The Physiological Effect of Animal-Assisted Therapy in Inpatient Rehabilitation

Ashlinn Garner, OTS; Mary Bowman, OTR/L, C/NDT, LSVT-BIG
Department of Occupational Therapy | University of Alabama at Birmingham
Stephanie Stoltzner | Hand in Paw

Introduction

Animal-assisted therapy (AAT) falls under the umbrella of animal-assisted intervention, defined as, "…a goal-oriented, planned, structured, and documented therapeutic intervention directed by health and human service providers as part of their profession," (Pet Partners, n.d.). AAT consists of a guided interaction with a therapy animal to elicit a therapeutic response. Medical professionals have observed the comfort AAT can provide their clients while they recover from painful events (Chan & Rico, 2019). Previous research suggests having the animal present can significantly reduce anxiety and pain symptoms associated with their condition (Mittley et al., 2024). However, few studies exist in literature regarding AAT as an evidence-based practice that documents a quantitative change in the client due to the interaction. Hand in Paw, a non-profit organization in Birmingham, AL, provides AAT to surrounding community partners free of charge such as local schools, skilled-nursing facilities, and inpatient rehabilitation facilities. Hand in Paw and Spain Rehabilitation Center's (SRC) facility dog and hander served as the AAT service providers for this study. The purpose of this study was to measure the possible physiological effect AAT can have on its participant in an inpatient rehabilitation setting, SRC.

Methods

- **Design**: non-randomized controlled trial based on timing of receiving AAT with either Hand in Paw or SRC facility dog
  - Intervention- AAT session on same day as data collection
  - Control- discussed prior interaction with either team
- **Outcome measures** for participants' response to the proposed intervention included:
  - Salivary cortisol sample
  - Wong-Baker FACES scale
  - Heart rate (HR)
  - Blood pressure (BP)
  - 0-10 Likert-scale for feelings of stress with 0 indicating no stress and 10 meaning the highest level of stress
- All variables were collected before and immediately after the protocol in both the intervention and control groups.
- **Recruitment Method:** word of mouth and recreational therapist at SRC helped to determine appropriate potential participants
- **Participant inclusion criteria**: must be able to provide informed consent, +18 years of age, and have no known allergy to pet hair or dander.

Results

Table 1.1 Demographic Data

Data Collected	Intervention	Control
Age Mean(SD)	65(±6.1)	41(±31.9)
Total Male	2	2
Total Female	3	1
Total Facility Dog Visits	4	2
Total Hand in Paw Dog Visits	1	1

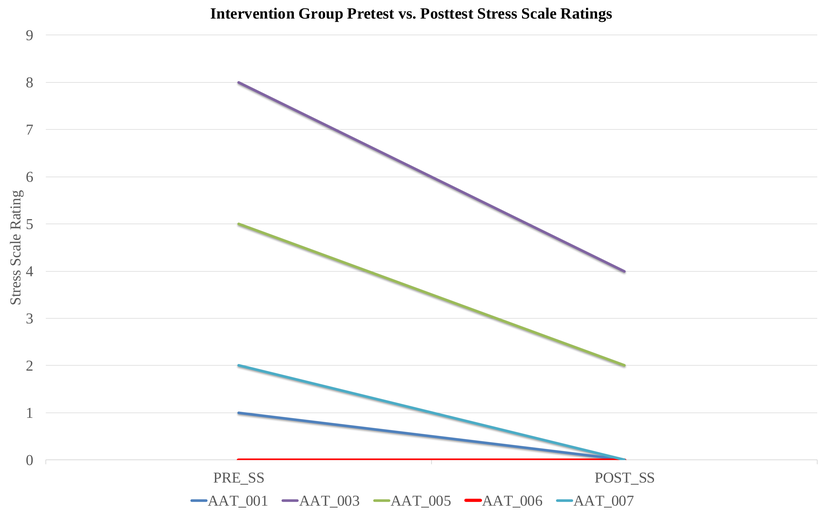

Table 1.2 Comparing Outcomes Between the Intervention and Control Group

Outcome Measure	Intervention	Control
Total Participants	5	3
HR Change Mean(SD)	+10.4(±13.5)	+4(±6.9)
BP Change Mean(SD)	+5.6(±22.5) Systolic +0.7(±12.5) Diastolic	+2.6(±19.3) Systolic +10(±14.4) Diastolic
Wong-Baker FACES Rating Change Mean(SD)	-0.6(±0.89)	-1.3(±2.3)
Stress Scale Rating Change Mean(SD)	-2(±1.58)	-0.3(±0.58)

Discussion

The aim of this capstone project was to investigate the physiological effect that AAT can have on its participants. This capstone project produced favorable findings as evidenced by the majority of participants in the intervention group reporting a decrease in their stress levels after interacting with the therapy animal which was found to be the greatest change of all outcome measures. Many of the intervention group participants experienced an increase in HR and BP following their interaction with the therapy animal. This change in vital signs can be attributed physically demanding tasks completed by the participant during the AAT session. An increase in HR and BP is expected when increasing the physical demand on the patient, so it can be assumed that the increase in vitals is in response to the therapy session's difficulty level. Dry mouth influenced by dry climate and a side-effect of possible medications resulted in the inability for most participants to produce a saliva sample. Future studies wishing to analyze changes in cortisol should explore other methods of collection such as hair follicle or blood samples.

Conclusion

Implications

- Data support the use of AAT as a means to decrease a patient's pain and stress levels before and after a treatment session
- Practitioners should consider using AAT during treatment sessions to encourage patients to complete physically challenging tasks.

Future Research

- Investigate if group AAT can elicit similar findings as 1:1 sessions
- Use hair follicle or blood samples to measure changes in cortisol before and after AAT sessions

References

Chan, M. M., & Rico, G. T. (2019). The "pet effect" in cancer patients: Risks and benefits of human-pet interaction. *Critical reviews in oncology/hematology*, *143*, 56-61. https://doi.org/10.1016/j.critrevonc.2019.08.004

Mittley, V., Fáy, V., Dankovics, N., Pál, V., & Purebl, G., (2024). The role of dog therapy in clinical recovery and improving quality of life: a randomized, controlled trial. *BMC Complementary Medicine and Therapies*, *24*, 229. https://doi.org/10.1186/s12906-024- 04538-7

Pet Partners. (n. d.). *Industry terms.* https://petpartners.org/learn/terminology/#:~:text=to%20the%20professional.-,Animal%2DAssisted%20Therapy%20(AAT),as%20part%20of%20their%20profession

Acknowledgement & Contact information

•Emily Rider at SRC for helping me to identify appropriate participants for the study and observe AAT sessions with Topgun,
•Jennifer and Darcy from Hand in Paw, who provided AAT for the duration of the data collection time frame.
•**Contact Info: lgarner7@uab.edu or mbowman@uab.edu**