to the presence of an assistance dog in their child life and on the family as a whole. The 41 parents, who answered the questionnaires, expressed positive opinions in relation to the presence of the assistance dog in the life of their autistic child and within the overall family. Positive feedback was given in relation to: the comfort provided by the dog in stressful situations; the impact that the dog has on negative behaviors, self-injurious situations, social interactions and social skills. Improvements in language skills and communication were also noticed by parents. Positive feedback was also registered in relation to: improvement of the families’ activities, social relations with other people and general improvement of the family’s

quality of life due to the presence of the assistance dog. Parents also noticed the interaction of their own child and the dog and reported that their child had become more physically affectionate towards their dog.

Interesting data to report is that most of the parents declared that their child was not involved in the care of the dog. The researcher believes that most of the parents answering negatively to this question as they assumed that this question concerned involving the child in health issues regarding the dog, for example veterinary visits that the dog may need rather than feeding and leisure activities.

All the parents provided positive feedback in relation to the effectiveness of the AAT and they would recommend other families to take an assistance dog for their autistic child.

Every parent with an autistic child has endeavoured to help their son/daughter to develop the skills to support themselves. They love to see their child interacting with other people and engaging in relationships with friends and the community.

The bond that the assistance dog creates with all the family but in particular with the autistic child is truly amazing; it is an extremely complex relationship that involves physical assistance, companionship and entertainment (Pavlidis, 2008).

For many of the parents, seeing the bond forming between their child and the dog is fundamental to accepting the dog into their household and normalizing their day-to-day lives.

The companionship between the dog and the parents allowed them to find personal time and space.

The service dog is a source of pride for other children in the family. The service dog gave siblings in the family an opportunity to talk about their brother or sister without having to talk about autism (Burrows, Adams & Spiers, 2008).

The presence of the assistance dog, especially in public enables all the family to feel prouder and less embarrassed receiving much more positive attention than they had before the dog was placed with them (Pavlidis, 2008).

Conclusion

The purpose of this study was to investigate how assistance dogs trained to assist children with autism can provide numerous benefits for the child as well as the family that has integrated the dog into their home. The study found positive results showing benefits for the autistic child and their families. This is also supported by reviews of the literature produced over the past decades.

A major strength of this study is the sample size which has been considered very satisfactory considering that there is a small number of assistance dogs trained and placed in families with autistic children in Ireland.

However the researcher thinks that the study could be more valuable if a qualitative analysis was introduced by interviewing family members and professionals such as, teachers who work with the child and who have the opportunity to observe behavioural changes.

Finally, it is evident that the central role of the assistance dog in the home and in the community improved the quality of life for the children with autism and their families.

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Appendix A

My name is Erika Magno and I am conducting research in the Department of Psychology that explores psycho-social benefits of owning an assistant dog for Irish autistic children and their family. This research is being conducted as part of my studies and will be submitted for examination.

You are invited to take part in this study and participation involves completing and returning the attached anonymous survey. While the survey asks some questions that might cause some minor negative feelings, it has been used widely in research. If any of the questions do raise difficult feelings for you, contact information for support services are included on the final page.

Participation is completely voluntary and so you are not obliged to take part. Participation is anonymous and confidential. Thus responses can not be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been collected.

The questionnaires will be securely stored and data from the questionnaires will be transferred from the paper record to electronic format and stored on a password protected computer.

It is important that you understand that by completing and submitting the questionnaire that you are consenting to participate in the study.

Should you require any further information about the research, please contact Erika Magno,

My supervisor can be contacted at [insert details].

Thank you for taking the time to complete this survey.

Appendix B

Autism Parenting Stress Index

Please rate the following aspects of your child's <u>health according to how much</u> stress it causes you and/or your family by placing an X in the box that	Stress Ratings				
	Not Stressful	Sometimes Create Stress	Often Create Stress	Very Stressful On daily Basis	So stressful Sometimes We Feel We cant Cope
Your child's social development	0	1	2	3	5
Your child's ability to communicate	0	1	2	3	5
Tantrums/meltdowns	0	1	2	3	5
Aggressive behavior (siblings, peers)	0	1	2	3	5
Self-injurious behavior	0	1	2	3	5
Difficulty making transitions from one activity to another	0	1	2	3	5
Sleep problems	0	1	2	3	5
Your child's diet	0	1	2	3	5
Bowel problems (diarrhea, constipation)	0	1	2	3	5
Potty training	0	1	2	3	5
Not feeling close to your child	0	1	2	3	5
Concern for the future of your child being accepted by others	0	1	2	3	5
Concern for the future of your child living independently	0	1	2	3	5
	<i>Subtotal</i>				
Total					

Name of Child (Last, First)

Sex

- Male
 Female

Age

Date of Birth (format: MM/DD/YYYY, Example: 09/25/98)

Form completed by and relationship

ATEC [User](#) 

- Mother/Father
 Professional
 Investigator
 Practitioner
 Other
-

Please indicate how true each phrase is:

I. Speech/Language/Communication: Not [true](#)^g; Somewhat true; Very True

	Not true	Somewhat true	Very true
1. Knows own name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Responds to 'No' or 'Stop'	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Can follow some commands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Can use one word at a time ^g (No!, Eat, Water, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Can use 2 words at a time (Don't want, Go home)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Can use 3 words at a time (Want more milk)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Knows 10 or more words	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Can use sentences with 4 or more words	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Explains what he/she wants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Asks meaningful questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Speech tends to be meaningful/relevant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Often uses several successive sentences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Carries on fairly good conversation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Has normal ability to communicate for his/her age	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Please indicate how true each phrase is:

II. Sociability: Not descriptive; Somewhat descriptive; Very descriptive

	Not descriptive	Somewhat descriptive	Very descriptive
1. Seems to be in a shell – you cannot reach him/her	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Ignores other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Pays little or no attention when addressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Uncooperative and resistant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. No eye contact 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Prefers to be left alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Shows no affection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Fails to greet parents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Avoids contact  with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Does not imitate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Dislikes being held/cuddled	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Does not share or show 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Does not wave 'bye bye'	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Disagreeable/not compliant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Temper tantrums	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Lacks friends/companions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Rarely smiles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Insensitive to other's feelings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Indifferent to being liked 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Indifferent if parent  (s) leave	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate how true each phrase is:

III. Sensory/Cognitive Awareness: Not descriptive; Somewhat descriptive; Very descriptive

	Not descriptive	Somewhat descriptive	Very descriptive
1. Responds to own name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Responds to praise 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Looks at people and animals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Looks at pictures  (and T.V.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Does drawing, coloring, art	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Plays with toys appropriately	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Appropriate facial expression	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Understands stories on T.V.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Understands explanations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Aware  of environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Aware of danger	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Shows imagination	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Initiates activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Dresses self	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Curious, interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Venturesome - explores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. "Tuned in" — Not spacey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Looks where others are looking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate how true each phrase is:

III. Sensory/Cognitive Awareness: Not descriptive; Somewhat descriptive; Very descriptive

	Not descriptive	Somewhat descriptive	Very descriptive
1. Responds to own name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Responds to praise 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Looks at people and animals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Looks at pictures  (and T.V.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Does drawing, coloring, art	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Plays with toys appropriately	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Appropriate facial expression	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Understands stories on T.V.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Understands explanations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Aware  of environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Aware of danger	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Shows imagination	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Initiates activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Dresses self	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Curious, interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Venturesome - explores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. "Tuned in" — Not spacey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Looks where others are looking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate how true each phrase is:

IV. Health/Physical/Behavior: Not a Problem; Minor Problem; Moderate Problem; Serious Problem

	Not a problem	Minor problem	Moderate problem	Serious problem
1. Bed-wetting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Wets pants/diapers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Soils pants/diapers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Diarrhea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Constipation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Sleep problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Eats too much/too little	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Extremely limited dict	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Hyperactive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Tachycardic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Hits or injures self	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Hits or injures others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Destructive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Sound-sensitive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Anxious/fearful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Unhappy/crying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Seizures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Obsessive speech	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Rigid routines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Shouts or screams	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Demands sameness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Often agitated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Not sensitive to pain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. "Hooked" or fixated on certain objects /topics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Repetitive movements (stimming, rocking, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1. What level of autism is your child affected by?

Severe Moderate Mild

2. How long have you had an Assistance Dog?

Number of years...

3. In relation to your child, do you feel that the presence of the Assistance Dog:

- Provides comfort to your child in potentially stressful situations? Yes No
- Has an impact on some possible negative behavior? Yes No
- Prevents possible self-injuries situations? Yes No
- Has improved your child's vocabulary and language skills? Yes No
- Has improved the social interaction and social skills of your child? Yes No

4. In relation to your family do you feel that the presence of the Assistance Dog:

- Has improved family activities like going out in public spaces? Yes No
- Increased the contact with other people for your family? Yes No
- Has improved the social interaction within your family? Yes No
- Has improved the quality of your family life? Yes No

5. In relation to the child's relationship with the dog:

- Has your child become physically affectionate towards the dog? Yes No
- Is your child involved in the caring for the dog? Yes No
- Do you notice interaction between your child and the Assistance Dog? Yes No

6. Has anyone else noticed an improvement in your child's communication and ability (example teacher)? Yes No

7. Do you find that it is expensive and challenging maintaining an Assistance Dog? Yes No

