

## **EFFECTIVENESS OF ANIMAL ASSISTED THERAPY** **ON CHILDREN AND ADOLESCENTS WITH** **AUTISM**

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### **Abstract**

Autism, a pervasive developmental disorder encompasses a wide range of social, communication, sensory and cognitive deficits that are challenging to treat. Due to the lack of established standardized forms of treatment, adjunct forms of therapy are the primary methods of management. One such therapeutic process is Animal Assisted Therapy, which has recently witnessed the growing interest and accumulation of studies to assess its efficiency. The current study focuses on 'The effectiveness of Animal Assisted Therapy on Children and Adolescents with Autism'. As an intervention technique, a qualitative approach was applied to establish the subjective experiences and changes gained by six participants in the study. A triangulation method was employed to collect data from the primary caregiver, animal assisted therapist and the school special educator, through a semi-structured interview and review of medical reports. Thematic analysis was applied to analyze the data. The results indicate an improvement in the area of social and communication skills, among all the children and adolescents. Other benefits such as being calm and relaxed were observed during the therapy sessions. Hence, it can be suggested that future studies focus on individual skill enhancement and flexibility in the number of sessions conducted.

**Keywords: animal assisted therapy, autism, children and adolescents**

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## Introduction

*A dog has no use for fancy cars, big homes or designer clothes. A water-logged stick would do just fine. A dog doesn't care if you are rich or poor, clever or dull, smart or dumb. Give him your heart and he'll give you his.*

*-John Grogan*

The warmth and tenderness of a baby brings joy and happiness to every home. Bound by nurturance, the child is raised with compassion and emotional attachments. The child may grow to become a fully functioning individual, with the vested energy and time provided by their family members. Over a growing period of time, some families may observe that their child shows delayed signs of development, with lack of reciprocal affection, emotional attachment and cognitive difficulties. They find their child to be more comfortable within their own created space, arranging objects in rows repeatedly, socially in-apt and highly sensitive to their environment, only to find that their normal looking child has been diagnosed with Autism Spectrum Disorder. Even more commonly observed, children battle over social, speech, cognitive and behavioural difficulties, which only leave the primary care givers more bogged than ever before. This paper introduces animal assisted therapy as an adjunct form of therapeutic method to enhance the overall development in children and adolescents with autism.

A dog is a man's best friend. It is known that humans and dogs have shared a close relationship for over a million years. The benefits of human-animal interaction was witnessed during ancient times, where hippo-therapy was commonly applied to rehabilitate injured soldiers (Urichuk & Anderson, 2003). Scripts and excavation of expensive jewellery also indicate that Egyptians were of the belief that cats were immortal and were hence pampered and worshiped (Dale & Green, 1963). With this, in the middle ages humans began to consider animals as rational beings and were used in ritualistic patterns such as witch craft, making them accountable for their actions (Hyde, 1956).

The focus in recent research has shifted from the conventional use of animals for domestication purpose to clinical applications to improve human well-being. Animal Assisted Therapy is a relatively emerging field of study, which uses animals in the form of treatment facilitation. The delta society defines Animal –Assisted Therapy as “a goal directed intervention and treatment

process in which an animal that meets specific criteria assists in the therapeutic process". AAT is delivered by a health/human service professional with specialized expertise, and practice in the field of animal assisted interventions. AAT is designed to promote the improvement in human physical, social, emotional, and /or cognitive functioning (Delta society, 1990).

Animal Assisted Activities (AAA) aims at enhancing the quality of human life and provides opportunity for motivational, educational, recreational and therapeutic benefits. AAA are directed by trained professionals, volunteers or paraprofessionals who work in close association with animals who meet specific criteria for therapeutic assistance. The therapeutic process is generally unstructured, without a specific treatment goal or formally maintained detailed notes. The Delta society is the licensing body for animal interventions (Delta Society, 1990).

The most common animal used for therapy is the dog or a canine, however research has documented the use of rabbits, horses, cats, dolphins, birds, fishes and even donkeys. The catalyst in canine assisted therapy is the dynamics between the dog and the client. Canine therapy has been used to help individuals in various domains and the results of the process has been implied in both individual and group therapy. Feline assisted therapy, involves integration of a cat in the therapeutic process. Due to easy maintenance, cats are often found in old age homes, nursing homes and orphanages, as they possess the ability to create a positive environment. This form of therapy has been most helpful in long term care institutions as the cat becomes an integral part of their family (Jackson, 2012).

The third most common, animal assisted intervention is Equine assisted therapy, it involves taking care of horses through grooming them, riding along and giving them food to eat in their place of comfort and convenience. Dolphin assisted therapy has its roots in the 1970's and the popularity is spreading ever since. In this form of therapy it has proved to be useful for disability and any form of psychopathology in both children and adults (Jackson, 2012)

### **Autism Spectrum Disorders**

Autism is a neurodevelopment disorder in the category of pervasive developmental disorders,

and is characterized by severe and pervasive impairment in reciprocal socialization, qualitative impairment in communication, and repetitive or unusual behavior. The Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV) and the International Classification of Diseases, 10th edition (ICD-10), include Autistic disorder, Asperger's syndrome, Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS), Rett's syndrome, and childhood disintegrative disorder as pervasive developmental disorders (Levy, Mandell & Schultz, 2009).

It is estimated that Autism Spectrum disorder (ASD) affects one child in every 150 births; other researches on a similar note estimate 6% chances in every 10,000 births. A rising diagnosis of 10-17% each year depicts that it is the fastest growing developmental disability. Scholars and researchers are unable to testify a single known cause of ASD. Studies report that one of the causal factors can be attributed to biological & neurological disorders that have an impact on the functionality of the brain.

Several large scale researches were conducted to understand the etiology and pathogenesis of autism and research findings support that biological and genetic vulnerability possess a potential reason for the occurrence of autistic disorder. Ravindran (2012) in his paper also suggests that the leading cause for ASD is genetic. The presence of grand mal seizures and mental retardation provides clear evidence of the biological basis (Sadock & Sadock, 2003).

The association of Fragile X syndrome and tuberous sclerosis to autistic disorder has proven to be 1% and 2% respectively. Studies also indicate involvement of chromosome 6 & 7, along with chromosome 16 & 17 to be a causal factor attributing to the development of autism.

Other factors such as immunological factors like damage to the extraembryonic tissue during gestation or immunological incompatibility from maternal antibodies that are directed to the foetus also contribute to the development of autism. Perinatal factors like maternal bleeding during first trimester and meconium in amniotic fluid are causal factors. Research also indicates neurogenesis and decrease in neuronal death results in brain enlargement which is mostly noticed in autistic disorder, other biochemical factors such as increased homovallinic acid in cerebrospinal fluid results in pathogenesis of autism (Sadock & Sadock, 2003).

The risk of being affected by autism has also been attributed to vaccines. Bruner & Seung

in 2009 proposed that 1% of cases of autism were caused by vaccines, proving a possible link between the two. Therefore, they suggest precautionary measures be taken from childhood in early detection of autism and bring about awareness regarding the possible contraction through vaccines. Amidst the autistic child, the problem also arises for parents; it is often stressful and difficult to manage a child diagnosed with ASD. It is noticed that parents adapt to various coping strategies to overcome the general lack of social support, demanding financial necessities, marital conflict arising due to role identification and shared responsibilities, with an adding factor of comparisons drawn with siblings (Kowalkowski, 2012).

### **Problem Statement**

The study is undertaken to assess the effectiveness of animal assisted therapy as an adjunct method for children and adolescents with autism.

### **Research question**

Does inclusion of Animal Assisted Therapy effect communication, social and motor skills in a child and adolescent with Autism?

### **Objectives**

1. To assess the effectiveness of assisted animal therapy on the overall level of functioning on children and adolescents diagnosed with autism.
2. To assess the effectiveness of assisted animal therapy in the area of communication skills on children and adolescents diagnosed with autism.
3. To assess the effectiveness of assisted animal therapy in the area of social skills on children and adolescents diagnosed with autism.
4. To assess the effectiveness of assisted animal therapy in the area of motor skills on children and adolescents diagnosed with autism.

### **Method**

Qualitative paradigm aims at exploring phenomena, understanding in-depth issues and inner motives and opinions. With a social constructivist approach, it is explorative and Socratic in nature, with focus on the 'why' of any given area of study. This research design provides a platform to

account for individual experiences and outcomes. Data is however, analyzed from unstructured interview transcripts, observation notes and open ended survey method.

This study provides an in-depth analysis on the effect of Animal Assisted Therapy on children and adolescents with autism and thus lies in the frame of qualitative research and perspectives. Hence, provides an exhaustive view on the impact of the therapy on the motor, social, cognitive and behavioral skills of children and adolescents with autism.

### **Sample size and description**

The sample of the present study involves children and adolescents diagnosed with Autism Spectrum Disorder. This population shows marked impairment in the areas of communication, reciprocal interaction, repetitive and stereotyped behaviors and decreased interest in activities.

The sample also includes parents and school special educators who are significant caretakers involved in the growth and development of the child.

**Sample size.** 6 cases of children and adolescents diagnosed with Autism Spectrum Disorder were chosen to be a part of the study.

**Sampling technique.** Purposive sampling technique, under non-probability sampling method will be used in the study. Purposive sampling is one, which is based on typicality of cases to be included in the sample (Singh, 2008).

### **Research design and data analysis**

A qualitative approach was used to gather data from primary care giver, special educator, and participant of the study using data collection tools like observation and semi-structured interview. Questions were framed for the interview keeping specific and overall objectives in perspective.

The case study type of research design provides in-depth synthesis of experience of the individuals under study. This design provides the potential to achieve high conceptual validity for fostering new hypotheses and the role of causal factors in the context of individual cases.

Data was analysed through iterative or spiralling process that proceeds from general to specific observation. The data is based on analytical induction, as the focus is on examining each case and the relationship amongst each individual characteristics. A semi-structured interview process was carried out and data was transcribed and derived into recurring themes, categories and patterns. Pattern matching and categorizing data was then essential. The data was then coded and reviewed with predominant focus on themes, which enabled objectifying the results obtained, resulting in defining the relationship between/among concepts derived.

### **Method of data collection**

Data was gathered from primary caregivers, school special educators and researcher's non-participant observation of the child using data collection techniques such as direct observation and semi-structured interview. The questions for semi-structured interview were framed and validated by two clinical psychologists, the head of the special education school and the animal assisted therapist.

Informed consent, socio-demographic details and the Autism Treatment Evaluation Checklist (ATEC) were administered and information was received from the primary caregivers and special education institute prior to the administration of animal assisted therapy. Further data on the effect of the intervention technique was obtained through semi-structured interview for a duration of 15 minutes. The data was recorded and transcribed.

Expert review was also obtained from special educators and animal assisted therapists regarding the progress of subjects and non-participant observation on part of the research to further validate the process of therapeutic intervention.

### **Therapy process.**

The children and adolescents in the study group received Animal Assisted Therapy once in every 10 days for a period of 3 months. In the initial weeks, the interaction between the children and the therapy dog was minimal as the aim was to make the children familiar with the presence of the dog. As a goal directed therapy, the later sessions were more structured and planned in accordance to need

and skill based activities.

Prior to the initiation of therapy, the AAT practitioner evaluated the severity of symptoms of each client to have an in-depth understanding of the target behaviors and challenging areas of skill enhancement for each child. The children are then initially exposed to the presence of the dog and made comfortable, to evade any phobias or fears.

Individual interactions with the therapy dog are then initiated and goals are set for each child. For example, a child with sensory and motor difficulties is made to brush and gently pat the dog. It is believed that the child acquires and generalizes skills through demonstration with the therapy dog. Once, the skill is acquired the therapy goal for each child is reviewed and a new goal is set. During the therapy process, each child would be allocated a given period of time to pet the dog (social skills), brush the dog (motor skills), speak about themselves to the dog and also sing, read, narrate stories and poems (communication and social skills) for the dog based on their individual capacities. As a group, the children would together sing for the dog, mention the body parts (sociability, sensory and cognitive skills) they would also write and draw for the dog (cognitive and motor skills).

The therapeutic challenges and improvements were further discussed with the school special educator and parents were also de-briefed.

### **Ethical considerations**

The participants were provided with the informed consent form outlining the purpose and nature of the study and were provided with the insight that they could withdraw from the study as per their wish. Any kind of physical/psychological harm to the participant and therapy dog was avoided. Confidentiality of identity and results was assured and mentioned that the data will strictly be used for research purpose.

Incentives of any form were not provided to the participants, which was mentioned prior to the beginning of the research. Parents were kept informed about the activities the child was involved in the presence of the dog. The therapy was administered by a para-professional who had several



years of experience in the field of animal interventions. Precautions were taken to ensure utmost care towards the therapy dog's health and well-being. Any kind of harm to the animal or abuse was strictly prohibited. The conditions in which the animals were housed and sheltered were taken care to ensure the dog's health and well-being (APA, 1996).

## **Results and Discussion**

The current study aimed at assessing the effectiveness of Animal Assisted Therapy as an adjunctive method for children and adolescents with autism spectrum disorder. The results and insights obtained from the study have immensely contributed to seeking a perspective to answer the research question. Through the course of the discussion, all findings have been revealed with necessary reasoning and justification for reaching the conclusion. As a part of the detailed multiple case study method, six cases were chosen to be a part of the research study.

### **Cross case analysis**

The research study on the effect of Animal Assisted Therapy on 6 children and adolescents with autism was found to be beneficial in the areas of communication, social, motor and behavioral parameters. Each child was aided at a different level based on their severity of illness and ability to be receptive of this adjunct form of therapy.

As Ridley & Lang had noted in their study in 2010, AAT can aid in counseling and individual therapy with a client, the same was observed in the therapeutic sessions. Each child was better able to interact with the dog than as preciously tired with humans. The non-judgmental and unconditional acceptance by the dog made the child feel comfortable and important. This enabled them to express themselves with the dog.

The most common outcome of the therapy in the group was that the children were able to participate in the group activities like singing, reciting rhymes and narrating a story to the therapy dog. This resulted in boosting their confidence level and enhancing their communication skills. The children were also accommodative to the needs of others. In an individual case the child was so attached to the dog that he would push others side to be seated beside the dog

through the course of the therapy.

In terms of social skills, the participants of the study were able to express themselves better to the dog and this helped them improve their relationship with the therapist, their peers and primary caregiver. It was directly observed in the few cases the child would explain the daily activities to the mother by holding other toys in hand, participants also learned new words and formed sentences like 'I am brushing, Dog is sleeping, and this is her nose'. They were also able to relate to other street dogs and would be sensitive to other animals. They also benefited in the area of motor skills as they began to hold the pen more appropriately after brushing the dog.

In some cases the children became less anxious and irritated in the presence of the dog. Since they were more relaxed, they could communicate more loudly and they also motivated the other participants in group activities. As Animal Assisted Therapy is a goal directed therapy, its therapeutic process and outcome would vary from each case. Every participant had certain target behaviors and key areas to be worked on and hence made this an individualized therapeutic method.

## **Conclusion**

Autism, a pervasive developmental disorder, is no longer unknown to families across the globe. With recent statistics from Centres for Disease Control and Prevention (2012), reports indicate that India is home to 10 million individuals with autism. The rate of its occurrence is growing rapidly with one in 88 children born with Autism Spectrum disorder (ASD).

With no standardized treatment procedures for autism, several adjunct forms of therapeutic methods began to be used. One among the most recent unconventional forms of therapy is Animal Assisted therapy. From its inception in the nineteenth century, it has found to be beneficial to individuals suffering from both physical and psychological illnesses.

The current study, focuses on 'Effect of Animal Assisted Therapy on children and adolescents with Autism'. To answer the research question, if inclusion of AAT would effect the speech, cognition, social, and behavioral skills in a child and adolescent with Autism, a qualitative research study was conducted. This method provided a detailed subjective interpretation of the participant

ts, primary caregiver, animal assisted therapist and school special educator's experience and view of this form of intervention technique. Each child would be allotted a certain duration of time to pet and brush the dog. Mainly, it involved group activities such as singing, reciting rhymes, and reading, writing and drawing for the dog.

The data was collected from the Animal assisted therapist, primary caregiver and school special educator after nine AAT sessions for six participants over a period of 3 months. Data was analyzed through an iterative process and analytical induction method. Recurring themes and patterns were categorized and coded with predominant focus on themes.

Interpretation of data collected revealed that each participant benefited from the therapeutic process in the area of social, communication and motor skills. In the area of communication skills they were able to actively participate in the activities such as singing and reciting rhymes loudly. They became more confident and this behavior was generalized with them being more interactive and social with their peers, primary caregiver and therapist. They began to use more than one word to converse. All the six student's vocabulary improved as they began to learn new words and talk to the therapy dog. A few of the participants began to talk about their experience with the therapy dog at home. While a few participants were reserved, they were nevertheless motivated to participate in the group activities.

In the area of social skills, the animal assisted therapist, primary caregiver and school special educator reported that all the participants began to conform to the norms of the group. Aggressive behaviors such as pushing and pinching had decreased in the presence of the dog.

In the area of motor skills, it was observed that a few of them had fine motor skills deficit. They had difficulty with tripod hold and therefore found it difficult to write, color and draw. However, with AAT session their skills have been enhanced as they have brushed the therapy dog and tried to draw and write to the dog.

Other behavioral concerns were also addressed, participants were found to be calmer and relaxed in the presence of the dog. Most of the participants were known to be aggressive and throw

temper tantrums. Therefore, an implication could also be found on their physical behavior. However, as an individualized and group therapeutic intervention, Animal Assisted Therapy has been a safe procedure of administration. Primary caregivers also reported that the participants became sensitive to other animals and would associate the presence of the therapy dog with other street dogs. They believed that the therapy dog set a mark of motivation for them to help their children complete homework, as they only had to reinforce their children that the therapy dog would check the homework.

However, the study paved a path for understanding the limitations and scope for future studies. It was noted by the Animal Assisted Therapist that more individualized sessions and extended period of sessions might have provided enhanced results. Nevertheless, research in the field of Autism spectrum disorder is essential and one such method to witness holistic improvement through unconditional acceptance and regard in an individual is Animal assisted therapy. Therefore, it can be implied that the presence of a dog can result in physiological and psychological benefits in an individual. However, it is suggested that further exploration and awareness regarding Animal Assisted therapy be made.

### **Suggestions for future research**

As Animal Assisted Therapy is goal oriented and does not comprise of a structured form of therapy, this study focused more on group therapy. Therefore, it becomes important to prepare personalized modules for each participant, such that each individual benefits more.

It can be suggested that individualized timelines be prepared for each child and not limit it to a fixed number of sessions, as each child has varied levels of severity of illness. Upon doing so, individual attention can be paid to factors like social, cognitive, motor and physical behaviors and a tailor made therapeutic form integrated with other therapies like occupational therapy, sensory stimulation therapy, physiotherapy and speech therapy can be provided to the child.

A quantitative intervention study can also be conducted to assess the effectiveness of the therapy, through pre, mid and post evaluation. This will provide reliable objectified data, as an addition to the qualitative analysis.

A control group can also be analyzed as a part of data collection, such that two different adjunct forms of therapies can be assessed. It can lastly be suggested that a maintenance evaluation be done post therapy, to assess relapse of symptoms.

### **Limitation**

The most important limitation of the current study is lack of consistency in providing the intervention technique. There was a three week gap during the process as the therapy dog was unwell and other factors such as unavoidable work circumstances made it inconvenient for the Animal Assisted therapist to be available.

Focus was paid on group therapy sessions, hence limiting individual benefits and outcomes.

The number of therapeutic sessions were restricted due to the specified timeframe, this might have compromised the results and scope of the study.

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