The International Journal of Indian Psychology
ISSN 2348-5396 (Online) | ISSN: 2349-3429 (Print)
Volume 11, Issue 3, July- September, 2023
DIP: 18.01.177.20231103, DOI: 10.25215/1103.177
https://www.ijip.in

Review Paper

The Social, Emotional, and Behavioural Effects of Animal Assisted Interventions on Children with Autism Spectrum Disorder (ASD): A Systematic Review

Jheel Mehta[1]*

ABSTRACT

Animal-assisted therapy (AAT) has shown promise in improving social, emotional, and behavioural outcomes in autistic children. According to O'Haire et al. (2013), studies have found that AAT, particularly canine-assisted therapy (CAT), is associated with increased social interactions, prosocial behaviours, and reduced emotional and behavioural difficulties in children with autism spectrum disorder (ASD). The presence of therapy dogs has been found to enhance social functioning and promote positive emotional responses in autistic children (Funahashi et al., 2015). AAT provides a unique and engaging environment that helps children with ASD develop social skills, enhance emotional regulation, and decrease problem behaviours. These positive effects highlight the potential of AAT as a complementary intervention for improving the social, emotional, and behavioural well-being of autistic children. However, further research with rigorous methodologies is necessary to fully understand the mechanisms and long-term effects of animal assistance therapy on the social, emotional, and behavioural outcomes of autistic children.

Keywords: *Animal-Assisted Therapy, Autistic Children, Social Interactions, Prosocial Behaviours, Emotional Regulation, Behavioural Difficulties, Canine-Assisted Therapy, Therapy Dogs, Social Functioning, Positive Emotional Responses, Complementary Intervention, Well-Being, Long-Term Effects*

A neurodevelopmental disorder known as autism spectrum disorder (ASD) is characterised by challenges with social interaction, communication, and restricting and repetitive behaviours. One of the most common developmental disorders, ASD is expected to impact one in every 54 children in the United States, according to the Centres for Disease Control and Prevention (CDC) (CDC, 2021). There are several therapies that could assist children with ASD in learning new skills and overcoming a array of developmental difficulties. These procedures are not meant to treat ASD. Instead, they support your child's development in social and play skills, academic performance, and adaptive skills for navigating daily life. Animal Assisted Therapies have been highlighted in number of research, where interacting with animals has been linked directly to having favourable health effects. Mental, physical, and skill enhancement are all advantages of

[1]Amity Institute of Behavioural and Allied Science, Amity University, Maharashtra, India
*Corresponding Author

Received: May 28, 2023; Revision Received: August 07, 2023; Accepted: August 11, 2023

animal therapy. This literature review aims to evaluate the social, emotional, and behavioural effectiveness of animal assisted therapies on autistic children.

Social Effects of Animal Assisted Therapy on Autistic Children

Majority of researchers found that interactions with animals were beneficial to various findings, including cognition, social and emotional functioning, motor abilities, and physiological arousal. Where a study by (Carolien Wijker et al., 2020) discovered that dogs helped adults with autism alleviate stress and agoraphobia symptoms. Furthermore, participants' spouses, close relatives, or acquaintances noted how animal assisted therapy improved their social responsiveness. A small to medium effect size persisted at the 10-week follow-up despite the fact that the benefit of AAT on lowering psychological and physical difficulties did not reach statistical significance for a composite scale score. Additional studies revealed (Smith & Dale, 2016) that using animal assisted interventions in the classroom to help students with autism spectrum disorder reported benefits such as improved social skills, increased student engagement, reduced stress and anxiety, and decreased classroom behavioural issues in autistic children. Few obstacles, such as a lack of information, resources, and support, as well as worries about student allergies, conduct, and animal welfare, were noted by the author (Smith & Dale, 2016) while adopting animal-assisted interventions in classrooms. Following (O'Haire et al. (2014) conducted a similar study on classroom intervention for autistic children with animal assistance which resulted in improved social approach behaviour, decreased social retreat behaviours, and increased social abilities. Further analysis revealed that the animals' presence may have improved the classroom environment and increasing child's motivation to go to school.

Another study by Sissons et al. (2022) found insufficient evidence for other types of animal-assisted treatments (AAIs), but evidence for the effectiveness of equine-assisted services (EASs) in enhancing social functioning in children with autism. Although few discrepancies were discovered in the changes in subscales of the Social Responsiveness Scale (SRS), the included studies revealed statistically significant improvements in social functioning indicators (Sissons et al., 2022). Similar studies have shown that equine-assisted services and dolphin-assisted interventions improve socialisation in autistic children, but there are drawbacks, such as a lack of outcome assessment that is blinded (Peters et al., 2021; Zhao et al., 2021; Hernández-Espeso et al., 2021).

In another study, it was found that having trained dogs around during AAT sessions boosted children's motivation, enjoyment, and engagement (Maeve Doyle London et al., 2020). The dogs helped to attract the interests of the children and foster an enjoyable and intriguing atmosphere. Dogs being used in therapy sessions, according to parents, helped their child's communication and abilities to improve. The children's ability to communicate with others including people and the dogs themselves seemed to be improved by the presence of dogs. According to (Amy Kate Rehn et al., 2023), AAT may be a useful strategy for enhancing social functioning in kids with ASD. But the current literature's lack of standardisation and methodological issues point to the necessity for more precise study.

In summary, an early study by O'Haire et al. (2013) found that having animals around can encourage more positive social engagement, improve social skills, and strengthen relationships between kids with ASD and their peers. In therapeutic and educational contexts, animal-assisted therapies may be a successful strategy to improve contact and engagement with therapists, practitioners, and peers. The specific mechanisms and

advantages of animal presence in boosting socioemotional development in kids with ASD need to be explored in more detail.

Emotional Effects of Animal Assisted Therapy in Autistic Children

Most autistic children face trouble understanding and portraying emotions. To understand emotional effects of animal assisted therapies on autistic children there are several research conducted. (Cirulli et al., 2009) examined the emotional effects of animal-assisted therapies on autistic children, and it focused on the potential for dog-assisted interventions to enhance the lives of emotionally impaired children, including those with autism spectrum disorders. Though there is conflicting scientific information on the impacts of interactions between humans and animals, this only serves to highlight the need for more study. In a subsequent study, (Atsushi Funahashi et al., 2014) discovered that a wearable interface device may be used to quantitatively quantify the smiles of an ASD child while they are participating in an animal-assisted activity. Using ICA and machine learning techniques, it was observed how children experienced pleasant feelings when among animals.

According to research by (Richard Eric Griffioen et al., 2020) and (Sissons et al., 2019), animal assisted therapies are beneficial in enhancing behavioural outcomes, lowering Autism spectrum symptoms, and improving medical well-being. It was determined that AAT was just as effective as or perhaps more successful than other well-known therapies. Further research by (Sissons et al., 2019) noted that both controlled and uncontrolled studies yielded favourable results. All outcome components, such as autism symptoms, were consistently improved in young children treated with AAT. Dogs were most frequently employed in AAT trials, and they had a higher likelihood of effectiveness than other animals.

Similarly, (Beetz, 2017) worked with animals which had been shown to improve trust, relaxation, motivation, and attention while reducing stress reactivity, negative mood, anxiety, and pain, (Beetz, 2017) also proposed many theories that have been put forth to explain why these effects take place, including biophilia (an innate affinity for living organisms), anthropomorphism (attributing human traits to animals), motivation, activation of the oxytocin system (a hormone linked to social bonding), attachment and caregiving (providing social support for stress buffering), and distraction processes.

In addition, a study by Lenz et al. (2022) highlights the significant role that animals have in the lives of persons with autism. Pets were considered to be members of the family, offering companionship, regularity, and essential assistance. The participants' sense of purpose, health, and well-being were all positively affected by including pets in their daily activities; they also reported feeling a sense of belonging that was comparable to that of family members. Additionally, (Ward et al., 2017) notes that certain aspects of pet ownership, like responsibility and turning to dogs for consolation, may be linked to social-emotional adjustment in adolescents with ASD. Additional research by (Carlisle, 2023) suggests that adoption results in the development of a close emotional bond between the adoptive family and the shelter cat as well as an enhancement in the child's social abilities, but there are some challenges associated with caring for the cat. Additional research (Carlisle et al., 2021) indicated a significant increase in empathy following the adoption of a cat, which is consistent with earlier research (Carlisle, 2014; Harwood et al., 2019) that found animals have a good impact on empathy in children with ASD. In several areas, including overall social skills, communication, cooperation, assertiveness, responsibility, and self-control,

there was a trend showing improved social abilities. Similar findings have been reported in studies involving dogs in animal-assisted therapy for children with ASD (Martin & Farnum, 2002; Sams et al., 2006; Solomon, 2010). Adopting a cat was also linked to significantly less separation anxiety in children with ASD, according to (Carlisle et al., 2021). This result implies that the addition of a cat may have a calming effect and assist in reducing anxiety related to change.

Summarising, A research study undertaken by (Brelsford et al., 2017) came to the conclusion that although there is a wide range in the design of such studies, animal-assisted interventions (AAI) in educational settings have reported positive impacts on cognitive and socio-emotional behaviour and physiological responses. Although inappropriate sample size, inadequate control groups, inconsistent study designs, and conflicting study methods are some of the factors that make it challenging to evaluate study results.

Behavioural Effect of Animal Assisted Therapy on Autistic Children

The meta-analysis (Carolien Wijker et al., 2021) confirms that animal-assisted therapy (AAT) is successful with regard to improving behavioural outcomes, decreasing symptoms, and medical well-being. All of these result domains had similar effect sizes. In four trials that compared AAT with other therapies, AAT was found to be as effective as or more effective than well-established strategies. In addition, a study by (Maeve Doyle London et al., 2020) found that parents who were part of AAT sessions with dogs observed improvements in their child's behavioural control. The dogs' peaceful and comforting presence had a favourable effect on the child's behaviour and self-control. The favourable effects of AAT with dogs on social and communication behaviour in kids with ASD are highlighted in another study by (O'Haire et al., 2013). Although the interaction with the dog did not seem to significantly boost prosocial behaviours or touching throughout the observation period, which could be because the experimental circumstances did not specifically allow for such behaviours.

In a similar vein, a study (Tseng, 2022) discovered that young children naturally display a fascination with animals, and that pleasant interactions with animals are linked to higher levels of the feel-good hormone oxytocin and lower levels of the stress hormone cortisol in both humans and dogs. Dogs are particularly good in encouraging prosocial behaviour in kids and adults, serving as social catalysts, and lowering physiological arousal and stress. Similarly, (Dollion et al., 2022) suggested that a child's attention and behaviour in the presence of an animal, as well as their individual characteristics such as age, ASD severity, and sensory processing disorder, may impact the effectiveness of animal-assisted interventions. While there is some evidence that AAI has a positive influence on the social behaviours of children with ASD, the drawbacks in the studies that were examined by (Hill et al., 2020) show the need for additional thorough research to support the efficacy of AAI in this population.

Additional research (Germone, 2019) revealed that activities involving an animal, such as a dog, can encourage social-communication behaviour in adolescents with ASD who are in psychiatric hospitals and may have a good impact on their engagement in psychiatric treatment. In addition, (Carlisle et al., 2021) discovered that after adopting a cat, externalising behaviours (aggressiveness, difficulties controlling anger, argumentativeness), bullying, and hyperactivity/inattention significantly decreased. In relation to it, studies by (Viau et al. 2010; Bauminger et al. 2010; Montes & Halterman 2007) found minimising

these problematic behaviours in ASD children can reduce parental stress. Similar to this, canine-assisted treatment (CAT) has been suggested to enhance prosocial behaviour in children with autism spectrum disorder (ASD) (Hardy & Weston, 2020). Dogs are the most widely utilised animals in animal-assisted therapy (AAT) for children with ASD because they are easily accessible.

CONCLUSION

children with autism spectrum disorder (ASD) have benefited in a variety of ways from animal-assisted therapies (AAT). Due to their accessibility, dogs are the most widely used animals in AAT for children with autism. AAT seeks to improve social interaction and prosocial behaviours in children with ASD. Studies have indicated that canine-assisted therapy (CAT) have a favourable impact on social behaviour, including an increase in the frequency and length of social encounters. Improvements in social conduct have been linked to the use of therapy dogs during treatment, and some studies have found long-lasting effects during follow-up. The current research in this field does, however, suffer from methodological flaws such as limited sample numbers and inadequate analytical techniques. Further research using rigorous methodologies is needed to provide a more comprehensive understanding of the benefits and mechanisms underlying Animal assisted therapies for children with ASD.

REFERENCES

Carolien Wijker, Ruslan Leontjevas, Annelies Spek, & Marie-José Enders-Slegers. (2020). *Effects of Dog Assisted Therapy for Adults with Autism Spectrum Disorder: An Exploratory Randomized Controlled Trial*. *50*(6), 2153–2163. https://doi.org/10.1007/s10803-019-03971-9

Dollion, N., Herbin, A., Champagne, N., & Grandgeorge, M. (2022, March 30). *Characterization of Children with Autism Spectrum Disorder's Interactions with a Service Dog During Their...* ResearchGate; Taylor & Francis Group. https://www.researchgate.net/publication/359595355_Characterization_of_Children_with_Autism_Spectrum_Disorder%27s_Interactions_with_a_Service_Dog_during_Their_First_Encounter

Hill, J. A., Ziviani, J., Driscoll, C., & Cawdell-Smith, J. (2019). *Can Canine-Assisted Interventions Affect the Social Behaviours of Children on the Autism Spectrum? A Systematic Review*. *6*(1), 13–25. https://doi.org/10.1007/s40489-018-0151-7

Amy Kate Rehn, Victoria Rose Caruso, & Kumar, S. (2023). *The effectiveness of animal-assisted therapy for children and adolescents with autism spectrum disorder: A systematic review*. *50*, 101719–101719. https://doi.org/10.1016/j.ctcp.2022.101719

Atsushi Funahashi, Gruebler, A., Aoki, T., Hideki Kadone, & Suzuki, K. (2014). *Brief Report: The Smiles of a Child with Autism Spectrum Disorder During an Animal-assisted Activity May Facilitate Social Positive Behaviors—Quantitative Analysis with Smile-detecting Interface*. *44*(3), 685–693. https://doi.org/10.1007/s10803-013-1898-4

Brelsford, V., Meints, K., Gee, N. R., & Pfeffer, K. (2017). *Animal-Assisted Interventions in the Classroom—A Systematic Review*. *14*(7), 669–669. https://doi.org/10.3390/ijerph14070669

Carlisle, G. K. (2023). *Experiences of parents of autistic children who adopted a cat - Gretchen K Carlisle, Angélique Lamontagne, Jessica Bibbo, Rebecca A Johnson, Leslie A Lyons, 2023*. Qualitative Social Work. https://journals.sagepub.com/doi/abs/10.1177/14733250231151946

Carlisle, G. K., Johnson, R. N., Wang, Z., Bibbo, J., Cheak-Zamora, N., & Lyons, L. A. (2021). *Exploratory Study of Cat Adoption in Families of Children with Autism: Impact on Children's Social Skills and Anxiety*. *58*, 28–35. https://doi.org/10.1016/j.pedn.2020.11.011

Carlisle, G. K., Johnson, R. N., Wang, Z., Brosi, T. C., Rife, E. M., & Hutchison, A. (2020). *Exploring Human–Companion Animal Interaction in Families of Children with Autism*. *50*(8), 2793–2805. https://doi.org/10.1007/s10803-020-04390-x

Carolien Wijker, Kupper, N., Ruslan Leontjevas, Annelies Spek, & Marie-José Enders-Slegers. (2021). *The effects of Animal Assisted Therapy on autonomic and endocrine activity in adults with autism spectrum disorder: A randomized controlled trial*. *72*, 36–44. https://doi.org/10.1016/j.genhosppsych.2021.05.003

Carolien Wijker, Ruslan Leontjevas, Annelies Spek, & Marie-José Enders-Slegers. (2019). Process Evaluation of Animal-Assisted Therapy: Feasibility and Relevance of a Dog-Assisted Therapy Program in Adults with Autism Spectrum Disorder. 9(12), 1103–1103. https://doi.org/10.3390/ani9121103

Cirulli, F., Borgi, M., Berry, A., Francia, N., & Alleva, E. (2009). Animal-assisted interventions as innovative tools for mental health. *Annali Dell'Istituto Superiore Di Sanità*, *47*(4), 341–348. https://doi.org/10.4415/ANN_11_04_04

Effects of Classroom Animal-Assisted Activities on Social Functioning in Children with Autism Spectrum Disorder | The Journal of Alternative and Complementary Medicine. (2021). The Journal of Alternative and Complementary Medicine. https://www.liebertpub.com/doi/abs/10.1089/acm.2013.0165

Germone, M. M. (2019). *Animal-assisted activity improves social behaviors in psychiatrically hospitalized youth with autism - Monique M Germone, Robin L Gabriels, Noémie A Guérin, Zhaoxing Pan, Tiffany Banks, Marguerite E O'Haire, 2019*. Autism. https://journals.sagepub.com/doi/abs/10.1177/1362361319827411?journalCode=auta

Hardy, K. K., & Weston, R. (2020). *Canine-Assisted Therapy for Children with Autism Spectrum Disorder: a Systematic Review*. *7*(2), 197–204. https://doi.org/10.1007/s40489-019-00188-5

Lenz, L., Hansen, J., Schumacher, J., Lee, H., Wong, B., & Kornblau, B. (2022). *The Role of Pets in the Lives of Autistic Adults*. *76*(Supplement_1), 7610510197p1-7610510197p1. https://doi.org/10.5014/ajot.2022.76s1-po197

Maeve Doyle London, Mackenzie, L., Lovarini, M., Dickson, C. F., & Alvarez-Campos, A. (2020). *Animal Assisted Therapy for Children and Adolescents with Autism Spectrum Disorder: Parent perspectives*. *50*(12), 4492–4503. https://doi.org/10.1007/s10803-020-04512-5

O'Haire, M. E., McKenzie, S. J., Beck, A. M., & Slaughter, V. (2013). *Social Behaviors Increase in Children with Autism in the Presence of Animals Compared to Toys*. *8*(2), e57010–e57010. https://doi.org/10.1371/journal.pone.0057010

Richard Eric Griffioen, van, Verheggen, T., Marie-José Enders-Slegers, & Cox, A. (2020). *Changes in behavioural synchrony during dog-assisted therapy for children with autism spectrum disorder and children with Down syndrome*. *33*(3), 398–408. https://doi.org/10.1111/jar.12682

Sissons, J. H., Blakemore, E., Shafi, H., Skotny, N., & Lloyd, D. M. (2022). *Calm with horses?* A systematic review of animal-assisted interventions for improving social functioning in children with autism. *Autism*, 136236132210853. https://doi.org/10.1177/13623613221085338

Smith, B. D., & Dale, A. A. (2016). *Integrating animals in the classroom: The attitudes and experiences of Australian school teachers toward animal-assisted interventions for children with Autism Spectrum Disorder. 1*, 13–22. https://doi.org/10.21071/pbs.v0i1.3994

Theories and possible processes of action in animal assisted interventions. (2017). Applied Developmental Science. https://www.tandfonline.com/doi/abs/10.1080/10888691.2016.1262263

Tseng, A. (2022). *Brief Report: Above and Beyond Safety: Psychosocial and Biobehavioral Impact of Autism-Assistance Dogs on Autistic Children and their Families*. *53*(1), 468–483. https://doi.org/10.1007/s10803-021-05410-0

Ward, A. J., Arola, N., Amy S.B. Bohnert, & Lieb, R. (2017). *Social-emotional adjustment and pet ownership among adolescents with autism spectrum disorder*. *65*, 35–42. https://doi.org/10.1016/j.jcomdis.2017.01.002

Acknowledgement

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Mehta, J. (2023). The Social, Emotional, and Behavioural Effects of Animal Assisted Interventions on Children with Autism Spectrum Disorder (ASD): A Systematic Review. *International Journal of Indian Psychology, 11(3),* 1906-1912. DIP: 18.01.177.20231103, DOI:10.25215/1103.177