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Dung N. Nguyentran  
*Virginia Commonwealth University*

Marlene A. Michniak  
*Virginia Commonwealth University*

James J. Jung  
*Virginia Commonwealth University*

Christine Q. Do  
*Virginia Commonwealth University*

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The Effects of Pet Ownership on Anxiety and Depression Among Trauma-Exposed College Students

Marlene Michniak1, Dung Nguyentran2,3, James Jung2, Christine Do2, Amy Adkins, Ph.D.3, Danielle Dick, Ph.D.3,4, Sandra Barker, Ph.D.5, Megan Cooke6, Jeanne Savage6

1Department of Chemistry, 2Department of Biology, 3Department of Psychology, 4Department of African American Studies, 5Center for Human-Animal Interaction (CHAI), 6Center for Clinical & Translational Research

Introduction

There are various benefits to owning a pet, including improved physical and mental health, aiding the recovery process, support, and comfort6. In one particular study, veterans reported feeling calmer, less lonely, less depressed, and less worried, as well as having exercised more compared to non pet owners5. In different settings such as hospitals, pets have been reported to decrease distress in children who have been operated on2. Additionally, when evaluating college students in pet therapy settings, studies report that pets provide support and comfort during stressful times.

Research question: How does pet ownership affect levels of anxiety and depression among those who have experienced a traumatic event?

Hypothesis: We hypothesize that among students who have experienced a traumatic event, pet owners will have lower levels of anxiety and depression.

Methods

Spit for Science: VCU-wide, longitudinal research initiative that wants to better understand how genetic and environmental factors come together to influence a variety of health-related outcomes in the VCU undergraduate population.

Total Sample (N)= 547. 392 pet-owners and 155 non-owners
● Restricted to students exposed to a traumatic event: Since beginning college, have they experienced a physical/sexual assault (or other unwanted sexual experiences) or transportation accident
  ○ Survey was taken during the 2011 cohort’s junior (third) year
Independent variable: ownership of a pet (or not)
  ○ “Did you grow up with a dog/cat/other pet?”
  ○ Restricted to pet owners that were highly attached to their pets; >60 on a scale from 0-100

Dependent variable: levels of anxiety or depression
● Using the Symptom Checklist—90—(Derogatis & Cleary, 1977)
  ○ Anxiety/depression: Symptoms like “nervousness or shakiness inside,” “spells of terror or panic,” “feeling blue,” and “feeling no interest in things” in the past 30 days
  ○ Sum score was used

Statistical test used: Linear Regression

Results

After the initial linear regression, the results indicated that pet owners had on average 0.824 more symptoms of anxiety/depression than that of non-pet owners. These results were not statistically significant (P=0.176, R²=0.003) and contradict literature.

Table 1: Preliminary linear regression output for pet ownership on anxiety/depression symptoms

<table>
<thead>
<tr>
<th>Factor</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-0.05</td>
<td>0.03</td>
<td>0.25</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>0.01</td>
<td>0.002</td>
<td>0.19</td>
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<tr>
<td>CD-RISC Resilience Score</td>
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<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Social support score</td>
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<td>0.02</td>
<td>0.23</td>
</tr>
<tr>
<td>BF1 Extraversion</td>
<td>0.04</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>BF1 Agreeableness</td>
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<td>0.01</td>
<td>0.05</td>
</tr>
<tr>
<td>BF1 Conscientiousness</td>
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<td>0.01</td>
<td>0.16</td>
</tr>
<tr>
<td>BF1 Neuroticism</td>
<td>0.01</td>
<td>0.01</td>
<td>0.65</td>
</tr>
</tbody>
</table>

Final Results

After controlling for confounding factors such as gender, ethnicity, the big five personality traits, social support and resilience, the direction of relationship changed from positive to negative as pet owners had 2.224 fewer symptoms of anxiety/depression symptoms. These results were significant (p=0.004, R²=0.033). R² for when all covariates were considered was 0.304. The partial R² for all significant covariates were gender (R²=0.026), ethnicity (R²=0.057), neuroticism (R²=0.141) and openness (R²=0.058) (See table below)

Table 2: Preliminary linear regression output for pet ownership on anxiety/depression symptoms

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<td>0.23</td>
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<tr>
<td>BF1 Neuroticism</td>
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<td>0.01</td>
<td>0.68</td>
</tr>
</tbody>
</table>

Discussion

Using pet-ownership as the sole criteria for discerning anxiety/depression levels can be misleading. There are confounding variables that were accounted for in the initial linear regression and were more realistically accounted for in the second linear regression. Further confounding factors may exist, but the ones most likely to affect our population were selected: gender, race/ethnicity, personality, social support and resilience. Only gender, ethnicity and personality traits openness and neuroticism, was found to be significant (p<0.001, p<0.02, p<0.04). Neuroticism is known to predict anxiety/depression7. When these selected confounding factors were analyzed in relation to our research question, it was shown that pet owners experienced a lower mean difference in anxiety and depression symptoms.

Conclusions

The main intention of this research was to determine how pet ownership affects anxiety/depression and in doing so, support the potential therapeutic benefits pet-ownership may offer in the clinics/hospitals sector to mental health as well as the workplace. It was hypothesized that pet ownership would be associated with fewer symptoms of anxiety and depression. The VCU student population who participated in Spit for Science questionnaire in their junior year provided a representative dataset.

Findings:
● Findings: The initial linear regression indicated that pet-ownership had a higher mean difference in anxiety/depression (contrary to the literature).
● However, a second linear regression which considered confounding factors such as gender, race/ethnicity, personality, social support and resilience showed that pet-ownership had a significantly lower mean difference in anxiety/depression. The confounding factors found to significantly impact our results being neuroticism, a known predictor of anxiety and depression, and openness.

Implications:
● Pet ownership is associated with fewer symptoms of anxiety and depression among trauma-exposed students, but can this relationship be confounded by many variables.

Future Directions:
● To determine the extent to which neuroticism and openness contribute to anxiety/depression or to explore confounding factors such as pet attachment and duration of pet ownership that were not addressed.

References

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We would like to thank the VCU students for providing valuable data on the project, and to the CHAI students for their support. Special thanks to Megan Cooke and Jeanne Savage for their support. This work was supported by the Office of Research and Economic Development, Virginia Commonwealth University, and the Center for Human-Animal Interaction.

Students: Participated in the survey and experienced a traumatic event (or other unwanted sexual experiences) and transportation accident

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Visitors should take the time to read this article from Frontiers magazine, and we look forward to your comments and feedback.

Order of events - pet ownership

Participants indicated that they were STRONGLY attached to the pets

Most likely relationship will show that there is an affect on mental health

Duration of Pet ownership is not known

Weaknesses

Only targeted VCU college students

Only used surveys

Strenghts

Large population

547 of people who answered the survey and experienced trauma

Diverse Sample

Wide range of ethnic groups, men and women

Post-Operative Benefits of Animal-Assisted Therapy in...