

The Impact of Brief Animal Assisted Therapy Dog Interactions on College Students

Stress and Self-Efficacy Levels

Paige Kutka, Victoria Vaillancourt, Julian Percoco, & Savannah Giordano

Mentors: Drs. Dawn Melzer & Deirdre Yeater, Psychology Department, Dr. Barbara Pierce, Biology Department



INTRODUCTION: The aim of the current study was to examine the potential benefits of dog therapy programs on student stress levels on a college campus. Though increasingly popular, there is little evidence on the effectiveness of these activities. It was hypothesized that after a 10-minute interaction with a therapy dog, the student's cortisol and stress levels would decrease, and their self-efficacy scores would increase.

METHODS: Pre- and post-test scores on three assessments were compared (e.g., General Self-Efficacy Scale (GSES), Perceived Stress Scale (PSS) and relative changes in stress hormone levels (cortisol)) for 32 college students before and after interacting with therapy dogs for 10 minutes. Saliva samples were collected using Salimetrics' Salivabio Oral Swab (SOS) method from student participants 15 minutes after arrival at the study (baseline) and 15 minutes after interaction with therapy dogs (treatment). Saliva samples were processed for cortisol using Salimetrics' High Sensitivity Salivary Cortisol ELISA kit. We used a four-parameter logistic curve linear regression in MyAssays software to compare salivary cortisol concentration differences before and after interaction. This data will provide insight on how interacting with therapy animals can affect stress levels.

RESULTS: Participants scored significantly lower on the PSS post-test than the pre-test, $t(31)=-2.53, p=0.017$ (Fig 1). Post-hoc analyses revealed three questions with significant differences (Table 1).

Participants scored higher on the GSES on the post-test, compared to the pre-test, $t(31)=4.0, p < 0.001$ (Fig 1). Post-hoc analyses revealed four GSES questions with significant differences (Table 1).

Salivary cortisol concentrations of students decreased significantly after brief interaction with assisted therapy dogs ($t=3.385, df=28, p=0.001$; Figure 2).

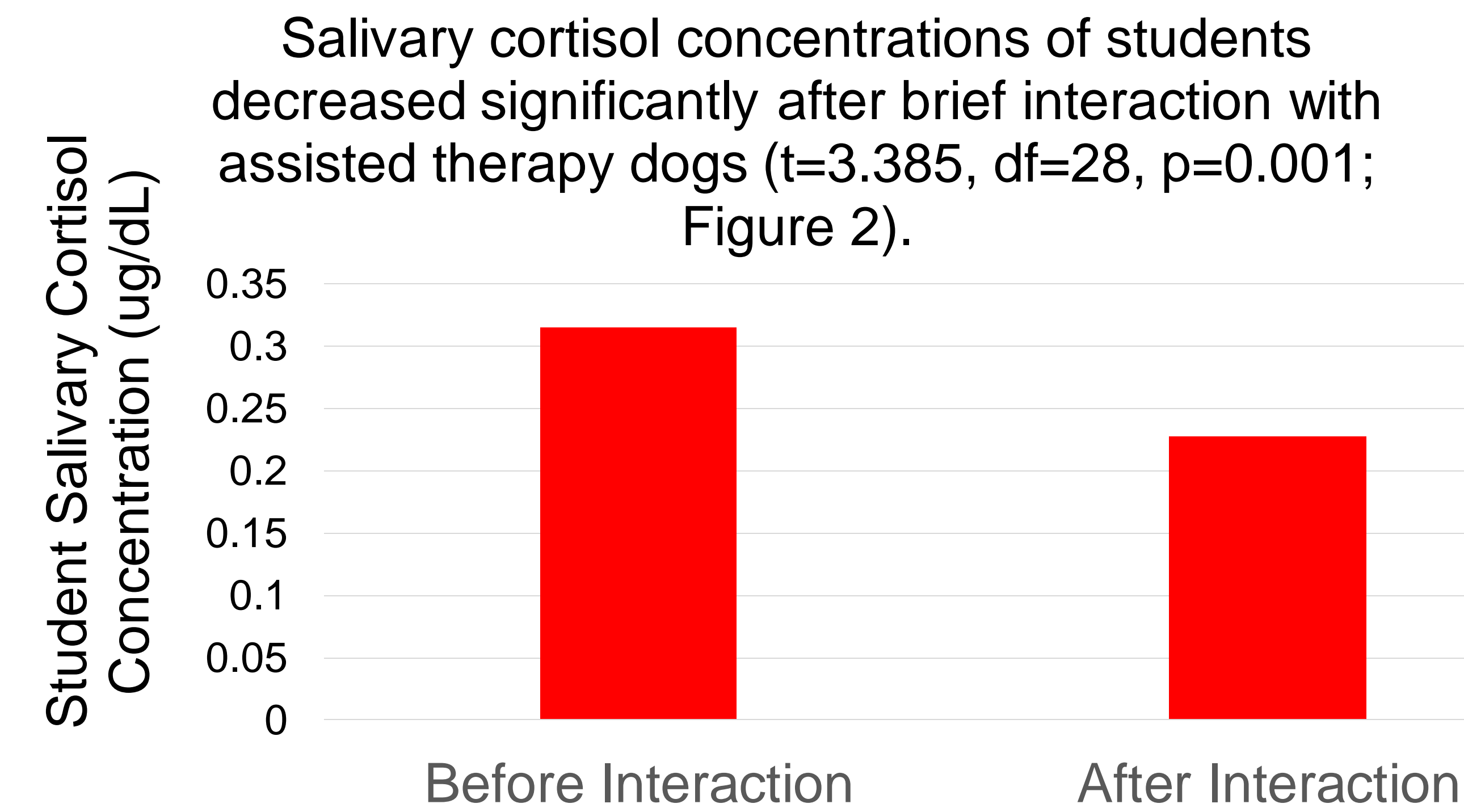


Figure 1: Total Scores on PSS & GSES Pre- and Post-Tests

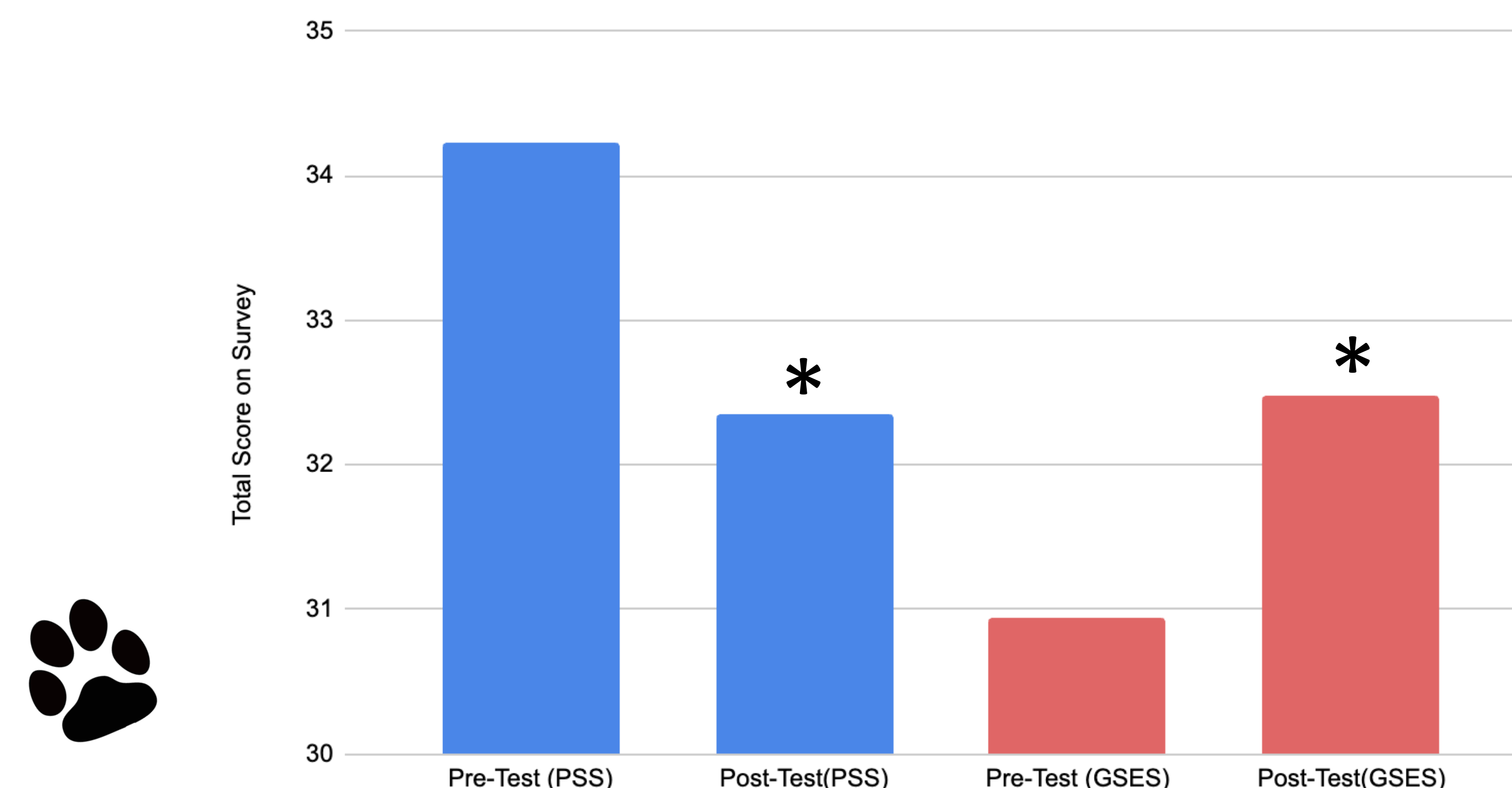


Table 1: PSS & GSES Questions with Significant Differences Pre/Post

I can always manage to solve difficult problems if I try hard enough ($p=.012$)
I am confident that I could deal efficiently with unexpected events ($p=.018$)
I can remain calm when facing difficulties because I can rely on my coping abilities ($p=.02$)
I can usually handle whatever comes my way ($p=.003$)
In the past month, how often have you been upset because something happened unexpectedly? ($p=.003$)
In the past month, how often have you felt that you were unable to control the important things in your life? ($p=.023$)
In the last month, how often have you felt nervous or "stressed"? ($p=.037$)

CONCLUSION AND DISCUSSION:

Our hypotheses were supported. After interacting with a therapy dog for 10 minutes students' cortisol levels and stress scores significantly decreased, while self-efficacy increased. Our data suggests that there are potential benefits of dog therapy programs on college campuses.

These findings are supported by Meints et al., 2022 which observed a significant reduction of cortisol in school children with and without special education needs, as compared to those with relaxation intervention, and without dog interaction.

Future research should consider the type of interaction between students and the dog, as Pendry and Vandagriff 2019 indicates a greater reduction in cortisol levels after physically handling an animal compared to just viewing.

REFERENCES

- Meints K, Brelsford VL, Dimolareva M, Maréchal L, Pennington K, Rowan E, Gee NR. 2022. Can Dogs Reduce Stress Levels in School Children? Effects of Dog-Assisted Interventions on Salivary Cortisol in Children With and Without Special Educational Needs Using Randomized Controlled Trials. PLOS ONE. 17(6):e0269333. doi:https://doi.org/10.1371/journal.pone.0269333.
- Pendry P, Vandagriff JL. 2019. Animal Visitation Program (AVP) Reduces Cortisol Levels of University Students: A Randomized Controlled Trial. SAGE. 5(2):1-12. doi:https://doi.org/10.1177/2332858419852592.

