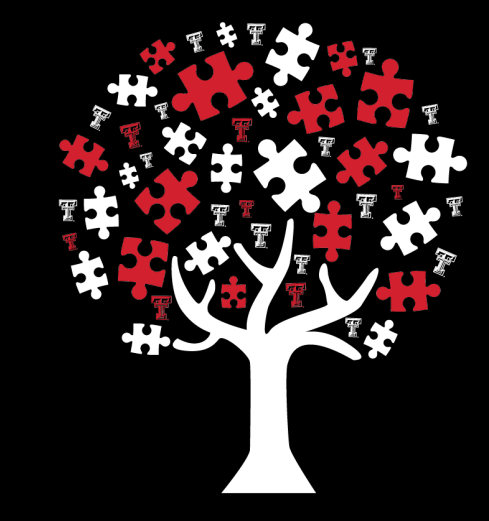
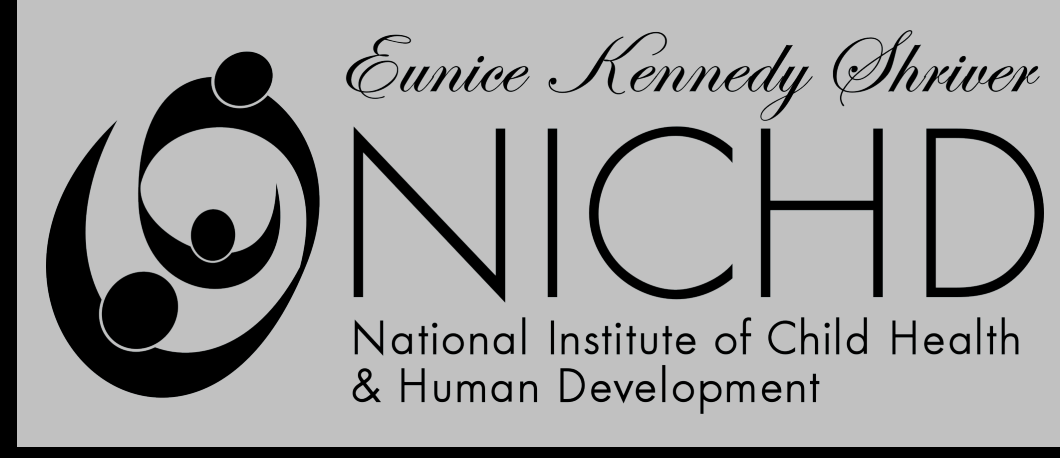
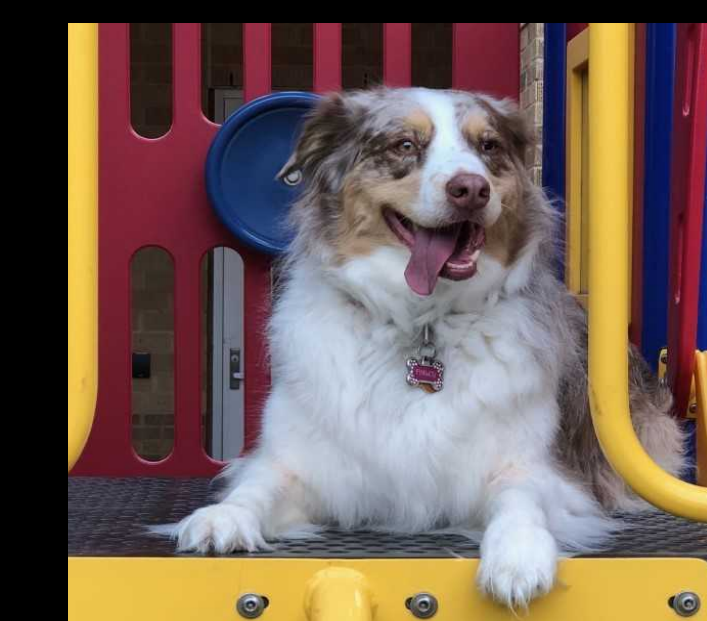


Clinical Trial: Effects of Integrating a Therapy Dog into Social Skills Classes for Adolescents with Autism Spectrum Disorder

Possibilities for life...



The Burkhart Center FOR AUTISM EDUCATION & RESEARCH



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Introduction

- Deficits in social skills represent most critical challenge associated with ASD (Mundy et al., 1986, White et al., 2007)
- Group social skills instruction has been particularly successful at decreasing social deficit for children with ASD (Dotson et al., 2010; Leaf et al., 2010; 2012)
- Animal-Assisted Interventions (AAI) can increase social behavior in children with ASD (Martin & Farnum, 2002; Silva et al., 2011; Redeger & Goodman, 1989)

The mechanism behind increase in social behavior when with a dog remains elusive

Aims

- Identify mechanism by which dogs increase group social behavior
Hypotheses: (1) Stress-ameliorating effect of dog on child (presence of dog will reduce physiological signs of stress) (2) Presence of dog will improve quantity and quality of social behavior (3) Most of children's social behavior will be directed towards dog rather than peers
- Identify if and how repeated exposure to dog influences social behavior
Hypothesis: Repeated exposure to dog will alter 1) preference to spend time with dog, as measured by changes in time spent in proximity, and 2) social-enhancing effects of the dog
- Identify the effects of dog on teacher.
Hypothesis: During repeated sessions with dog, teacher will experience less stress, engage in more social and affiliative behavior toward children, and deliver higher quality instruction

Materials & Methods

Participants:

- Students: 35 adolescents (age 11-17) with ASD
- Teachers: 7 adult therapists (undergrad/grad practicum students) trained in autism intervention

Research Design:

- 10-week social skills group repeated across 3 semesters (current data=first two sessions)
 - Students participate for 10-weeks; teachers for 30-weeks

Condition	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10
Experimental; A-B	Probes	Standard instruction				Standard instruction with dog				Probes
Experimental; B-A	Probes	Standard instruction with dog				Standard Instruction				Probes
Control; A-A	Probes	Standard instruction								Probes

Group Instruction:

- First and last week included a probes of 8 skills taught in weeks 2-9 (Tierney, 1992)
- Weeks 2-9 began with 5min of unstructured free time, then three structured activities (i.e. ice breaker, lesson, and behavior jeopardy), and finally ended with 5min of unstructured free time
- Dog is available for students to interact with during all activities and can be used as a non-judgmental partner when role playing skills
- Class wide token economy used to reinforce desired behaviors (e.g. answering questions, participating in role play)

Results

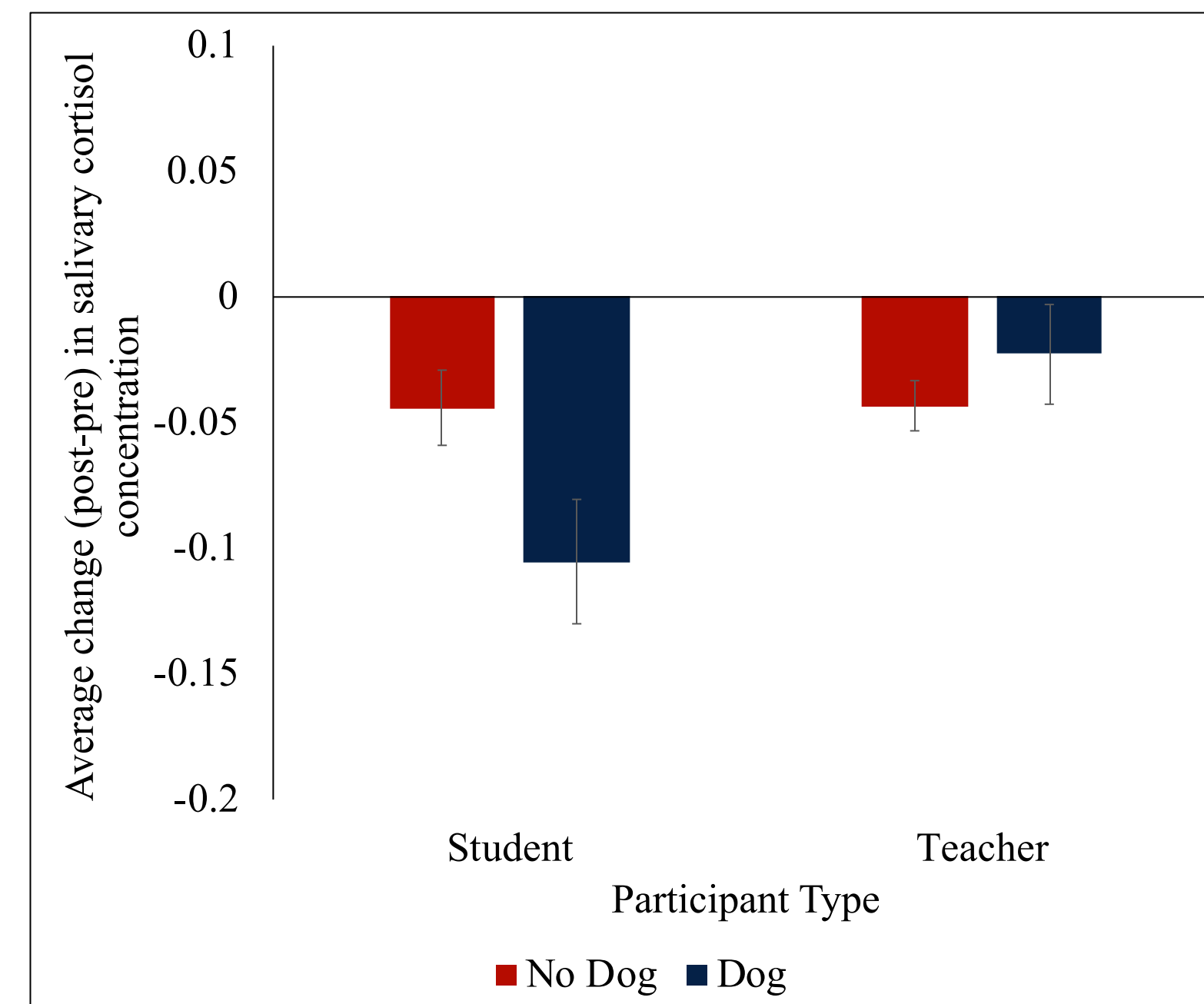


Figure 1. Average overall change in cortisol concentration by participant type

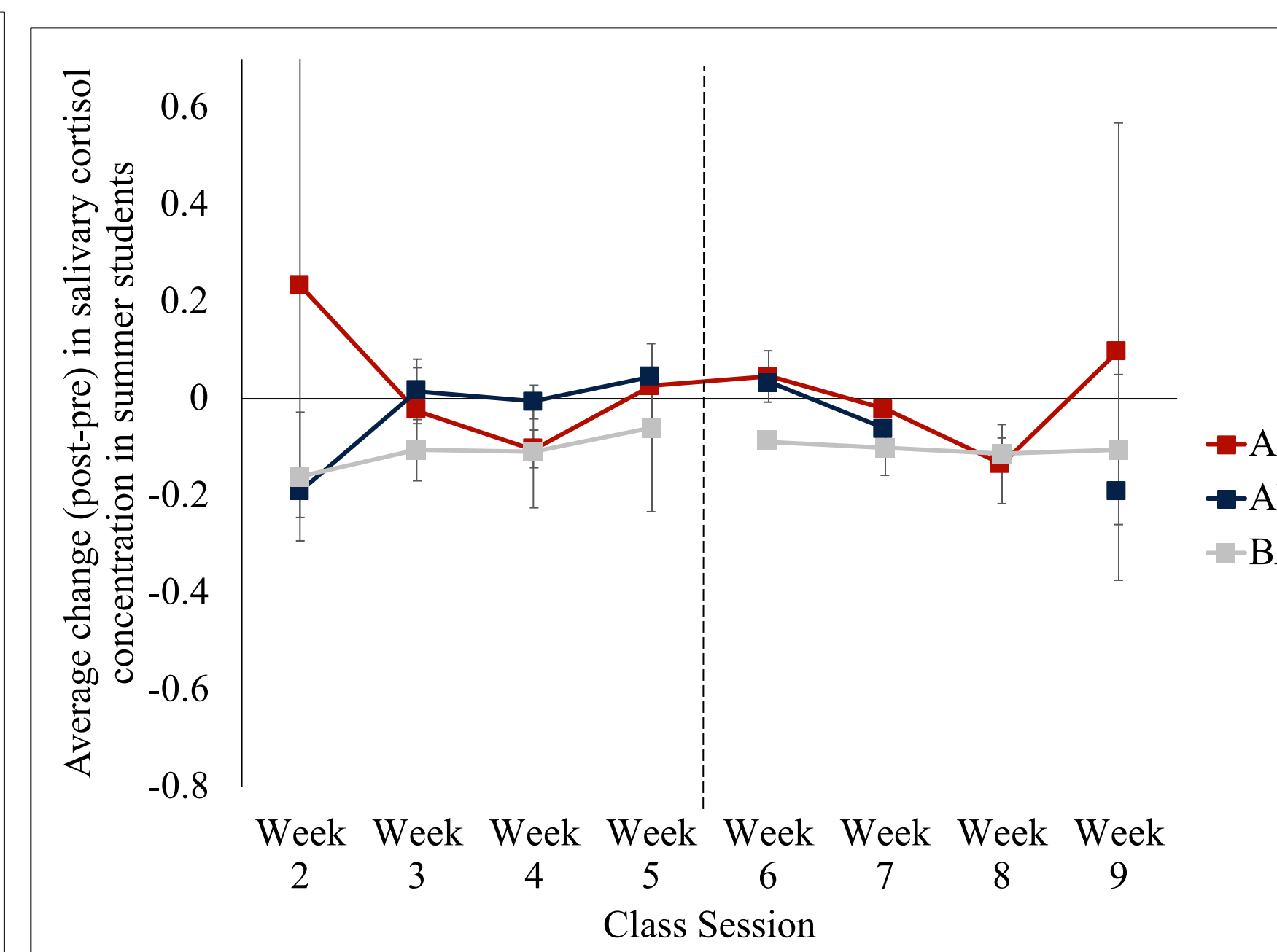


Figure 3. Average overall change in students' cortisol concentration across each week by condition for the first semester

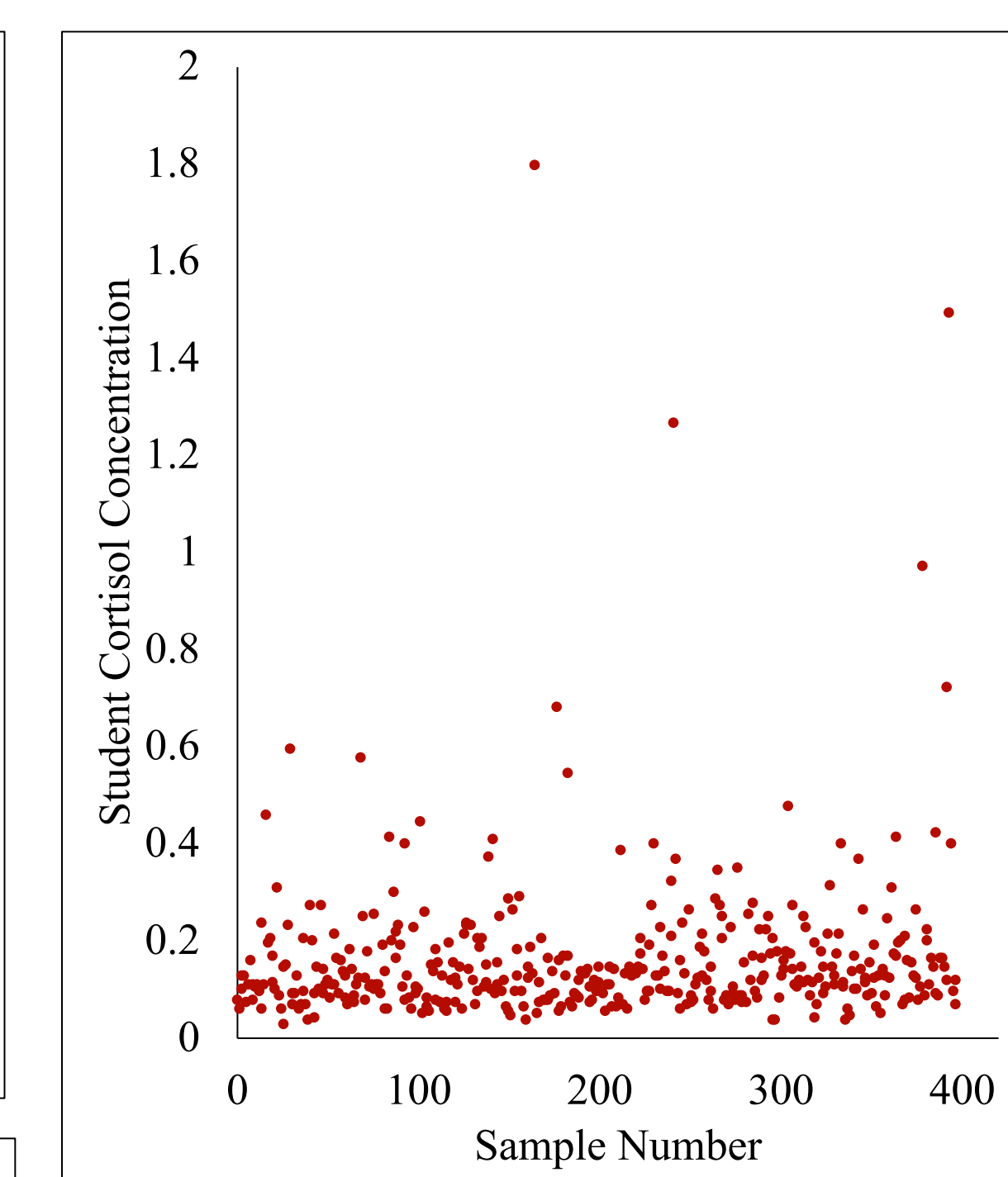


Figure 5. Individual student cortisol concentration

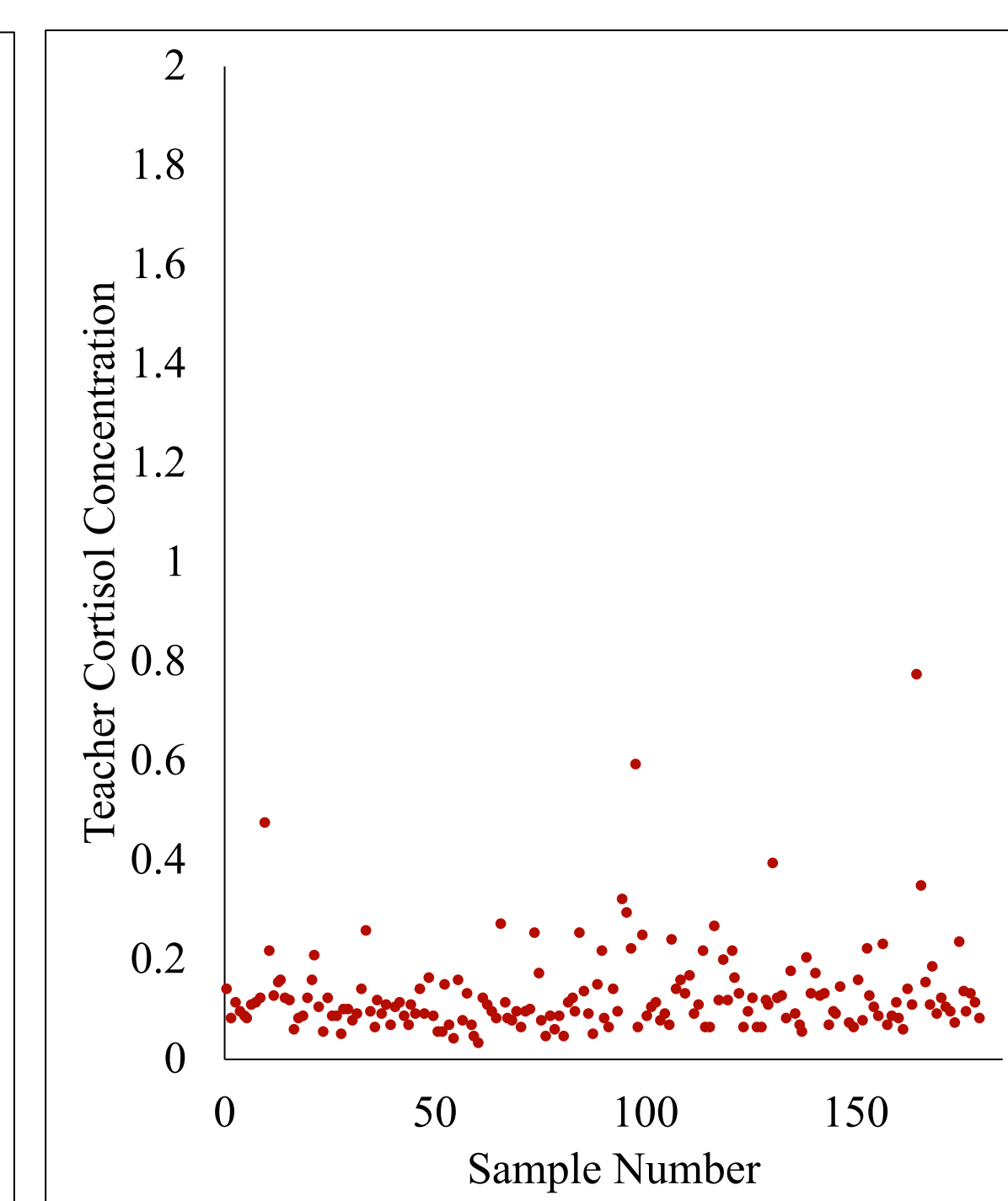


Figure 6. Individual teacher cortisol concentration

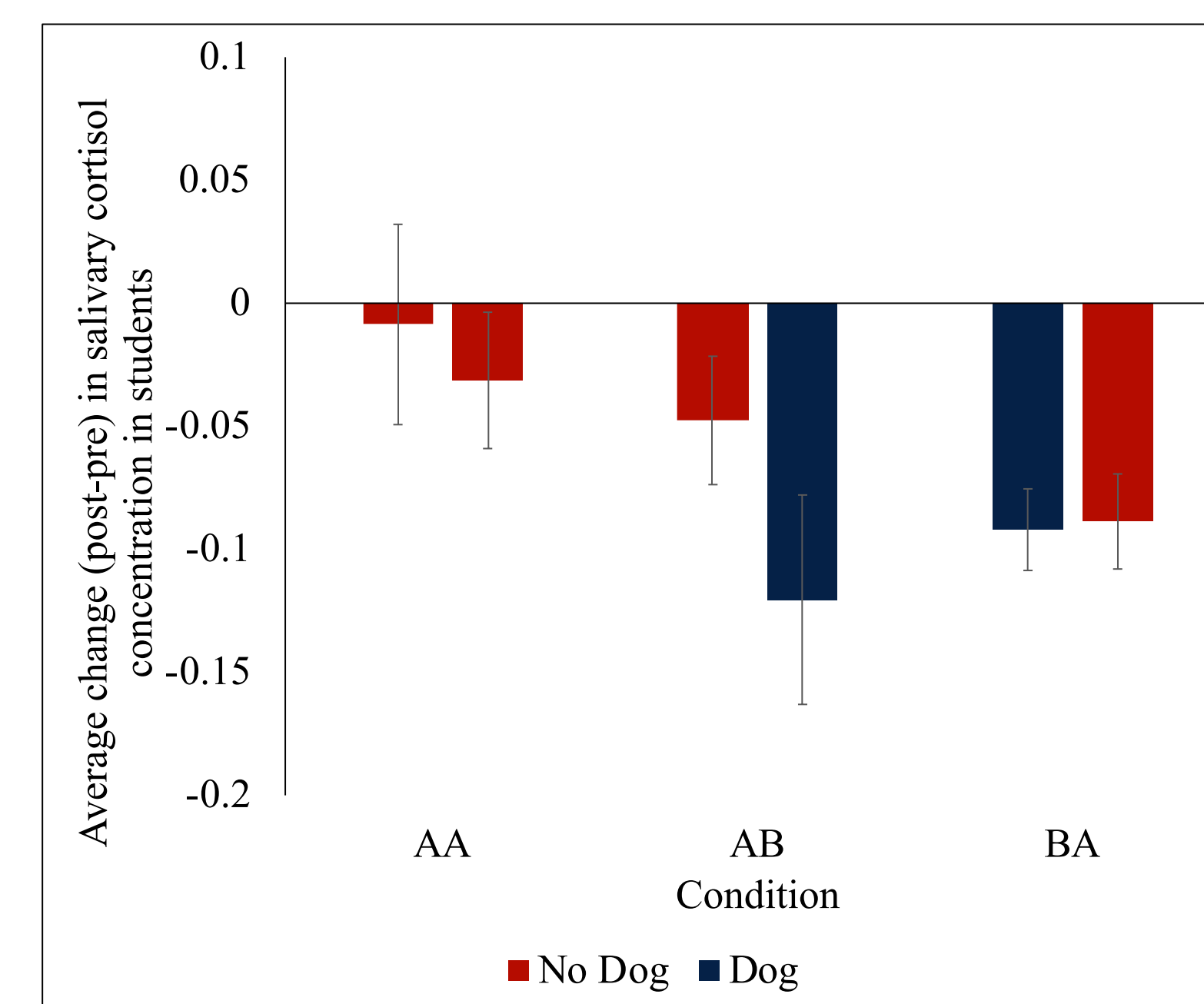


Figure 2. Average overall change in students' cortisol concentration by condition

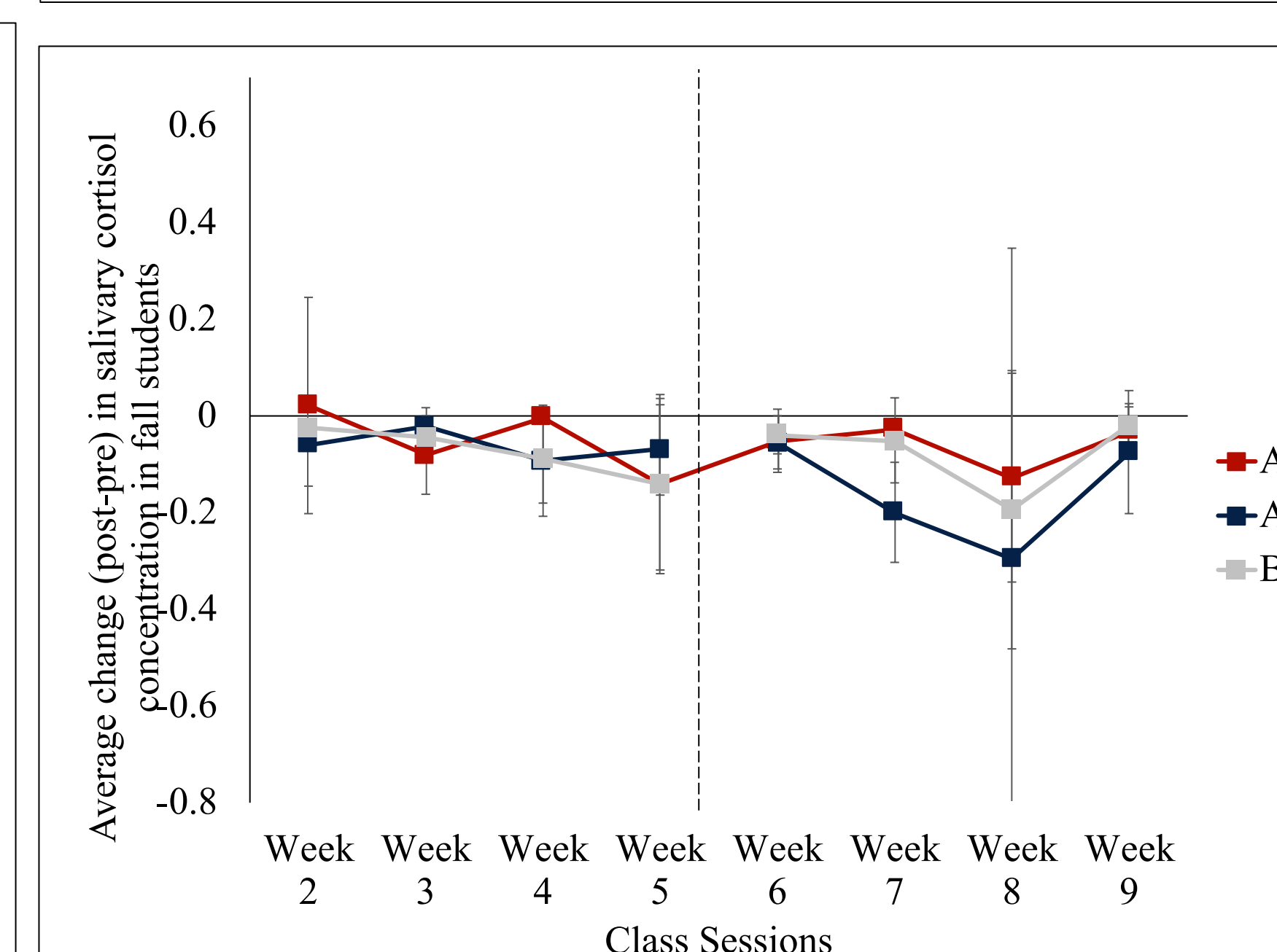


Figure 4. Average overall change in students' cortisol concentration across each week by condition for the second semester

Discussion

- Overall decrease in students' post class cortisol concentration when therapy dog is present (Fig. 1, Fig. 2)
- Decrease in cortisol concentration remained when dog no longer present (Fig. 3, Fig. 4)
- Students have a higher overall cortisol concentration than the teachers (Fig. 5, Fig. 6)
 - Df = 279, t = 1.98, p = .049
- Our current data suggests the dog may function to reduce stress in students during group social skills instruction.**

Dependent Variables

Physiological Response

- Pre/post salivary cortisol (reported here)**

Additional data still being analyzed:

- Electrodermal activity and heartrate (NeuroLynQ)

Behavior During the Session

- Social and stress behaviors (partial interval coding)
- Observation for Human and Animal Interaction for Research (OHAIRE) coding system
- Quality of instruction (teaching rubric)

Skill Acquisition

- Behavior Skills Training (BST) role play data

Future Work

- Collect relevant data from third semester of the study (18 students enrolled)
- Complete analysis of physiological and behavioral data for all semesters
- Conduct detailed statistical analysis between intervention and variables

Acknowledgements

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