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Comparing Free Play and Structured Interaction in Pet-Assisted Therapy for Different Autism Types

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Abstract. This paper examines the results of free play and play with structured interaction in pet-assisted therapy. People with autism have a number of difficulties in their social and emotional functioning. This paper examines the results of free play and play with structured interaction in pet-assisted therapy. We wish to demonstrate that different interaction will result in different results and to identify which interaction is more appropriate for each autism subtype (i.e., classic autism or Asperger's syndrome). This paper reviews the literature and examines the potential weaknesses in the current body of research. Understanding these differences and how to bridge them is what makes this field of study interesting. The aim is to receive the most out of the animal assisted intervention for all.

Keywords: pet-assisted therapy, autism, Asperger's syndrome, classic autism

1. Introduction

This group of conditions, known as Autism Spectrum Disorder (ASD), arises from variations in neurodevelopment. Key signs often include impaired social communication, repetitive patterns of behavior, and highly focused interests. These signs are usually visible by the age of three and persist throughout a person's lifetime. Individuals with Asperger's syndrome usually possess normal language abilities and above-average intelligence [1], with a willingness to engage socially. In contrast, classic autism individuals often display delayed language development, may have intellectual disabilities, and generally lack interest in social interaction. Animal-Assisted Therapy (AAT) is a structured, goal-oriented intervention led by professional therapists or healthcare providers. It employs trained animals (e.g., dogs, cats, horses) [2]. as assisted tools to enhance patients' physiological, psychological, social, or cognitive functioning. Free play refers to unstructured engagement without specific guidance, tasks, or objectives—simply spontaneous interaction between the patient and animal, such as through free play. Structured interaction involves therapist-designed tasks for the patient and animal to complete together, such as following instructions [2]. AAT has demonstrated remarkable efficacy among autism individuals. This article will summarize how different interaction modalities yield distinct effects for various types of ASD individuals.

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2. Literature review

Nowadays, pet therapy is being increasingly widely applied in various settings, such as medical institutions, where it has been incorporated into psychological treatment. The positive effects of animal-assisted therapy on overall well-being are supported by research. Specific studies, like one meta-analysis, confirm these findings. Beyond measurable health outcomes, pets are widely recognized for providing emotional support and enhancing overall quality of life [3]. In addition, the main animal (dog and cat) in PAT is more accessible than other animals like dolphin and horse. Canine-assisted therapy works well for two main reasons. First, dogs often have a stronger effect in therapy sessions compared to other animals. Second, they are also simpler to train than larger animals like horses or dolphins [3].

2.1. Why PAT is suitable for autism

The possibility for PAT to create a low-anxiety ambiance is another advantage. A kid with autistic disorder can work into a relationship of physical and mental calm tripping on an animal being bestowed with the ability to bear down the social capacity of the pressure of human-to-human contact, whereby the anxiety and enabling child therapy for treatment this can further enhance their ability to attend therapy and improve their experience. “Secondly, some children with autism feel a sense of connection [3]. Youngsters with autism disorder feel isolated due to trouble interacting, but pets may be wonderful company, overcoming the isolation of loneliness and may behave as a bridge toward introducing the exterior world to the sufferer”. In addition, the absence of feedback from the interpersonal explanation may be beneficial.

It can help reduce arousal levels in children with autism. Physiological and psychological arousal levels refer to an individual's physical and mental reactions and activation when faced with certain situations or stimuli. Studies have shown that introducing pet therapy can lower arousal levels in non-autistic children [4]. For individuals with ASD (Autism Spectrum Disorder), physiological and psychological arousal levels are particularly important [2], as they are highly prone to anxiety during therapeutic interventions. Research indicates that 29.2% of autistic individuals experience anxiety and introducing CAT (Canine Animal Therapy) can reduce arousal levels in autistic patients, thereby alleviating anxiety during treatment and helping them engage more actively in training and therapy.

Table 1. Study components

Authors(year)	Ages	N	%Male	Control	Components	Form of measurement	Effect sizes
Becker,Rogers,&Burrows(2017)	8-14	31	87.5%	Y	SST with dog vs.SST with no dog	RMET, SLDT, 3SRS-II	1.5
Fung and Leung (2014)	6-10	10	80%	Y	Play therapy with dog vs.play therapy with no dog	Observations	*
Grigore &Rusu (2014)	4-5	3	66.7%	N	SS with no dog vs.SS with dog	Observations	0.83,0.92,0.79
Martin and Farnum (2002)	3-13	10	80%	N	Therapy with a ball,therapy with a stuffed dog,therapy with a therapy dog	Observations	0.10
Redefer &Goodman (1989)	5-10	12	75%	N	Structured play therapy with dog vs. structured play therapy without dog	Observations	1.42

RMET,Reading the Mind in the Eyes Test;SLDT,Social Language Development Test,SRS-II,Social Responsiveness Scale-Second Edition;SS.socialstory therapy;SST,social skills training*Effect size not reported

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Table 1.The subject of this table is the potential for dog interactions to enhance social abilities in children who have autism. Adapted from [2].

According to the table, children with autism show more positive results from therapy that includes dogs. These outcomes are better than those from standard interventions without a therapy dog. In Becker's study, children who received social skills training (SST) with therapy dogs showed a remarkably high effect size of 1.5. Similarly, Redefer's research found that structured play therapy incorporating therapy dogs achieved an equally impressive effect size of 1.42.

Furthermore, Grigore's data revealed consistent positive effects, with effect sizes ranging between 0.79 and 0.92 following therapy dog intervention. The collected studies strongly indicate that therapy dogs make useful contributions to the social development of children with autism. This positive trend is clear, even though one study by Martin recorded a smaller effect size of 0.10.

2.2. Structured interaction and free-play

After mentioned that pet-assisted therapy is effect to autism, while pet-assisted therapy has two interaction method may could in to autism individuals' treatments. Different interaction methods have different therapeutic effects. So, my research will mainly focus in free-play and structured interaction. Structured interactions refer to a therapist assigns a specific task (follow commands, fill in the blanks, finish the sequence, etc.) to a patient to help him/her reach a specific social/behavioral goal. Structured interactions have the targeted treatment goal, for example, improve social goal. Structured interactions follow certain set of procedures and clear goals, so the therapists can modify the treatment according to the patient's response.

For instance, the Social Story intervention method has been applied in various populations [2]. If we apply it in pet-assisted therapy, it could help children with autism to comprehend the social scenario and improve the therapy effect.In contrast, free play prioritizes spontaneity and patient-led engagement. Without the constraint of fixed procedures, this approach, the patient and therapy animal interact with minimal planning, allowing the patient to express emotions in a relaxed environment free from social pressure—for example, through play or petting the animal. The goal is to help the child open up to the world and overcome any fear of interacting with dogs [5]. Additionally, this relaxed state can prepare the patient for subsequent therapeutic interventions.

2.3. Different subtypes of autism

As different autism have different symptoms so different interaction may lead to different treatment effect. So, I would introduce two main type of autism, Asperger's Syndrome and Classic Autism. Asperger's Syndrome is a neural developmental disorder that was previously considered a subtype of Autism Spectrum Disorder (ASD). The core characteristics of Asperger's are similar to those of high-functioning autism, but it typically does not involve significant language or intellectual delays, and some individuals may exhibit exceptional abilities in specific areas.

There is evidence that CBT can play a major role in the treatment of Asperger's Syndrome. CBT is a short-term, oriented psychotherapy. Unlike other forms of therapy, it does not focus on identifying an action to change the behavior. CBT aims to change the harmful thinking process and thereby affect behavior. At the same time, CBT suggests that a correction in the thought process will automatically lead to a change in behavior. During the process, several steps help adjust thinking patterns. The result is the removal of emotional distress CBT. For example, CBT can correct an individual's depressive condition by scheduling pleasurable activities or help face individual fears Go through steps. According to a meta-analysis presenting a relatively large effect-size (E.S) of 1.21

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for a clinician-rated symptom [1], CBT can improve anxiety symptoms in children with high ASD. It is possible that procedural treatments without structured results are challenging for persons on the spectrum because they require logical steps [6]. Dispersal may be fatal in that it causes anxiety, but structured steps logical manner connotes safety. Moreover, some individuals may have verbal abilities, and CBT can use social scenarios, or language scripts, to teach how to engage in conversation.

Classic autism is a more severe subtype of psychotic disorder that covers a significant part related to language development, disorderly conduct or lack of interest in sociability, and several repetitive, stereotyped movements and behavior. This group disturbs the specific tradition movements, used behavior patterns or the manifestation of sensory stimuli. Moreover, studies have shown that classic autism subspecies is more developed by nature in ABA. This method is based on the theory of learning and includes behavior shaping, reinforcement, and task analysis breakdown. For example, a patient can be taught to dress, and every step is played down in a row, and the patient must repeat every action multiple times, helping to reinforce learning. This method has a range of benefits, and it helps patients develop language, behavior, social interaction, and reduce undesirable behavior. For example, a screaming patient can cheerfully shove their hand horizontally when upset.

Research indicates that low-functioning individuals with autism show more significant improvement and adaptive behavior with ABA than high-functioning patients [7]. Classic autism individuals often lack basic skills, and ABA can break tasks down into smaller steps to teach them how to perform them. Additionally, patients with self-injurious behaviors can benefit from ABA's Functional Behavior Assessment (FBA), which identifies the underlying causes of such behaviors and develops a plan to reduce them. ABA's Language Behavior Training is also particularly effective for autistic individuals with language impairments.

2.4. Different therapeutic effects

After the analysis of different interaction methods and different subtypes of autism, make a brief diagram to make a conclusion and discuss my research topic, different interaction method in pet-assisted therapy has different treatment effect based on subtypes of autism.

Table 2. Brief summary

	CBT	ABA	Structured interaction	Free-play
Classic autism	1. Basic ability issue. 2. Feeling pressure.	1. More gentle treatment. 2. Training and repetitive. 3. Training to reduce problem behavior.	1. Too complicated for them. 2. Feeling pressure during therapy.	1. Sensory stimulation. 2. Help to learn non-verbal expression. 3. No pressure environment.
Asperger's Syndrome	1. Preference rules and systems. 2. Changing negative thinking patterns.	1. Too mechanical. 2. Treatment goals aren't match.	1. Preference the logical therapy way. 2. Improve social skills.	1. Language proficiency not match. 2. Illogical treatment process leads to anxiety.

This diagram makes a simple conclusion which I mentioned above. Using those brief words gives a clearer therapeutic benefit for using a different treatment method. And moreover, I would give further thought to why Asperger's autism is more suitable for structured interaction with pets and classic autism more suitable for free-play.

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To believe that different interaction methods (free play and structured interaction method) have more targeted efficacy for different types of autism. Based on the analysis above, we can draw parallels between the characteristics of different types of autism and the interaction methods used in pet-assisted therapy. For instance, structured approaches within animal-assisted therapy are often a good fit for people with Asperger's Syndrome. This is effective because most individuals with Asperger's have intact language skills. Therefore, practicing social situations, a common technique in their CBT, can support their progress. Similarly, structured therapy in pet-assisted therapy, like the use of social stories, is very similar to the social scenario practice in CBT. Research has also shown that using therapy dogs in social story interventions leads to better outcomes, making structured therapy in pet-assisted therapy effective Asperger's Syndrome.

Second, structured interactions are also logical, which could be relevant to Asperger's Syndrome patients. Asperger's autism is more responsive to predictable, rule-based, and logical environments. This means they can also be more responsive to structured interactions in PAT, which, as one of the techniques of psychotherapy, is fundamentally related to cognitive behavioral therapy, which was proven effective in these patients [1]. Their main problem is, in fact, the inability to establish contact, while structured interactions will assist them in learning social interaction basics by playing with a pet. For example, trying to command a pet and resorting to various actions after receiving a no/his decision can imitate a real or normal social interaction. Additionally, since a lot of individuals with autism have other disorders like anxiety or depression, they can become calmer with a pet, which decreases their level of arousal and heart rate, so they can engage more properly.

Petting a dog's fur or feeling the rhythmic purring of a cat can help alleviate a sensory sensitivity for those with an autism spectrum disorder. As with classic autism, an aversive reaction can occur, stemming from sensory stimuli. The rhythmic vibration of a purring cat or the repetitive sensation of a dog's fur can serve as a "light touch" equivalent to deep pressure – calming the nervous system, reducing arousal levels, and improving emotional equilibrium. This state of "on-line receptiveness" is inherently conducive to the development of new learning and emotional states [7]. They connect less due to socializing and language issues. Without explicit tasks, there is no stigma or anxiety or potential frustration or perception of meaningful failure based on previous learning. Free play is intrinsically driven, the individual plays with the animal because play is fun and not because the staff or student has chosen it as appropriate. This free-form, voluntary contact relationship encourages positive analogical meaning and models how a mutually pleasant encounter is formed – often called shared joy. There is minimal stress or limitation of learning through functioning. Thirdly, free play allows non-verbal communication. These patients have significant language difficulties and can facilitate free play by removing pressure and failing the learning context and otherwise being restricted.

3. Limitation and evaluation

Firstly, it is overlooking more complex subtype. In this paper, I focused only on two types of autism: Asperger's syndrome and classic autism. But autism includes other types as well. Several conditions belong to this category. For instance, they include Asperger Syndrome, Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS), classic Autism, Rett Syndrome, and Childhood Disintegrative Disorder (CDD). Each type has its own core symptoms, severity levels, and different reactions and characteristics. These differences could also affect treatment, because the approach in pet-assisted therapy of free-play and structured interaction may not work equally well for all types. This is a limitation in the current research. Future studies should pay attention to this gap and work to fill it.

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Secondly, ignore individual differences. In the paper, I treated Asperger's syndrome and classic autism as single groups, broadly summarizing their characteristics while overlooking individual differences. The most obvious issue is that autism individuals often have different comorbid conditions—some have anxiety, ADHD, OCD, and so on [8]. For example, many with Asperger's struggle with severe anxiety. If they continue with structured therapy like social stories in pet-assisted interventions, they might feel even more stressed, leading to resistance or refusal in the treatment process. In such cases, therapy should focus on each patient's unique needs and adjust the approach accordingly.

Thirdly, it may be low representativeness. When reviewing the literature, I noticed a common issue in many studies: the sample size is too small. This problem can affect the validity of the research findings. To ensure reliable data and results, future studies must use larger and more representative samples.

4. Conclusion

This study looked at how different interaction methods in pet-assisted therapy (PAT) work for people with autism spectrum disorder (ASD), focusing on classic autism and Asperger's syndrome.

Structured interaction methods. (like therapist-guided tasks and social story interventions) work best for Asperger's patients because, they prefer clear, step-by-step approaches. They usually have good language skills, this matches well with cognitive behavioral therapy (CBT) methods, Research shows CBT helps reduce their anxiety (with a strong effect size of 1.21).

And next interaction is free play interaction works better for classic autism individuals because it creates a relaxed, low-pressure environment, It helps with sensory sensitivity issues, It supports non-verbal communication, it fits well with applied behavior analysis (ABA) techniques.

The limitation in the paper I think is, we didn't include other ASD types such as PDD-NOS or Rett syndrome. We didn't fully account for individual differences (like anxiety or ADHD).and many existing studies use too few participants.

And I think the future research should consider is should include more types and levels of ASD in the research. Create personalized treatment plans based on patients' different features and symptoms. Do larger, more representative studies, and access more target population in the research.

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