The Efficacy of Pet Therapy in Pre-Licensure Nursing Students, Test Anxiety

Amy M. Richards, PhD, RN-BC PMH

"The fear of failure is the basis of test anxiety, which is a common thread among students".

Anxiety and Depression Association of America, 2015

Significance of Anxiety

- One in six college students have been treated for anxiety
- Nursing school is competitive
- Exams measure student's success

Problem

Nursing school anxiety can be so immense that it may disrupt a student's ability to demonstrate their knowledge. This may put them at risk for poor academic performance.

Prato & Yucha, 2013

Pet Therapy in Nursing

Florence Nightingale, nursing's first leader, wrote in her 1898 book *Notes in Nursing . . .*

"a small pet is often an excellent companion for the sick, for long chronic cases especially."

Therapy Dogs

1. When humans pet a dog, endorphin, prolactin, dopamine, oxytocin, and beta phenylethylamine are released (Meadows, 2003)
2. Pet therapy can reduce blood pressure, decrease anxiety, and promote relaxation

Research Question

Will the anxiety level of nursing students be lessened by allowing an interaction between the student and a therapy dog before a nursing examination is taken?

Assumptions

1. It was assumed that the research participants will answer honestly
2. It was assumed that the participants were self-aware of known pet allergies or fear of dogs

Foundational Framework

Roger's Theory of Unitary Human Beings is the existence of the belief that a person and their environment are enmeshed and important to each other. This union is mutually enriching.

-Rogers, 1970

Theory Application

- Nurses strive to create a therapeutic and healing environment for our patients.
- Educators strive to create an environment that invites all students to succeed.

Literature Review

Pet Relationships:

- Domesticated the dog 35,000 years ago
- History states dogs were companions who guided humans in the afterlife
- Greek literature wrote of Odysseus and his dog, Argus
- Pet oriented psychotherapy with peds patients was research by Levinson, 1969

Test Anxiety

- 30% of nursing students have high test anxiety
- Academic stress caused by worrying about grades and testing
- Using stress reducing measures may allow for better academic achievement
- Pet therapy is a benefit to students with a low cost to colleges

Psychological Benefits

- Therapy dogs in schools reduced anxiety in young students
- Disaster workers use animals to relieve the suffering of humans
- Animal therapy decreases stress for those with mental health disorders
- Depressed patients had fewer symptoms with animal-assisted therapy
- Mentally ill had a decrease in anxiety with pet therapy

Physical Benefits

- Release of hormones occurs which increase relaxation and decreases stress
- Endorphins are released due to the biochemical result of positive child-dog interaction
- Survival rates were longer after an MI if the patients were pet owners

Animals in Diverse Environments

1. In the workplace
2. Outside the Western culture
3. Diversity in animals used
4. Animals in schools
5. Homeless environments

Barriers to Pet Therapy

- Zoonotic infections
- Animal bites and scratches
- Acceptance of animals in all cultures
- Ethical treatment of animals

Research Study and Design

Design:	Quantitative, controlled experiment
Variables:	Independent is pet therapy
	Dependent is the level of anxiety along with age and gender
Population:	Medium sized, rural university
Sampling:	100, 1st semester students

Instrument

The Beck Level of Anxiety Inventory will be used. It is a measure of self-assessment which assesses an individual's anxiety level on a scale of 0-36. A score of zero reflects no anxiety and a score of 36 indicates severe anxiety.

Advantages

- ✓ Is a tool which obtains a baseline level of anxiety as a diagnostic tool to measure the effectiveness of treatment.
- ✓ It takes only 5-10 minutes to complete
- ✓ It may be repeated
- ✓ It can be used in different languages and in different cultures.

Disadvantages

- May not detect sensitive symptoms
- May need to separate by gender and by differences in ethnicity and socioeconomic variations

Procedure

1. Assignment of participants to treatment and non-treatment groups
2. Assigned Group A to therapy dog room and assigned Group B to the control room. First BAI test given.

3. Both groups were be given refreshments and allowed to study independently

4. After 50 minutes, the students were asked to take the BAI for the second time and then proceed to the testing room.

DESIGN

This research study is a quantitative, controlled experiment involving nursing subjects from a class of 100 nursing students. It is a non-random, convenience sampling. The assignment of the intervention of pet therapy was random.

Using a Likert-scale, the variables were computed by adding the responses to a defined number of questions. An analysis of variance (ANOVA) was used for there is only one independent variable, pet therapy, and several dependent variables including level of anxiety, age and gender.

The independent variable in this study is pet therapy,
which will be the presence of 1-2 companion/therapeutic dogs per 15 students.

The dependent variables for this research study was the level of anxiety along with age and gender.

The level of anxiety was measured
using a Likert Scale with the Becks Level of Anxiety Inventory (BAI).

Demographic Variables

Group A, which interacted with therapy Dogs, consisted of 30 participants (*n* = 30, 54%) and the No Dog, Group B (*n* = 25, 46%) was slightly smaller in size.

The majority of participants were Female (89%) and were in the 18 to 24 (61%) age group.

Those without an allergy to dogs were the majority (*n* = 55, 98%) and participants who revealed that they did not take antianxiety medication were the majority at 84%.

Table 1

Frequency Table for Demographic Variables

Variable	n	%
PRE_Dog		
Dog	30	53.57
No dog	26	46.43
Missing	0	0.00
PRE_Gender		
Female	50	89.29
Male	6	10.71
Missing	0	0.00
PRE_Age		
18 to 24	34	60.71
25 to 31	9	16.07
32 to 38	9	16.07
39 to 43	1	1.79
44 to 50	2	3.57
51 to 57	1	1.79
Missing	0	0.00
PRE_Dog_allergy		
No	55	98.21
Yes	1	1.79
Missing	0	0.00
PRE_Antianxiety_meds		
No	47	83.93
Yes	9	16.07

Frequency Table for Demographic Variables

Variable	Dog	No dog
PRE_Gender		
Female	28 (50%)	22 (39%)
Male	2 (4%)	4 (7%)
PRE_Age		
18 to 24	18 (32%)	16 (29%)
25 to 31	5 (9%)	4 (7%)
32 to 38	5 (9%)	4 (7%)
39 to 43	0 (0%)	1 (2%)
44 to 50	2 (4%)	0 (0%)
51 to 57	0 (0%)	1 (2%)
PRE_Dog_allergy		
No	29 (52%)	26 (46%)
Yes	1 (2%)	0 (0%)
PRE_Antianxiety_meds		
No	28 (50%)	19 (34%)
Yes	2 (4%)	7 (12%)
PRE_Mental_Illness		
No	27 (48%)	23 (41%)
Yes	3 (5%)	3 (5%)

- The next slide presents means and standard deviations for each factor level combination and row and column totals. Both age groups had a decrease in anxiety after leaving their assigned classrooms.

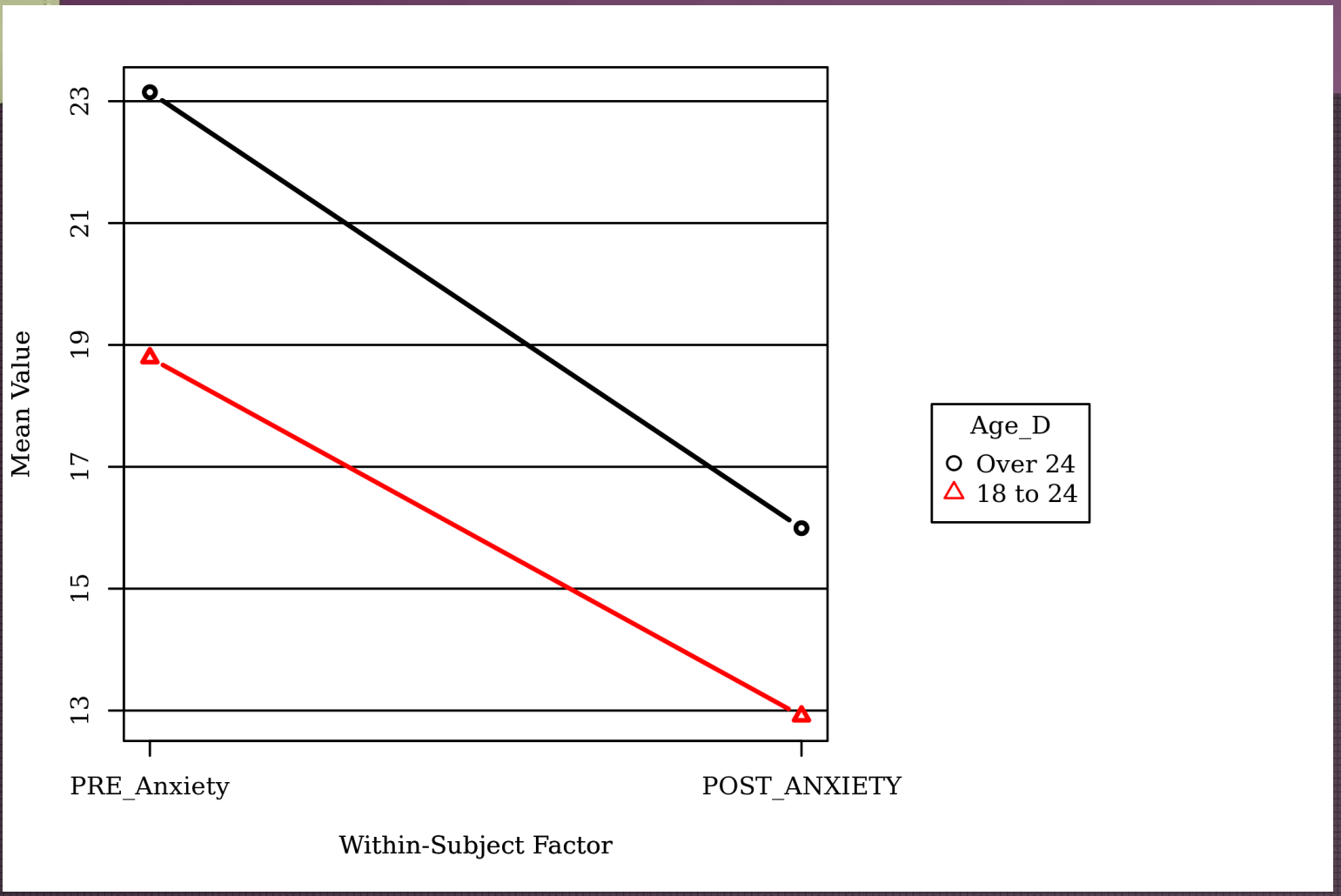
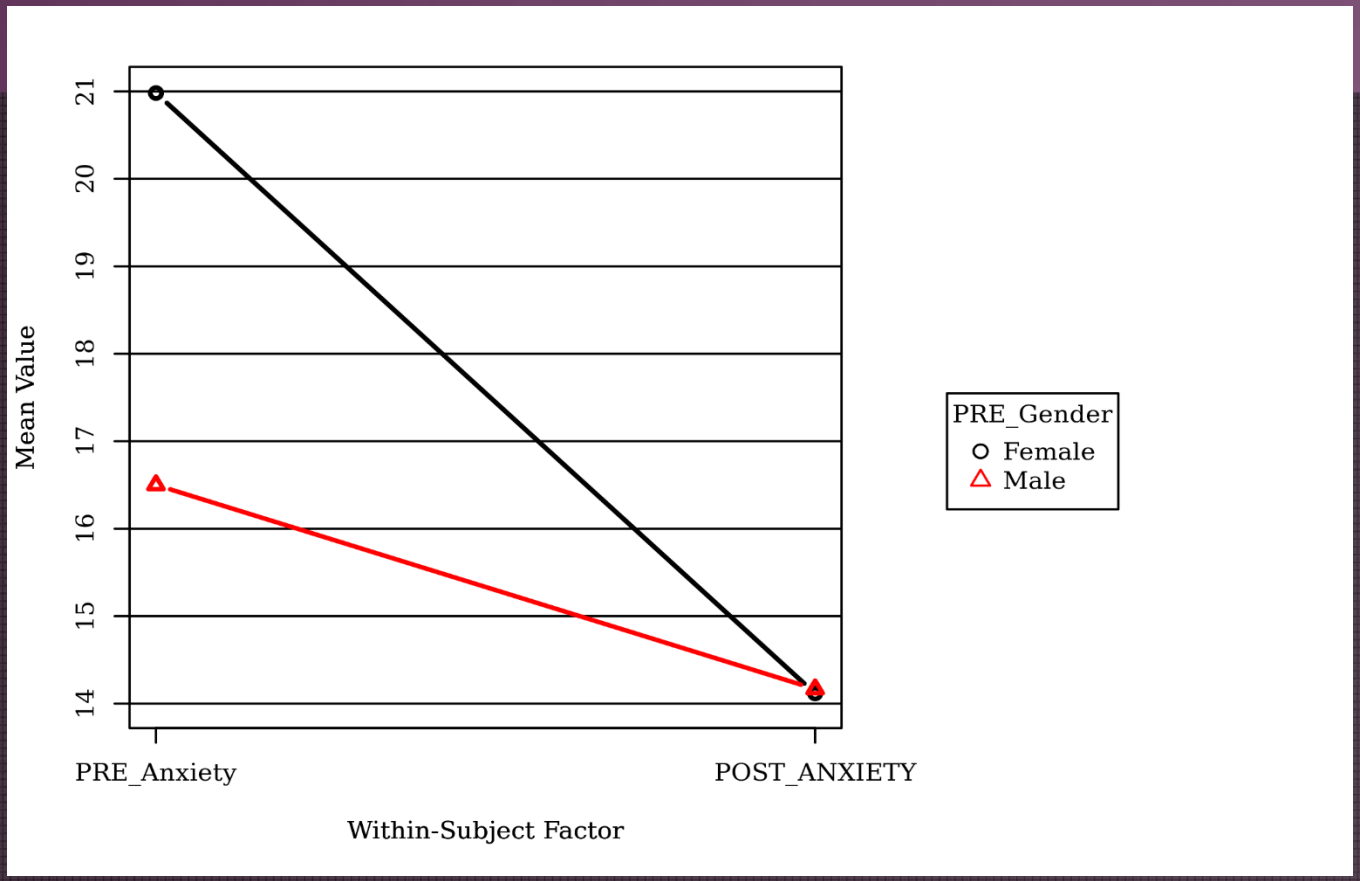


Figure 1. Dependent variable means by Age_D.

- The following chart presents means and standard deviations for each factor level combination and row and column totals. Both females and males experienced a decrease in anxiety from PRE to POST, although females reported an initial, higher level of anxiety. This graph reflects a higher level of anxiety in both the males and females which decreases with the POST BAI. Although females initially reported their anxiety as higher than males, the anxiety levels of both decreased.



Dependent variable means by Pre_Gender

Did anxiety decrease?

One-Within One-Between ANOVA: Dog

A mixed model analysis of variance (ANOVA) was conducted to determine whether significant differences exist in PRE_Anxiety and POST_ANXIETY between the levels of PRE_Dog.

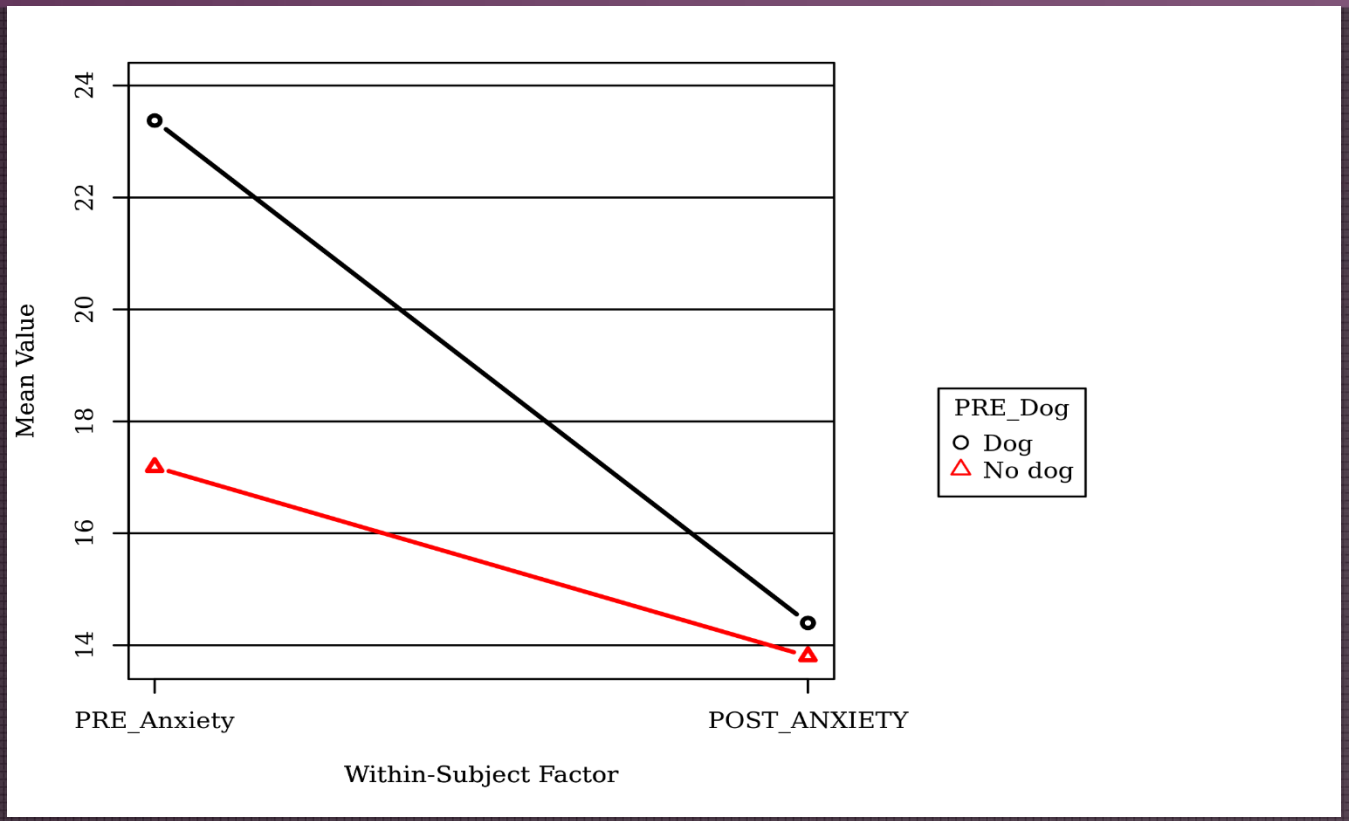
Results

The main effect for the within-subjects factor was significant $F(1, 54) = 26.31$, $p < .001$, indicating there were significant differences between the values of PRE_Anxiety and POST_ANXIETY. The interaction effect between the within-subjects factor and PRE_Dog was significant $F(1, 54) = 5.39$, $p = .024$, indicating differences among the values of PRE_Anxiety, POST_ANXIETY, and levels of PRE_Dog.

Means and Standard Deviations for Factor Level Combinations

Note. Standard deviations in parentheses.

	PRE_Anxiety	POST_ANXIETY	Row Average
Dog	23.38 (12.32)	14.40 (11.64)	18.89 (12.71)
No dog	17.18 (10.49)	13.80 (8.90)	15.49 (9.78)
Column Average	20.50 (11.82)	14.12 (10.37)	17.31 (11.52)



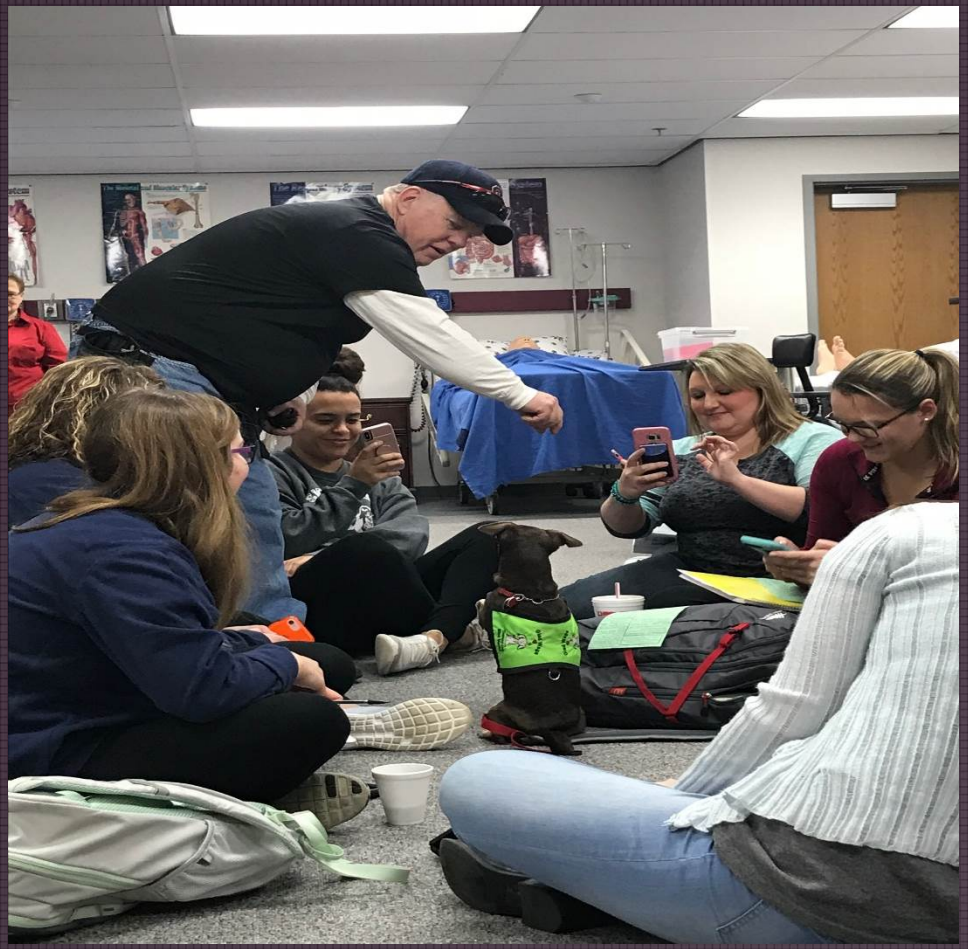
- *Figure 3*. Dependent variable means by PRE_Dog.

In summary, the participants were divided into two, equal, randomized groups. Both groups were similar in number for age and gender. Both groups identified their anxiety level using the Becks Anxiety Inventory tool prior to entering their assigned room. The age 18 to 24 group began with lesser pre-anxiety than the over 24 age group. Males had less PRE anxiety than females.

Upon leaving the Dog room, participants yielded a significant decrease in anxiety on the exit BAI scores. This would indicate that the presence and interaction with therapy dogs impacted the participants. The impact of the dogs resulted in a lessened degree of anxiety

Upon leaving the No Dog room, participants yielded a decrease in anxiety on the exit BAI scores. This could indicate that spending an hour studying in a quiet room had a slight effect on the participants. This slightly lessened their anxiety, per their BAI scores.

In comparison, the Dog group had a significant decrease in anxiety after interacting with the therapy dogs for sixty minutes prior to taking an examination.



Thank you