

The Effect of Play with Canines on Psychological and Physiologic Stress Measures in College Students



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The Effect of Play with Canines on Psychological and Physical Stress Measures in College Students

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Disclosure Statement

The authors, Drs. C. Delgado, M. Toukonen and C. Wheeler, are full time faculty at Cleveland State University School of Nursing and have no commercial interest or conflict of interest in this study and report. This study was privately funded by the researchers.

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Presentation Objectives

- This presentation will inform the participants about the growing trend of animals on campus to reduce students stress, and enhance retention and student satisfaction. Participants will be able to describe the nature and direction of the trend.
- Our research study design and results will be shared including final psychological and physiologic findings. Participants will be able to identify positive psychological and physiologic changes.
- The differences between service and support animals will be discussed, and the participants will be able to describe the difference.

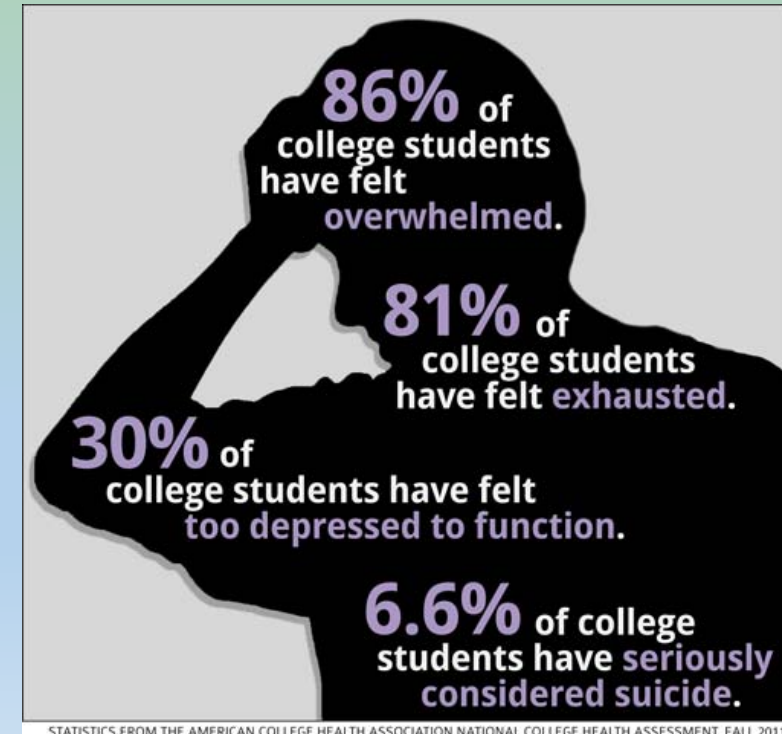
Stress cannot always be avoided

Stress can be

- positive (eustress) as when it is transformed into motivation or
- negative (distress) which is toxic to health

Students in distress

- do not learn well
- may drop out
- May fail to progress at a timely pace

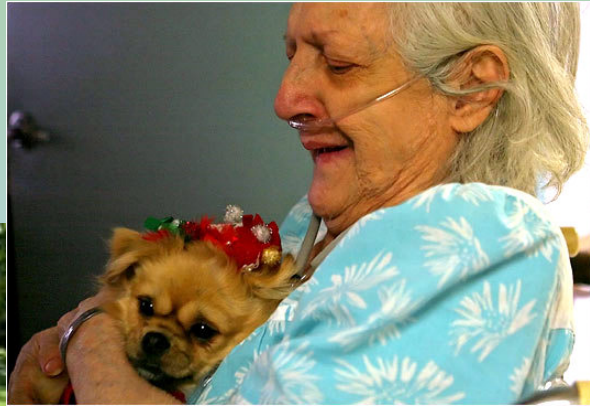


Stress Surrounds Students



- leaving home
- difficult material to master
- clinical pressures
- home/family/school balance
- time management

The human-animal bond is a phenomenon that describes the mutually supportive relationship between animals and humans. It helps explain why our pets comfort us.





More American households

- have more pets than children, and
- more American children have a dog in the home than a father.

Some people will feed their dog before they feed themselves or fill their medication prescriptions

(American Humane Society)

- Studies on the human-animal bond support effective **reductions on perceptions of stress, anxiety and loneliness.**
- In children and adolescents with emotional disorders **increased sensitivity and focus** are demonstrated.
- In non-psychiatric patients, dogs and other animals have been found to **ameliorate symptoms in heart failure, cancer, stroke and chronic pain.**



Animals Helping Humans

Service Animals

Perform specific tasks for humans

Focus on single human

Extensive training

- Eyes for the blind

- Detect impending seizures
or hypoglycemia

- Retrieve objects

- Open doors

Therapy / Support Animals

Temperament and training to
interact with many humans

Approachable and interactive

Not task focused

Calm and accepting (non-
judgmental acceptance as in
Bowlby's Attachment Theory)

In studies with college students and animals...

- loneliness, homesickness and anxiety was reduced and anecdotal evidence of reduced student stress existed,
- but two studies looking at physiologic stress found no significant reductions.

We decided to look at this again.



Research Question and Plan

Will interaction with an animal affect student stress?

H_0 : Short interactions with a therapy dog will not reduce stress for students.

H_1 : Short interactions with a therapy dog will reduce stress for students.

Design: Quantitative one sample, pre and post test using both psychological and physiologic measures.

Participants

- Sample: Students from an urban public university during final exam week.
 - Inclusion: Not allergic or afraid of dogs
 - Exclusion: Students taking hormone medications such as steroids or oral contraceptives or who were immunosuppressed
- Recruitment: Posters and visits to classrooms

IRB



Approval by the Institutional Research Board for Human Subjects was obtained prior to data collection. All participants were volunteers and signed an informed consent.

Study discussed and reviewed by IACUC, which oversees studies with animals.

- Animals were the treatment, not the subjects of research.
- Advice was valuable as a guideline to protect our human participants and animal therapists.
- A biting protocol was established but not needed during the study.

Volunteers scheduled a half hour appointment to interact with a canine during a three hour period prior to one of their final exams. Limited demographic information was collected.

Psychological Measures:

- Modified Perceived Stress Scale
- VAS (stress, anger, confusion and sadness)

Physiological Measures:

- BP and pulse
- Salivary cortisol

Following a 15-20 minute interaction with a canine, all tests were repeated.

Data were collected during finals week in May and December 2016.

Dogs in the Study



- Six different dogs were used in the study, all were certified or eligible for certification as therapy dogs.
- Owners served as handlers and had the power to terminate an interaction at any time for the dog's or the human's safety.
- Students were coached in approved interactions (play, petting, holding, picking up only the small dogs and talking to the dogs). If tired, a dog was rested before further interactions.

Data Analysis

- Salivary cortisol levels were analyzed by a commercial lab.
 - Serum and salivary levels correlate well, salivary samples are less invasive and less likely to affect the student stress levels in collection.
- SPSS -22 used for statistical analysis
- Methods:
 - Descriptive and frequency statistics were used to describe the sample
 - Repeated t-test comparisons of means were used to analyze pre and post test data.

Data Security and Privacy

- Data stored on a password protected flash drive in a locked file in the PI office.
- Because the participants were known to the faculty as students, but not necessarily personally familiar, efforts were made to protect confidentiality.
- Removal of personal identifiers and the use of study specific codes for ID and matching of pre and post test data.
- Using private areas for interactions and testing

Results: Final N = 48

Demographics

Women	41 (85.4%)
Men	7 (14.6%)
Age	18-57 years, Mean= 24.17
Nursing Major	48%
Health Sciences Major	21%
Other Majors	31%
(Anthropology, Business, Education, Theater, Biology, English)	

Psychological Measures

Psychological Instrument	n*	Pre test mean score	Post test mean score	Sig (2 tailed)
Perceived Stress Scale	44	26.363	22.955	0.0001
VAS Stress	48	67.979	37.326	0.0001
VAS anger	48	21.646	8.522	0.0001
VAS confusion	48	28.646	12.087	0.0001
VAS sadness	48	34.958	12.435	0.0001

* Variable n reflects missing or incomplete data; p = <0.05

Physiologic Measures

Physiologic Measure	n*	Pre test mean	Post test mean	Sig (2 tailed)
Systolic BP	47	131.09	122.79	0.000
Diastolic BP	47	81.72	80.02	0.104
Pulse	47	80.68	76.83	0.039
Salivary Cortisol	48	0.26329	0.20585	0.015

* Variable n results from missing or incomplete data; $p < 0.05$

Implications and Recommendations

- Using dogs and other animals university settings to create a more homelike and welcoming community for students.
- Interactions with dogs modified stress and positively affected mood in college students. Physiologic changes were also positive. This supports animal assisted therapy as an effective stress management strategy for college students.
- The Americans with Disabilities Act and the Fair Housing Act allows service animals when the animal serves a person with a diagnosed disability. These animals are universally accepted, but support animals are not as well recognized as service animals.

Pets on campus are attracting the attention of university administrators who wish to promote retention and student satisfaction. According to a report in Forbes Magazine, they are an “emerging norm”.



Universities and Colleges that have Animal Therapy Programs

- UCal Berkeley
- Cal Tech
- Case Western Reserve University
- Eckerd College
- Harvard
- Johnson and Wales
- Kent State University
- MIT
- Principia College
- Stetson University
- University of Idaho
- University of Illinois
- University of Florida
- University of Northern Colorado
- University of Washington
- Washington and Jefferson College

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