

5-2021

The Effect of Companion Animals on the Mental Health of College Students During the COVID-19 Pandemic

Sarah E. Cooper

Dominican University of California

<https://doi.org/10.33015/dominican.edu/2021.GBH.ST.01>

Survey: Let us know how this paper benefits you.

Recommended Citation

Cooper, Sarah E., "The Effect of Companion Animals on the Mental Health of College Students During the COVID-19 Pandemic" (2021). *Global Public Health | Senior Theses*. 7. <https://doi.org/10.33015/dominican.edu/2021.GBH.ST.01>

This Senior Thesis is brought to you for free and open access by the Department of Global Public Health at Dominican Scholar. It has been accepted for inclusion in Global Public Health | Senior Theses by an authorized administrator of Dominican Scholar. For more information, please contact michael.pujals@dominican.edu.

**The Effect of Companion Animals on the Mental Health of
College Students During the COVID-19 Pandemic**

Sarah E. Cooper

Dominican University of California

Abstract

Background: The COVID-19 pandemic has increased the burden of mental illness in the United States, especially among young adults (Czeisler et. al., 2020).

Objective: The purpose of this study is to determine whether pet ownership has an effect on the mental health, specifically depression and anxiety, of students at Dominican University of California during COVID-19.

Methods: This study was a cross-sectional quantitative survey that included demographic questions as well as questions developed from modified questions from validated survey items. Data was collected on whether participants owned or lived with any pets. Participants who answered “yes” were asked whether the companion animal(s) were a source of consistency, promote exercise, and help the participant cope with COVID-19. All participants were asked the seven mental health questions taken from the Depression Anxiety Stress Scale-21. Participants were recruited from Dominican University of California. A total of 70 individuals participated in the survey, 10 responses were omitted from the results because the individuals did not complete the mental health portion of the survey. The data was analyzed using SPSS Statistics (version 26).

Results: The median age of pet owners was 21.58 (S.D. 3.96). The cumulative mental health score of pet owners was 8.42 (S.D. 4.58). The cumulative mental health score of non-pet owners was 10.14 (S.D. 4.98). The difference between the cumulative mental health scores of pet owners and non-pet owners was not statistically significant (1.35 (58), 0.18).

INTRODUCTION

COVID-19 was first identified in Wuhan, China in December of 2019. COVID-19 is the disease caused by a novel coronavirus (SARS-CoV-2), which has not been seen in humans before this pandemic. (CDC, 2020a). COVID-19 spreads through close contact, namely through respiratory droplets. Respiratory droplets are produced when an individual talks, breathes, or coughs. These droplets can range in size from large, visible to the eye, to much smaller droplets. Larger droplets do not travel as far as the smaller droplets due to gravity. However, the smaller droplets are able to spread apart in the air and dissipate (CDC, 2020b). In order to slow the spread of the virus, several non-pharmaceutical interventions have been suggested and implemented. Some of these interventions include wearing a mask, staying at least six feet away from others, and avoiding crowds (CDC, 2021).

Life has looked a lot different for most since mid-March 2020. The World Health Organization declared COVID-19 a pandemic on March 11, 2020 and California issued their state-wide stay-at-home order on the 19th (AJMC, 2021). On August 28, 2020, California modified their stay-at-home orders and created the Blueprint for a Safer Economy. These restrictions allow for the gradual reopening of businesses and activities (State of California, 2021). While these restrictions are helpful in slowing the spread of COVID-19 they are also disruptive when it comes to people's ability to interact with each other and live their lives as they are accustomed to.

The COVID-19 pandemic has increased the burden of mental illness in the United States, especially among young adults (Czeisler et. al., 2020). Some of stressors that may be

contributing to this increase include confinement, loss of routine, and loss of social and physical contact brought on by COVID-19 restrictions (Hoy-Gerlack et. al. 2020). Humans are social by nature; we are hard-wired to connect and interact with each other. Animal companionship can be used as a way to reduce the feelings of loneliness and isolation that accompany the COVID-19 pandemic (Hoy-Gerlack et. al. 2020). Previous studies have shown that companion animals have emotional and psychological benefits, such as providing comfort, affection, and motivation (Hoy-Gerlack et. al. 2020; Brooks et. al., 2018). A study done in the United Kingdom looked at human-animal relationships and interactions during the COVID-19 lockdown and links with mental health and loneliness. The researchers found that companion animals were an important source of emotional support during the COVID-19 lockdown and that the strength of the human-animal bond was not significantly different between species (Ratschen et. al., 2020).

The purpose of this study is to determine if there is a connection between owning a companion animal and mental health during the COVID-19 pandemic, specifically among college students.

METHODS

Study Design and Participants

This study was a cross-sectional quantitative survey. The study participants were college students enrolled at Dominican University of California, a small liberal arts institution in the San Francisco Bay Area. All students currently enrolled at Dominican University were eligible to participate in this study.

Survey Measures

The questionnaire was created using basic demographic questions as well as questions developed from an aggregate of modified questions derived from validated survey items, including the Comfort from Companion Animals Scale (Zasloff, 1996), Depression Anxiety Stress Scale-21 (Lovibond & Lovibond, 1995), and another study assessing human-animal interactions during COVID-19 (Ratschen et al., 2020).

Demographic Data

Demographic data was collected regarding participants' age, gender, living situation (e.g., on campus, off campus with family, roommates, or alone), employment status (e.g., no job, part-time, or full-time), learning modality (e.g., all online, hybrid, all in person), and social isolation status (e.g., socially isolating or not socially isolating).

Companion Animal Ownership

Participants were asked whether they owned or lived with any pets. In follow up questions participants who answered "yes" were asked to list the type(s) of animals they own or live with as well as three additional four-point Likert scale questions regarding the potential benefits of companion animals. These three questions asked about whether the companion

animal(s) were a source of consistency, promote exercise, and help the participant cope with COVID-19.

Mental Health

Questions from the Depression Anxiety Stress Scale-21 were used to measure mental health (Lovibond & Lovibond, 1995). This scale is a four-point Likert scale (0= Did not apply at all; 3=Applied very much or most of the time). The scale was shortened from 21 questions to seven by eliminating questions that had overlap as well as eliminating questions that were irrelevant to the current study, such questions about physical responses.

Recruitment and Procedures

The questionnaire was developed using Qualtrics software and participants were college students recruited from Dominican University of California. Participants were recruited by sending links to the electronic survey to the Dominican student life newsletter and classes. Prospective participants followed the link to the questionnaire where there was an electronic consent form. Consent was indicated by continuing with the questionnaire. The consent form outlined the purpose of the study as well as provided mental health resources if needed or desired. Responses were omitted from analysis based on level of completion. Participants who left questions blank, but responded to the mental health portion of the survey were included. Participants who did not answer the mental health portion of the survey were omitted from analysis. The study began on February 9, 2021 and concluded on March 15.

Ethics approval for this research was granted by the Institutional Review Board for Protection of Human Participants at Dominican University on December 18, 2020 (IRB Application #10920).

Statistical Analysis

After all the data was collected another variable was created for the total mental health score of each participant. This variable was created by adding up the numerical responses for each mental health question for each individual. This calculation was done in excel before the data was imported into the statistical software.

The type of pet(s) participants lived with was narrowed down into five categories. These categories included dog owners, cat owners, other types of pet owners, multiple pet owners, and multiple species owners. Individuals who responded “yes” to pet ownership but did not specify the type(s) of pets were not assigned to any of these categories. Individuals were assigned to all the categories that applied to them.

In order to analyze the relationship between the total mental health score and pet ownership (as well as the breakdown of pet ownership by type) an independent samples t-test was conducted. In order to analyze the relationship between other categorical variables and pet ownership (as well as the breakdown of pet ownership by type) Pearson’s Chi-Square test was used.

The data was analyzed using SPSS Statistics (version 26). Standard alpha levels were used to determine levels of significance, in which a p-value of less than 0.05 is considered significant.

RESULTS

Summary of Participant Demographics

A total of 70 individuals responded to the survey, however 10 of the responses were omitted from analysis because the participants did not respond to the mental health portion of the survey. Of the 60 participants included in analysis, 54 were female (90%). The greatest portion of the participants were 21 years-old (31.4%), followed by 22-year-olds (17.6%). For housing, 30 participants (50%) reported living off campus with family, 18 (30%) reported living off campus with roommates, 9 (15%) reported living on campus, and 3 (5%) reported living off campus alone. For employment, 34 participants (56.7%) reported having a part-time job, 19 (31.7%) reported not having a job, and 7 (11.7%) reported having a full-time job. For learning modality, 38 participants (63.3%) reported taking all their classes online. None of the participants reported taking all of their classes in person. For social isolation status, 39 participants (65%) reported socially isolating. For pet ownership, 38 participants (63.3%) reported owning a pet or living with an animal.

Summary of Companion Animal Ownership

Of the 38 participants that responded “yes” to pet ownership, 24 (75%) reported owning a dog, 12 (37.5%) reported owning a cat, 11 (34.4%) reported owning another type of pet, 14 (43.8%) reported owning multiple pets, and 11 (34.4%) reported owning multiple species. The

data showed a statistically significant relationship between multiple species ownership and individuals reporting that their pets were a source of exercise (9.31 (3), 0.03). This result is also trending toward significance for dog ownership (7.31 (3), 0.06) and other pet ownership (7.98 (3), 0.05). The same cannot be said for cat ownership (0.98 (3), 0.81) and multiple pet ownership (4.87 (3), 0.18). None of the other questions assessing pet/owner relationships showed significance in this study.

Animals and Mental Health during COVID-19 Lockdown

The mean total mental health score of pet owners was 8.42 (S.D. 4.58), while the mean total mental health score of non-pet owners was 10.14 (S.D. 4.98). This difference in means is not significantly significant (1.35 (58), 0.18). The mean total mental health score of dog owners was 24 (S.D. 6.92), while the mean total mental health score of non-dog owners was 8 (S.S. 11.00). This difference in means is statistically significant (2.32 (30), 0.03). Individuals who reported owning multiple pets were more likely to report feeling close to panic than those who did not report owning multiple pets (8.30 (3), 0.04). Individuals who reported owning multiple species were more likely to report finding it hard to wind down (8.43 (3), 0.04), as were cat owners (10.95 (3), 0.01). Individuals who reported owning dogs were more likely to report feeling like they were using a lot of nervous energy than non-dog owners (18.49 (3), <0.0001). Dog owners were also more likely to report feeling like they had nothing to look forward to (9.16 (3), 0.03).

DISCUSSION

This study aimed to look at the relationship between companion animal ownership and the mental health of college students during the COVID-19 pandemic.

The results of this study are not aligned with the results of previous studies and research. Previous research has posed that companion animals provide emotional and psychological support (Hoy-Gerlack et. al. 2020; Brooks et. al., 2018). The UK study on the relationship between companion animal ownership and mental health, for example, found that companion animal ownership during the COVID-19 lockdown was beneficial for mental health (Ratschen et. al., 2020). Based on this previous research I had expected participants that reported owning pets to also report better mental health outcomes.

The results of this study showed that pet owners did not have better mental health outcomes than non-pet owners. In some aspects the mental health of pet owners fared worse than non-pet owners. Dog owners in particular had more negative mental health outcomes, such as higher mean total mental health score, feeling that they were using a lot of nervous energy, and feeling like they have nothing to look forward to. Multiple species and cat owners also reported finding it hard to wind down. While the results did not show a benefit for the mental health of college students, it did show that for multiple pet owners, and to a lesser extent dog and other pet owners, an individual's pet(s) were a source of exercise.

This study had several limitations. The first being that it was a cross-sectional study. The data represents a "snapshot" in time. I did not collect data on the mental health of participants before the COVID-19 pandemic. The sample size of this study was also small at only 60. This 60 also does not accurately represent Dominican University as a whole. The majority of participants

were recruited through the classes I was enrolled in and therefore the sample size is skewed toward older students enrolled in public health or psychology classes.

Further studies are needed to look at why the discrepancy in results between this study and previous studies has occurred. Since the discrepancy was most likely caused by the small and limited sample size, this can be achieved by increasing the sample size and opening the research to students at multiple universities. It would also be interesting to add a section to the survey for mental health prior to the COVID-19 pandemic as well as stress factors that come with owning a pet (i.e., financial, food, responsibility).

References

- AJMC. (2021, January 1). A Timeline of COVID-19 Developments in 2020.
<https://www.ajmc.com/view/a-timeline-of-covid19-developments-in-2020>
- Brooks, H. L., Rushton, K., Lovell, K., Bee, P., Walker, L., Grant, L., & Rogers, A. (2018). The power of support from companion animals for people living with mental health problems: a systematic review and narrative synthesis of the evidence. *BMC Psychiatry, 18*(31).
<https://doi.org/10.1186/s12888-018-1613-2>
- CDC. (2020a, September 1). About COVID-19.
<https://www.cdc.gov/coronavirus/2019-ncov/cdcresponse/about-COVID-19.html>
- CDC. (2020b, October 28). How COVID-19 Spreads.
<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html>
- CDC. (2021, March 8). How to Protect Yourself & Others.
<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html>
- Czeisler, M. E., Lane, R. I., Petrosky, E., et. al. Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic - United States, June 24-30, 2020. *Morbidity and Mortality Weekly Report 2020*(69), 1049-1057.
<https://doi.org/10.15585/mmwr.mm6932a1>
- Hoy-Gerlach, J., Rauktis, M., & Newhill, C. (2020). (Non-human) Animal Companionship: A Crucial Support for People During the COVID-19 Pandemic. *Society Register, 4*(2), 109-120. <https://doi.org/10.14746/sr.2020.4.2.08>
- Lovibond, S. H., & Lovibond, P. F. (1995). Depression Anxiety Stress Scales. PsycTESTS.

<https://doi-org.dominican.idm.oclc.org/10.1037/t01004-000>

Ratschen, E., Shoesmith, E., Shahab, L., Silva, K., Kale, D., Toner, P., Reeve, C., & Mills, D. S. (2020). Human-animal relationships and interactions during the Covid-19 lockdown phase in the UK: Investigating links with mental health and loneliness. *PLoS ONE*, *15*(9).
<https://doi.org/10.1371/journal.pone.0239397>

State of California. (2021, April 23). About COVID-19 Restrictions.

<https://covid19.ca.gov/stay-home-except-for-essential-needs/>

Zasloff, R. L. (1996). Measuring attachment to companion animals: a dog is not a cat is not a bird. *Applied Animal Behaviour Science*, *47*(1-2), 43-48. [https://doi.org/10.1016/0168-1591\(95\)01009-2](https://doi.org/10.1016/0168-1591(95)01009-2)

TECHNICAL APPENDIX

Appendix A. Tables

Table 1: Participant Demographics		N (%)
Age	18	4 (7.8)
	19	6 (11.8)
	20	8 (15.7)
	21	16 (31.4)
	22	9 (17.6)
	23	1 (2.0)
	24	0 (0.0)
	25	1 (2.0)
	26+	6 (11.8)
Gender	Male	5 (8.3)
	Female	54 (90.0)
	Prefer not to say	1 (1.7)
Living Situation	On campus housing	9 (15.0)
	Off campus housing - with family	30 (50.0)
	Off campus housing - with roommates	18 (30.0)
	Off campus housing - living alone	3 (5.0)
Employment Status	No job	19 (31.7)
	Part-time job	34 (56.7)
	Full-time job	7 (11.7)
Class Format	All online	38 (63.3)
	Hybrid	22 (36.7)
COVID-19 Social Isolation Status	Socially isolating	39 (65.0)
	Not socially isolating	21 (35.0)
Pet Ownership	No	22 (36.7)
	Yes	38 (63.3)

Table 2: Companion Animal Demographics		N (%)
	Yes	No
Dog Ownership	24 (75.0)	8 (25.0)
Cat Ownership	12 (37.5)	20 (62.5)
Pet Ownership, Other	11 (34.4)	21 (65.6)
Own Multiple Pets	14 (43.8)	18 (56.3)
Own Multiple Species	11 (34.4)	21 (65.6)

Table 3: Pet Ownership and Total Mental Health Score, mean (S.D.)			
	Yes	No	P-value
Pet Ownership	8.42 (4.58)	10.14 (4.98)	1.35 (58), 0.18
Multiple Pet Ownership	14 (6.64)	18 (8.94)	1.43 (30), 0.16
Multiple Species Ownership	11 (6.36)	21 (8.76)	1.42 (30), 0.17
Cat Ownership	12 (8.33)	20 (7.70)	-0.37 (30), 0.71
Dog Ownership	24 (6.92)	8 (11.00)	2.32 (30), 0.03
Other Pet Ownership	11 (7.55)	21 (8.14)	0.34 (30), 0.73

Table 4: "I found it hard to wind down" N (%)			
	Yes	No	P-value
Pet Ownership			
Did not apply to me at all	6 (15.80)	1 (4.50)	2.91 (3), 0.41
Applied to me to some degree or some of the time	18 (47.40)	9 (40.90)	
Applied to me to a considerable degree or a good part of the time	8 (21.10)	8 (36.40)	
Applied to me very much or most of the time	6 (15.80)	4 (18.20)	
Multiple Pet Ownership			
Did not apply to me at all	2 (14.30)	4 (22.20)	2.56 (3), 0.47
Applied to me to some degree or some of the time	7 (50.00)	8 (44.40)	
Applied to me to a considerable degree or a good part of the time	2 (14.30)	5 (27.80)	
Applied to me very much or most of the time	3 (21.40)	1 (5.60)	

Table 4: "I found it hard to wind down" N (%)			
	Yes	No	P-value
Multiple Species Ownership			
Did not apply to me at all	1 (9.10)	5 (23.80)	8.43 (3), 0.04
Applied to me to some degree or some of the time	7 (63.60)	8 (38.10)	
Applied to me to a considerable degree or a good part of the time	0 (0.00)	7 (33.30)	
Applied to me very much or most of the time	3 (27.30)	1 (4.80)	
Cat Ownership			
Did not apply to me at all	2 (16.70)	4 (20.00)	10.95 (3), 0.01
Applied to me to some degree or some of the time	6 (50.00)	9 (45.00)	
Applied to me to a considerable degree or a good part of the time	0 (0.00)	7 (35.00)	
Applied to me very much or most of the time	4 (33.30)	0 (0.00)	
Dog Ownership			
Did not apply to me at all	5 (20.80)	1 (12.50)	0.29 (3), 0.96
Applied to me to some degree or some of the time	11 (45.80)	4 (50.00)	
Applied to me to a considerable degree or a good part of the time	5 (20.80)	2 (25.00)	
Applied to me very much or most of the time	3 (12.50)	1 (12.50)	
Other Pet Ownership			
Did not apply to me at all	0 (0.00)	6 (28.60)	5.79 (3), 0.12
Applied to me to some degree or some of the time	8 (72.70)	7 (33.30)	
Applied to me to a considerable degree or a good part of the time	2 (18.20)	5 (23.80)	
Applied to me very much or most of the time	1 (9.10)	3 (14.30)	

Table 5: "I felt that I was using a lot of nervous energy" N (%)			
	Yes	No	P-value
Pet Ownership			
Did not apply to me at all	6 (15.80)	2 (9.10)	6.00 (3), 0.11
Applied to me to some degree or some of the time	17 (44.70)	5 (22.70)	
Applied to me to a considerable degree or a good part of the time	8 (21.10)	11 (50.00)	
Applied to me very much or most of the time	7 (18.40)	4 (18.20)	
Multiple Pet Ownership			
Did not apply to me at all	3 (21.40)	2 (11.10)	1.74 (3), 0.63
Applied to me to some degree or some of the time	7 (50.00)	8 (44.40)	
Applied to me to a considerable degree or a good part of the time	3 (21.40)	4 (22.20)	
Applied to me very much or most of the time	1 (7.10)	4 (22.20)	
Multiple Species Ownership			
Did not apply to me at all	3 (27.30)	2 (9.50)	4.31 (3), 0.23
Applied to me to some degree or some of the time	5 (45.50)	10 (47.60)	
Applied to me to a considerable degree or a good part of the time	3 (27.30)	4 (19.00)	
Applied to me very much or most of the time	0 (0.00)	5 (23.80)	
Cat Ownership			
Did not apply to me at all	2 (16.70)	3 (15.00)	1.44 (3), 0.70
Applied to me to some degree or some of the time	5 (41.70)	10 (50.00)	
Applied to me to a considerable degree or a good part of the time	2 (16.70)	5 (25.00)	
Applied to me very much or most of the time	3 (25.00)	2 (10.00)	
Dog Ownership			
Did not apply to me at all	4 (16.70)	1 (12.50)	18.49 (3), <0.0001
Applied to me to some degree or some of the time	13 (54.20)	2 (25.00)	
Applied to me to a considerable degree or a good part of the time	7 (29.20)	0 (0.00)	
Applied to me very much or most of the time	0 (0.00)	5 (62.50)	

Table 5: "I felt that I was using a lot of nervous energy" N (%)			
	Yes	No	P-value
Other Pet Ownership			
Did not apply to me at all	2 (18.20)	3 (14.30)	0.25 (3), 0.97
Applied to me to some degree or some of the time	5 (45.50)	10 (47.60)	
Applied to me to a considerable degree or a good part of the time	2 (18.20)	5 (23.80)	
Applied to me very much or most of the time	2 (18.20)	3 (14.30)	

Table 6: "I felt that I had nothing to look forward to" N (%)			
	Yes	No	P-value
Pet Ownership			
Did not apply to me at all	14 (37.80)	7 (31.80)	5.37 (3), 0.15
Applied to me to some degree or some of the time	13 (35.10)	10 (45.50)	
Applied to me to a considerable degree or a good part of the time	6 (16.20)	0 (0.00)	
Applied to me very much or most of the time	4 (10.80)	5 (22.70)	
Multiple Pet Ownership			
Did not apply to me at all	9 (64.30)	5 (29.40)	5.10 (3), 0.17
Applied to me to some degree or some of the time	3 (21.40)	6 (35.30)	
Applied to me to a considerable degree or a good part of the time	2 (14.30)	3 (17.60)	
Applied to me very much or most of the time	0 (0.00)	3 (17.60)	
Multiple Species Ownership			
Did not apply to me at all	7 (63.60)	7 (35.00)	3.68 (3), 0.30
Applied to me to some degree or some of the time	2 (18.20)	7 (35.00)	
Applied to me to a considerable degree or a good part of the time	2 (18.20)	3 (15.00)	
Applied to me very much or most of the time	0 (0.00)	3 (15.00)	
Cat Ownership			
Did not apply to me at all	6 (54.50)	8 (40.00)	0.89 (3), 0.83
Applied to me to some degree or some of the time	3 (27.30)	6 (30.00)	

Table 6: "I felt that I had nothing to look forward to" N (%)			
	Yes	No	P-value
Applied to me to a considerable degree or a good part of the time	1 (9.10)	4 (20.00)	
Applied to me very much or most of the time	1 (9.10)	2 (10.00)	
Dog Ownership			
Did not apply to me at all	13 (54.20)	1 (14.30)	9.16 (3), 0.03
Applied to me to some degree or some of the time	5 (20.80)	4 (57.10)	
Applied to me to a considerable degree or a good part of the time	5 (20.80)	0 (0.00)	
Applied to me very much or most of the time	1 (4.20)	2 (28.60)	
Other Pet Ownership			
Did not apply to me at all	5 (45.50)	9 (45.00)	0.85 (3), 0.84
Applied to me to some degree or some of the time	4 (36.40)	5 (25.00)	
Applied to me to a considerable degree or a good part of the time	1 (9.10)	4 (20.00)	
Applied to me very much or most of the time	1 (9.10)	2 (10.00)	

Table 7: "I felt I was close to panic" N (%)			
	Yes	No	P-value
Pet Ownership			
Did not apply to me at all	14 (36.80)	5 (22.70)	2.80 (3), 0.42
Applied to me to some degree or some of the time	14 (36.80)	7 (31.80)	
Applied to me to a considerable degree or a good part of the time	8 (21.10)	7 (31.80)	
Applied to me very much or most of the time	2 (5.30)	3 (13.60)	
Multiple Pet Ownership			
Did not apply to me at all	9 (64.30)	3 (16.70)	8.30 (3), 0.04
Applied to me to some degree or some of the time	3 (21.40)	9 (50.00)	
Applied to me to a considerable degree or a good part of the time	2 (14.30)	4 (22.20)	
Applied to me very much or most of the time	0 (0.00)	2 (11.10)	

Table 7: "I felt I was close to panic" N (%)			
	Yes	No	P-value
Multiple Species Ownership			
Did not apply to me at all	7 (63.60)	5 (23.80)	5.40 (3), 0.15
Applied to me to some degree or some of the time	3 (27.30)	9 (42.90)	
Applied to me to a considerable degree or a good part of the time	1 (9.10)	5 (23.80)	
Applied to me very much or most of the time	0 (0.00)	2 (9.50)	
Cat Ownership			
Did not apply to me at all	5 (41.70)	7 (35.00)	4.62 (3), 0.20
Applied to me to some degree or some of the time	4 (33.30)	8 (40.00)	
Applied to me to a considerable degree or a good part of the time	1 (8.30)	5 (25.00)	
Applied to me very much or most of the time	2 (16.70)	0 (0.00)	
Dog Ownership			
Did not apply to me at all	10 (41.70)	2 (25.00)	7.11 (3), 0.07
Applied to me to some degree or some of the time	10 (41.70)	2 (25.00)	
Applied to me to a considerable degree or a good part of the time	4 (16.70)	2 (25.00)	
Applied to me very much or most of the time	0 (0.00)	2 (25.00)	
Other Pet Ownership			
Did not apply to me at all	7 (63.60)	5 (23.80)	5.77 (3), 0.12
Applied to me to some degree or some of the time	2 (18.20)	10 (47.60)	
Applied to me to a considerable degree or a good part of the time	2 (18.20)	4 (19.00)	
Applied to me very much or most of the time	0 (0.00)	2 (9.50)	

Table 8: “I get more exercise because of my pet” N (%)			
	Yes	No	P-value
Multiple Pet Ownership			
Strongly Disagree	2 (14.30)	3 (16.70)	4.87 (3), 0.18
Disagree	2 (14.30)	5 (27.80)	
Agree	5 (35.70)	9 (50.00)	
Strongly Agree	5 (35.70)	1 (5.60)	
Multiple Species Ownership			
Strongly Disagree	0 (0.00)	5 (23.80)	9.31 (3), 0.03
Disagree	2 (18.20)	5 (23.80)	
Agree	4 (36.40)	10 (47.60)	
Strongly Agree	5 (45.50)	1 (4.80)	
Cat Ownership			
Strongly Disagree	2 (16.70)	3 (15.00)	0.98 (3), 0.81
Disagree	3 (25.00)	4 (20.00)	
Agree	4 (33.30)	10 (50.00)	
Strongly Agree	3 (25.00)	3 (15.00)	
Dog Ownership			
Strongly Disagree	2 (8.30)	3 (37.50)	7.31 (3), 0.06
Disagree	4 (16.70)	3 (37.50)	
Agree	12 (50.00)	2 (25.00)	
Strongly Agree	6 (25.00)	0 (0.00)	
Other Pet Ownership			
Strongly Disagree	1 (9.10)	4 (19.00)	7.98 (3), 0.05
Disagree	2 (18.20)	5 (23.80)	
Agree	3 (27.30)	11 (52.40)	
Strongly Agree	5 (45.50)	1 (4.80)	

Appendix B. Survey

Demographics

1. Age: _____ (fill in the blank)
2. Gender
 - a. Male
 - b. Female
 - c. Other: _____
3. Which best describes your living situation?
 - a. On campus housing
 - b. Off campus housing - with family
 - c. Off campus housing - with roommates
 - d. Off campus housing - living alone
4. Do you have a job?
 - a. No
 - b. Yes - part time
 - c. Yes - full time
5. What type of classes are you taking this semester?
 - a. All online
 - b. Hybrid (some online, some in-person)
 - c. All person
6. COVID-19 social isolating?
 - a. Socially isolating
 - b. Not socially isolating

Companion Animal Questions

7. Do you own a pet or live with an animal?
 - a. No
 - b. Yes
8. If yes, what type of animals _____ (fill in the blank)

If yes, please answer the following:

9. My pet is a source of consistency in my life
 - a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly Agree

10. I get more exercise because of my pet
- Strongly disagree
 - Disagree
 - Agree
 - Strongly Agree
11. My pet/animal helps me cope with COVID-19
- Strongly disagree
 - Disagree
 - Agree
 - Strongly Agree

Mental Health Questions

Please read each statement and select a number 0-3 which indicates how much the statement applies to you during the last week

- MH_1. I found it hard to wind down.
- 0 = Did not apply to me at all
 - 1 = Applied to me to some degree or some of the time
 - 2 = Applied to me to a considerable degree or a good part of the time
 - 3 = Applied to me very much or most of the time
- MH_2. I couldn't seem to experience any positive feeling at all.
- 0 = Did not apply to me at all
 - 1 = Applied to me to some degree or some of the time
 - 2 = Applied to me to a considerable degree or a good part of the time
 - 3 = Applied to me very much or most of the time
- MH_3. I found it difficult to work up the initiative to do things.
- 0 = Did not apply to me at all
 - 1 = Applied to me to some degree or some of the time
 - 2 = Applied to me to a considerable degree or a good part of the time
 - 3 = Applied to me very much or most of the time
- MH_4. I tended to over-react to situations.
- 0 = Did not apply to me at all
 - 1 = Applied to me to some degree or some of the time
 - 2 = Applied to me to a considerable degree or a good part of the time
 - 3 = Applied to me very much or most of the time
- MH_5. I felt that I was using a lot of nervous energy.
- 0 = Did not apply to me at all
 - 1 = Applied to me to some degree or some of the time
 - 2 = Applied to me to a considerable degree or a good part of the time

3 = Applied to me very much or most of the time

MH_6. I felt that I had nothing to look forward to.

0 = Did not apply to me at all

1 = Applied to me to some degree or some of the time

2 = Applied to me to a considerable degree or a good part of the time

3 = Applied to me very much or most of the time

MH_7. I felt I was close to panic.

0 = Did not apply to me at all

1 = Applied to me to some degree or some of the time

2 = Applied to me to a considerable degree or a good part of the time

3 = Applied to me very much or most of the time

Thank you for taking the time to complete this survey. If you are feeling depressed or isolated, please reach out. For help at any hour of the day, reach out to the SAMHSA's National Helpline at 1-800-662-HELP (4357). Dominican University provides counseling services to all students free of charge. To book an appointment call Counseling Services at 415) 485-3258. If you would like more information regarding mental health during the COVID-19 pandemic you can visit the following webpage.

<https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/managing-stress-anxiety.html>