# EFFECTS OF PET OWNERSHIP ON THE MENTAL HEALTH OF VETERINARY MEDICAL STUDENTS

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23

Effects Of Pet Ownership On The Mental Health Of Veterinary

Medical Students

By

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**EFFECTS OF PET OWNERSHIP ON THE MENTAL HEALTH OF VETERINARY**

**MEDICAL STUDENTS**

**ABSTRACT**

An abstract of the research paper presented to the Faculty of Veterinary Medicine, Universiti Malaysia Kelantan, in partial requirement on the course DVT55204 – Research Project.

**Abstract**: Veterinary work field is considered the highest professions to commit suicide. The study sought to explore the potential impacts of owning pets on the mental health and well-being of veterinary medical students in Malaysia, considering the unique nature of their academic and professional experiences. A cross-sectional study was conducted in one of the veterinary schools in Malaysia (FPV, UMK). The study was conducted through self-administered online questionnaire that was provided for 14 days (2 weeks). A total of eighty-two (82) respondents were recorded from first year (DVM 1) until year 5 (DVM 5) students of FPV. Data was compiled and analyzed by using Microsoft Excel and Statistical Package for Social Sciences (SPSS) for the relationship between pet ownership that may relate to human-animal attachments and depression levels. The study's findings lead to the conclusion that no statistically significant relationship exists between the variables under investigation, namely the ownership of pets ($r$=-0.068, $p$=0.541) the absence thereof among students ($r$=0.024, $p$=0.970). This indicates that, based on the collected data and analytical assessments, there is insufficient evidence to assert a meaningful association between pet ownership and the variable of interest within the studied student population.

*Keyword*: *Veterinary, Mental health, Depression, Human-animal bond, Students, Malaysia*

**EFEK PEMILIKAN HAIWAN KESAYANGAN TERHADAP KESEJAHTERAAN**

**MENTAL PELAJAR PERUBATAN VETERINAR**

**ABSTRAK**

**Abstrak**: Bidang kerja veterinar dianggap sebagai profesion paling tinggi kadar bunuh diri. Kajian ini bertujuan untuk meneroka kesan-kesan yang mungkin timbul dari pemilikan haiwan kesayangan terhadap kesihatan mental dan kesejahteraan pelajar perubatan veterinar di Malaysia, dengan mempertimbangkan keunikan pengalaman akademik dan profesional mereka. Satu kajian keratan lintang telah dijalankan di salah satu universiti veterinar di Malaysia (FPV, UMK). Kajian ini dilakukan melalui soal selidik dalam talian yang dijalankan sendiri selama 14 hari (2 minggu). Sejumlah lapan puluh dua (82) responden telah direkodkan dari pelajar tahun pertama (DVM 1) hingga tahun lima (DVM 5) di FPV. Data dikumpulkan dan dianalisis menggunakan Microsoft Excel dan Perisian Pakej Statistik untuk Sains Sosial (SPSS) untuk mengkaji hubungan di antara pemilikan haiwan peliharaan yang berkaitan dengan hubungan manusia-haiwan dan tahap kemurungan. Hasil kajian menyimpulkan bahawa tidak terdapat hubungan yang signifikan secara statistik antara pemilikan haiwan peliharaan ($r=-0.068$, $p=0.541$) atau ketiadaannya di kalangan pelajar ($r=0.024$, $p=0.970$). Ini menunjukkan bahawa, berdasarkan data yang dikumpulkan dan penilaian analitis, terdapat kurang bukti untuk menegaskan adanya hubungan yang bermakna antara pemilikan haiwan peliharaan dan pemboleh ubah yang diteliti dalam kalangan populasi pelajar yang dikaji.

*Kata kunci:* *Veterinar, Kesihatan mental, Depresi, Hubungan manusia-haiwan, Pelajar, Malaysia*

# ACKNOWLEDGEMENTS

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# ABBREVIATION

| ABBREVIATIONS | DEFINITION |
|---|---|
| UMK | Universiti Malaysia Kelantan |
| FPV | Faculty of Veterinary Medicine |
| DVM | Doctor of Veterinary Medicine |
| PAS-M | Modified Pet Attitude Scale |
| PHQ-9 | Patient Health Questionnaire |
| CESD-10 | Center for Epidemiologic Studies Depression Scale |

**CHAPTER 1 INTRODUCTION**

**1.1 INTRODUCTION**

Animals can give humans so much impact in their life. Imagine if animals do not exist at all, no little furry friends running around wagging their tail, colorful fishes that calms the eyes, and bigger animals that have the softest heart. These animals can become our friends and family due to human-animal bonds that develop over time. Pets can give emotional, social, and physical benefits to humans. By having these animals close to us, we can develop a sense of responsibility and security without us knowing. Not only that, pets can also become animal-assisted therapy that can help people by becoming guide animals for blind people, diabetes service animals, and much more. A therapy or pet canine has been shown to be beneficial in lowering blood pressure, lowering heart rate, increasing speech and memory function, and increasing mental functioning (Bowin, 2019). It has also been shown to decrease stress markers such as epinephrine and norepinephrine levels (Weiler et al., 2018).

Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn and work well, and contribute to their community (WHO, 2022). In 2019, one in every eight people, or 970 million people around the world were living with a mental disorder, with anxiety and depressive disorders being the most common (WHO, 2022). There are two common terms used interchangeably when speaking about mental health, which are mental disorder and mental illness. There is a slight difference between mental disorders and mental illnesses. Mental disorders are characterized by a clinically significant disturbance in an individual's cognition, emotional regulation, or behavior. Meanwhile, mental illnesses are a condition that affects a person's thinking, feeling, mood or behavior. It is believed that mental

Illness is a subset of mental disorder. Examples of these disorders or illnesses are depression, bipolar disorder, post-traumatic stress disorder (PTSD), schizophrenia and eating disorder (WHO, 2022). Worldwide, veterinary practitioners and students are reported to be at higher risk of suicide, burnout, and depression compared to other occupational groups (Brscic, 2021). This is believed to be due to burnout involving the veterinary medical students throughout the semester.

## 1.2 PROBLEM STATEMENT

In North America, veterinary medical students suffer from high levels of stress and symptoms of depression (Killinger, 2017). This is due to the increased competition between the students, workloads and time constraint constricted throughout their studies in the veterinary school. Stress and depression are currently some of the common mental health issues that are affecting students (Killinger, 2017). It is observed that pet owners were 41% less depressed than non-pet owners among Bangladeshis people (Chakma et al, 2021) . However, no studies have evaluated the state of mental health among veterinary students' and whether owning pets could potentially ways to improve the state of mental health of veterinary students at Universiti Malaysia Kelantan (UMK), Malaysia.

## 1.3 RESEARCH QUESTIONS

1.3.1 How many veterinary medical students in UMK owned pets?

1.3.2 What is the level of depression among veterinary medical students at UMK?

1.3.3 Does having pets improve the veterinary student's mental health?

## 1.4 RESEARCH HYPOTHESIS

1.4.1 Many veterinary students owned pets.

1.4.2 Depression levels may vary, from mild depression to severely depressed.

1.4.3 Having pets can improve mental health as the students can reduce loneliness, increase productivity, and increase the social connection between humans and animals.

## 1.5 RESEARCH OBJECTIVES

1.5.1 To determine the number of veterinary medical students in UMK who own pets.

1.5.2 To assess the level of depression among veterinary medical students at UMK

1.5.3 To investigate the correlation between owning pets and veterinary students' mental health at UMK

# CHAPTER 2 LITERATURE REVIEW

## 2.1    Pet ownership and depression

Depression is a prevalent mental health condition characterized by persistent feelings of sadness, and a diminished interest or pleasure in activities, and is believed to arise from a multifaceted interplay of social, psychological, and biological factors over extended periods (WHO, 2023) Based on the study that was done, there is an association between pet ownership and mental health well-being. This study observed that pet owners were 41% less depressed than non-pet owners. In the study, the participant's gender, marital status, tobacco consumption, physical disability, and difficulty in working were significantly associated with depression (Chakma et al., 2021).

Another similar study was done in South Korea, to investigate the relationship between these two variables using self-administered questionnaires. The general characteristics that were taken into consideration in this study were that the respondents are employed, smokers, drinkers, and they have been clinically diagnosed with depression symptoms. They also include questions from PAS-M and use the short version of the Center for Epidemiologic Studies Depression scale (CESD-10), and this study reveals that there are negative linear associations found between these variables (Min et al., 2019).

## 2.2 Animal assisted therapy in mentally diagnosed patient

### 2.2.1 Post-traumatic stress disorder

Post-traumatic stress disorder (PTSD) is a syndrome that results from exposure to real or threatened death, serious injury, or sexual assault (Mann, 2023). These signs of PTSD are persistently re-experiencing the traumatic event, intrusive thoughts, nightmares, flashbacks, and dissociation (Mann, 2023). There are studies that relate clinically diagnosed patients with PTSD with animals. One example is animal-assisted therapy, which dogs were used to assist children with sexual abuse trauma. The presence of dogs with the child can help with many types of treatment, for example cognitive-behavioral, trauma-focused cognitive-behavioral, or play therapy, as the presence of the dogs will be more cheerful and avoid the student becoming lonely (Dietz et al., 2012).

Horses play a key role in animal-assisted therapy when engaging with clinically diagnosed patients. The patients were given time to interact with horses through verbal and nonverbal interaction and body language and learned to halter and deal with the horses to create a safe space for them. This study has supported their hypothesis that animal assisted therapy could be effective for the treatment of posttraumatic stress, anxiety, and depression symptoms. This is because the study found there is a significant increase of mindfulness during the program (Earles et al, 2015)

### 2.2.2 Schizophrenia

Schizophrenia is characterized by significant impairments in the way reality is perceived and changes in behavior. The symptoms of schizophrenia are persistent delusions, hallucinations, disorganized thinking, extreme agitation or slowing of movements (WHO, 2022). This study was conducted to evaluate the association between animal assisted therapy and happiness level and quality of life of elderly in psychiatric residential care. The results showed that the animal assisted therapy was effective for the patients, as the symptoms of schizophrenia and stress were reduced because the presence of the animal can positively affect an individual's loneliness and increase happiness. Besides that the attachments between the human and animal has been defined as emotional bond that can support a sense of closeness, well-being and security (Sahebalzamani et al, 2020)

## 2.3   Pet ownership and mental health during COVID-19 pandemic

WHO has declared COVID-19 pandemic in March 2020. In the first year of the COVID-19 pandemic, global prevalence of anxiety and depression increased by a massive 25% (WHO, 2022). The causes of increasing prevalence of mental health disorders are loneliness, fear of infection, suffering and death for oneself and for loved ones, grief after bereavement and financial worries (WHO, 2022). The conclusion of the study is that pet ownership was not associated with mental health and well-being indicators during the COVID-19 pandemic. It remains unclear if the pet owners benefited from the presence of their companion animal, which can be assessed by further study, via longitudinal and qualitative designs (Denis-Robichaud et al, 2022).

**6.4    Relationship between emotional attachment to pets and human**

As many studies done relating to pet ownership and human mental health, it is believed that the positive outcome of these studies is based on the emotional attachments between the pet owners and their companion animal. The researchers suggested that humans often have strong attachments to their pets and some people may feel that they have stronger attachments to their pets compared to family members. However, the current study shows that the relationship between these emotional attachments to the pets is associated with their mental health. This study was done by 20 minutes online survey that includes the written informed consent, and 610 respondents range from 18-73 years old. 92.79% of the total respondents are women and the other identified as men and non-binary. The questions includes socio-demographic data, 23 items from Lexington Attachments to Pet Scale (LAPS) to assess the emotional attachments to one's pets, Revised Adult Attachment Scale (R-AAS) to assess the attachments to human by having higher score reflecting stronger closeness, dependence or anxiety. Besides that, it also includes Brief Symptom Inventory (BSI) to assess the symptomatic distress and indicate the mental health burden. These data were collected and analyzed via online platform SoSci Survey. The findings indicate a correlation between insecure attachments to humans, characterized by anxiety and dependence, and stronger emotional bonds with pets. It is hypothesized that emotional attachments to pets tend to be more securely formed compared to attachments with significant others

# CHAPTER 3 MATERIAL AND METHODOLOGY

## 3.1 Study Area

This study was conducted at the Faculty of Veterinary Medicine, UMK, Padang Tembak, Kelantan.

## 3.2 Study Design

Cross-sectional study

## 3.3 Source Population

This study was conducted on veterinary medical students enrolled in UMK, Padang Tembak, Kelantan.

## 3.4 Study population

This study was conducted on the students of DVM 1, 2, 3, 4 and 5 of UMK

### 3.4.1 Inclusion criteria

The study was conducted by all Doctor of Veterinary Medicine (DVM), UMK that are willing to participate and present during the time of the study.

### 3.4.2 Exclusion criteria

This study excluded alumni and post graduates students of the Faculty of Veterinary Medicine, UMK.

## 3.5 Sampling technique and procedure

The sampling method that was used is stratified sampling method where the strata was their class which were DVM 1,2,3,4 and 5 and samples taken are purely random from each stratum. The questionnaire included age, gender, race or ethnicity, year of studies, pet ownership and number and types of pets owned.

## 3.6 Data collection tools

The data were taken through self-administration questionnaires that consist of 3 parts. The first part was the respondent's demographics. The information about the ownership of pets. Name, age and other personal information were not included, as the matter of privacy and for the target population to be more comfortable in answering the questionnaire. This study was carried out using Pet Attitude Scale-Modified (Templer et al, 1981) and Patient Health Questionnaire (PHQ-9).

Pet Attitude Scale-Modified (Templer et al, 1981) describe the connection and measure the attitude between pet owners and their pets. This questionnaire can be acquired from chapter 20, The Psychology of the Human-Animal bond that was written by clinicians and researchers Chris Blazina, Guler Boyraz, and David N. Shen-Mille and much more including Donald I.Templer and Hiroko Arikawa, which are the ones that created the Modified Pet Attitude Scale (PAS-M) questionnaire. This questionnaire includes 18 questions with 18 to 126 point likert scale ranging from strongly disagree (1) to strongly agree (7). The author stated that permission for the questionnaire is not necessary.

Next is Patient Health Questionnaire-9 (PHQ-9). This questionnaire consists of 9 questions developed by Drs. R.L. Spitzer, J.B.W. Williams, K. Kroenke and colleagues, This questionnaire includes 9 questions with 1-27 points likert scale ranging from not at all (0) to nearly every day (3). This questionnaire evaluates the depression levels that a person is having through for the past 2 weeks from answering the questionnaire.

## 3.7 Data analysis

For Pet Attitude Scale-Modified, the data from likert scale were counted. The total scores range from 18 to 126, the higher the numbers, more positive attitudes and higher connection between the owners and their pets. Patient Health Questionnaire (PHQ-9) data were also counted. The total score ranges from 1 to 27, and the total scores determine the depression severity that consists of minimal depression, mild depression, moderate depression, moderately severe depression and severe depression. The data were collected, and tabulated in Microsoft Excel. This data was analyzed statistically using SPSS. The association between owning pets and depression level among students were evaluated using Independent T-Test and the data included mean scores for PAS-M and PHS-9.

## 3.8 Ethical consideration

The consent of the participants were obtained before enrolling for the study and the data did not include the personal information such as name, age and email to improve sense of security for the students.

# CHAPTER 4 RESULT

## 4.1 Participants demographic information

A total of 82 respondents from the students of FPV, UMK, took part in the study. The summary of the respondents' demographics information are presented in table 1.

Table 1. Demographic information of the respondents

| Demographic variables | Total respondents (n = 82) | Pet owners (n = 77) | Non-pet owners (n = 5) |
|---|---|---|---|
| Gender | | | |
| Male | 24 | 22 | 2 |
| Female | 56 | 53 | 3 |
| Race | | | |
| Malay | 56 | 51 | 5 |
| Chinese | 7 | 7 | 0 |
| Indian | 7 | 7 | 0 |
| Others | 7 | 7 | 0 |
| Year of studies | | | |
| DVM 1 | 21 | 19 | 2 |
| DVM 2 | 19 | 18 | 1 |
| DVM 3 | 14 | 14 | 0 |
| DVM 4 | 5 | 4 | 1 |
| DVM 5 | 22 | 21 | 1 |
| Number of pets owned | | | |

| | | | |
|---|---|---|---|
| 1 | 31 | 31 | 0 |
| 2 | 14 | 14 | 0 |
| 3 | 9 | 9 | 0 |
| More than 4 | 4 | 4 | 0 |

Based on table 1, the majority of the respondents were female (n=56, 70%) which consisted of more than half of the respondents. Majority of the respondents were from year 5 students (n=22, 27.2%) and the least number were from year 4 students (n=5, 6.2%). The majority of the respondents were Malay (n=59, 73.8%) whereas the minority were others which were Iban, Dusun, Kenyah, Malanau and Bisaya (n=7, 8.6%). The number of students that owned pets had a significant difference (n=77, 93.9%) compared to the students that do not own any pets (n=5, 6.1%). It was recorded that most of the respondents have mild depression (n=29, 35.4%) and the least number of respondents were having moderately severe (n=6, 7.3%) to severe (n=6, 7.3%)

Figure 1 below shows the types and number of pets that the respondents owned.



What type of pets do you owned?
82 responses
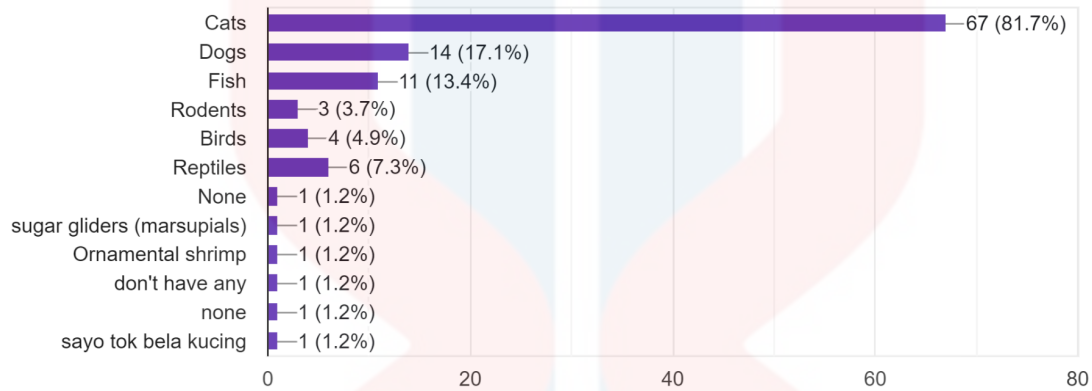
Based on the figure, we can conclude that the majority of the respondents had cats as their pets (n=67, 81.7%) and the least type of pets owned are sugar gliders, and ornamental shrimps (n=1, 1.2%)

## 4.2 Responds towards Modified Pet Attitude Scale (PAS-M)

Table 2 presents the questions used in the questionnaire, which were adapted from Templer et al.'s (1981) study.

| Statements | Responses | | | | | | |
|---|---|---|---|---|---|---|---|
| | Strongly disagree | Moderately disagree | Slightly disagree | Unsure | Slightly agree | Moderately agree | Strongly agree |
| I really like seeing pets enjoy their food | 2 (2.4%) | 0 (0%) | 0 (0%) | 0 (0%) | 5 (6.1%) | 7 (8.5%) | 68 (82.9%) |
| My pet means more to me than any of my friends (or would if I had one). | 3 (3.7%) | 3 (3.7%) | 4 (4.9%) | 17 (20.7%) | 18 (22%) | 17 (20.7%) | 20 (24.4% ) |
| I would like a pet in my home. | 1 (1.2%) | 0 (0%) | 1 (1.2%) | 5 (6.1%) | 7 (8.5%) | 12 (14.6%) | 56 (68.3%) |
| *Having pets is a waste of money. | 41 (50%) | 12 (14.6%) | 13 (15.9%) | 11 (13.4%) | 2 (2.4%) | 2 (2.4%) | 1 (1.2%) |
| Housepets add happiness to my life (or would if I had one). | 1 (1.2%) | 0 (0%) | 0 (0%) | 2 (2.4%) | 5 (6.1%) | 20 (24.4%) | 54 (65.9%) |
| *I feel that pets should always be kept outside. | 18 (22%) | 17 (20.7%) | 20 (24.4%) | 19 (23.2%) | 5 (6.1%) | 2 (2.4%) | 1 (1.2%) |
| I spent time every day playing with my pet (or I would if I had one). | 1 (1.2%) | 1 (1.2%) | 4 (4.9%) | 6 (7.3%) | 18 (22%) | 20 (24.4%) | 32 (39%) |
| I have occasionally communicated with my pet and understood what it was trying to express (or would if I had one). | 1 (1.2%) | 0 (0%) | 5 (6.1%) | 7 (8.5%) | 17 (20.7%) | 24 (29.3%) | 28 (34.1%) |
| *The world would be a better place if people would stop spending so much time caring for their pets and started caring | 37 (45.1%) | 11 (13.4%) | 12 (14.6%) | 12 (14.6%) | 5 (6.1%) | 3 (3.7%) | 2 (2.4%) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| more for other human beings instead. | | | | | | | |
| I like to feed animals out of my hand. | 2 (2.4%) | 0 (0%) | 4 (4.9%) | 10 (12.2%) | 16 (19.5%) | 15 (18.3%) | 35 (42.7%) |
| I love pets. | 1 (1.2%) | 1 (1.2%) | 0 (0%) | 0 (0%) | 3 (3.7%) | 5 (6.1%) | 72 (87.8%) |
| *Animals belong in the wild or in zoos, but not in the home. | 28 (34.1%) | 12 (14.6%) | 21 (25.6%) | 17 (20.7%) | 3 (3.7%) | 0 (0%) | 1 (1.2%) |
| *If you keep pets in the house you can expect a lot of damage to the furniture. | 5 (6.1%) | 7 (8.5%) | 5 (6.1%) | 26 (31.7%) | 20 (24.4%) | 12 (14.6%) | 7 (8.5%) |
| I like housepets. | 1 (1.2%) | 0 (0%) | 1 (1.2%) | 5 (6.1%) | 9 (11%) | 17 (20.7%) | 49 (59.8%) |
| *Pets are fun but it's not worth the trouble of owning one. | 27 (32.9%) | 18 (22%) | 12 (14.6%) | 12 (14.6%) | 10 (12.2%) | 3 (3.7%) | 0 (0%) |
| I frequently talk to my pet (or would if I had one). | 1 (1.2%) | 0 (0%) | 5 (6.1%) | 5 (6.1%) | 11 (13.4%) | 15 (18.3%) | 45 (54.9%) |
| *I hate animals. | 69 (84.1%) | 5 (6.1%) | 0 (0%) | 2 (2.4%) | 2 (2.4%) | 1 (1.2%) | 3 (3.7%) |
| You should treat your housepets with as much respect as you would a human member of your family. | 1 (1.2%) | 3 (3.7%) | 1 (1.2%) | 2 (2.4%) | 6 (7.3%) | 13 (15.9%) | 56 (68.3%) |

*Note: reverse scoring for (*)*

Table 2 displays the responses towards PAS-M and some of the questions were negative and it served as a reversed scoring purpose. 82.9% of the respondents strongly agree that they enjoyed seeing their pets eating while only 1.2% answered that they strongly disagree regarding that matter. 72% of the respondents stated that they love their pets meanwhile 1.2% conversely. Majority of respondents strongly disagreed with the statement that having pets is a waste of money while 13.4% of respondents remain neutral regarding that matter.

## 4.3 Responds towards Patient Health Questionnaire (PHQ-9)

Table 3 displays the questions posed in the questionnaire, adapted from the study by Spitzer et al.

| Statements | Responds (%) | | | |
|---|---|---|---|---|
| | Not at all | Several days | More than half of the days | Nearly every day |
| Little interest or pleasure in doing things | 29.3 | 45.1 | 12.2 | 13.4 |
| Feeling down, depressed, or hopeless | 36.6 | 42.7 | 9.8 | 11 |
| Trouble falling or staying asleep, or sleeping too much | 24.7 | 44.4 | 9.9 | 21 |
| Feeling tired or having little energy | 16 | 50.6 | 17.3 | 16 |
| Poor appetite or overeating | 35.4 | 43.9 | 12.2 | 8.5 |
| Feeling bad about yourself — or that you are a failure or have let yourself or your family down | 35.4 | 37.8 | 12.2 | 14.6 |
| Trouble concentrating on things, such as reading the newspaper or watching television | 35.4 | 42.7 | 9.8 | 12.2 |
| Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual | 58.5 | 26.8 | 3.7 | 11 |
| Thoughts that you would be better off dead or of hurting yourself in some way | 69.5 | 20.7 | 4.9 | 4.9 |

Table 3 shows the responses to the Patient Health Questionnaire (PHQ-9). Almost half of the total respondents agree that they feel tired, have little interest in doing things, have trouble sleeping and concentrating, and have had a poor eating schedule for several days for the past 2 weeks. Most of the respondents do not feel that they are being restless and intend to hurt themselves.

Table 4 shows that the depression level for pet owner and non-pet owner

| | Depression level | | | | | |
| | Total respondent (n=82) | | Pet owners (n=77) | | Non-pet owners (n=5) | |
| | Frequency | (%) | Frequency | (%) | Frequency | (%) |
|---|---|---|---|---|---|---|
| Minimal | 24 | 29.3 | 20 | 24.4 | 4 | 4.9 |
| Mild | 29 | 35.4 | 29 | 35.4 | 0 | 0 |
| Moderate | 17 | 20.7 | 17 | 20.8 | 0 | 0 |
| Moderately severe | 6 | 7.3 | 6 | 7.3 | 0 | 0 |
| Severe | 6 | 7.3 | 5 | 6.1 | 1 | 1.2 |

It was recorded that most of the respondents have mild depression (n=29, 35.4%) and the least number of respondents were having moderately severe (n=6, 7.3%) to severe (n=6, 7.3%). This data also revealed that most of the pet owners had mild depression levels and the majority for non-pet owners had minimal depression level.

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**4.4 Relationship Between Respondents Pet Ownership, Attitudes with Pets and Depression Level**.

Table 5 below describes the data values of attitudes with pets and the depression level according to pet ownerships

| Modified Pet Attitude Scale (PAS-M) | | | |
|---|---|---|---|
| Mean | | Standard deviation | |
| With pets | No pets | With pets | No pets |
| 4.7460 | 4.9555 | 2.2515 | 2.2179 |
| Patient Health Questionnaire (PHQ-9) | | | |
| Mean | | Standard deviation | |
| With pets | No pets | With pets | No pets |
| 0.9899 | 0.7111 | 0.9817 | 1.1000 |

Mean score for respondents with pets is slightly lower compared to respondents without pets for PAS-M, but vice versa for PHQ-9. Standard deviation for respondents with pets is slightly higher than for respondents without pets, suggesting that attitudes toward pets within the group with pets exhibit a bit more variability.

Table 6 shows the p-value and mean results for Independent T-Test for PAS-M.

**Independent Samples Test**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 95% Confidence Interval of the Difference | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
| PAS | Equal variances assumed | .083 | .774 | -.850 | 80 | .398 | -3.77143 | 4.43611 | -12.59957 | 5.05672 |
| | Equal variances not assumed | | | -1.123 | 5.035 | .312 | -3.77143 | 3.35690 | -12.38258 | 4.83972 |

Based on the result for the Independent T-Test for PAS revealed that the p-value is 0.398, which is above 0.05. Hence, the null hypothesis is not rejected pointing that there is no significance between the two groups, respondents owning pets and those who do not.

Table 7 shows the p-value and mean results for Independent T-Test for PHQ-9.

**Independent Samples Test**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 95% Confidence Interval of the Difference | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
| PHQ | Equal variances assumed | .971 | .327 | .838 | 80 | .405 | 2.48312 | 2.96369 | -3.41481 | 8.38104 |
| | Equal variances not assumed | | | .587 | 4.236 | .587 | 2.48312 | 4.22663 | -8.99885 | 13.96509 |

Based on the result above, the p-value was 0.405, which is also above 0.05. Therefore, the decision not to reject the null hypothesis implies that no statistically significant difference exists between the two groups, which are those who own pets and those who do not.

# CHAPTER 5 DISCUSSION

This cross-sectional based study was conducted at the Faculty of Veterinary Medicine, Universiti Malaysia Kelantan. This study investigated the relationship between human-animal bond and depression level among veterinary students. This study was done due to awareness of high suicidal cases among veterinary professions (WHO, 2022). The prevalence of the participants' depression symptoms from PHQ-9 and average PAS-M score were also explored. As this study is a cross sectional study, it cannot determine the causal link between the human-animal bond and depression symptoms that the respondents went through.

This study was able to get 82 respondents from the students from the same faculty where this study was conducted which were DVM 1, 2, 3, 4 and 5. The majority of the respondents were final year students which was DVM 5 (22) which may be attributable to the sample technique (convenience sampling) since the author is a DVM 5. In order to increase the number of respondents, the author proceeds to personally go to each class and continuously distribute the questionnaire.

Majority of the respondents are female (70%) and Malay (73.8%). This result is expected to be so as the students in the faculty are mostly female and Malay. The crucial question in the respondents demographic is pet ownership. The results for this were 93.9% which are 77 of the respondents owned pets. This is believed due to the exposure towards the animals during class, practicals and rotations. During the class, the respondents may create bonds with the animal, and do not see the animal as a scary creature. However, in this case, the number of respondents that

do not own any pets is only 5 (6.1%) which may affect the later result as the sample size for this matter is too small to compare. 81.7% of the respondents take cats as their pets. This can be due to the fact that in Kelantan, the majority of the residents are Malay and cats are usually the chosen ones due to religious matters compared to dogs (Sejra et al, 2009). It was recorded that most of the respondents have mild depression (n=29, 35.4%) and the least number of respondents were having moderately severe (n=6, 7.3%) to severe (n=6, 7.3%). This data also revealed that most of the pet owners had mild depression levels and the majority for non-pet owners had minimal depression level. Depending on this result, it may be stated that owning pets can contribute to negative impact towards the owners' life. However, do take into consideration that depression levels can differ from time to time as it may last for a day or can be for weeks to months, it is also according to one's mental capacity, how they interact and handle their problems, genetics and each person can experience different symptoms such as poor concentration, low self-worth, changes in appetite and weight and thoughts about dying or suicide (WHO, 2023). As the study was conducted early in the semester, following a two-month holiday period, it is essential to acknowledge that the timing may have influenced the results, considering that participants may not have been fully immersed in their academic responsibilities at that early stage.

In this study, the mean results suggest that there are effects of the human-animal bond related to the depression levels in humans. Based on the results of the PAS-M survey, the mean for respondents that owned pets is 4.746 compared to respondents who do not own pets is 4.955. There are significant differences between the mean values which is 0.209. Given that the mean for respondents without pets is higher, it suggests that respondents without pets may exhibit more

positive attitudes toward pets according to the PAS-M survey on average. Exclusively relying on these findings, non pet owners may experience more positive attitudes towards animals because they have limited responsibilities such as daily care, financial cost and time commitments, Hence, they do not experience the challenges and stress that may come with pet ownership. Based on the result for PHQ-9, the mean for respondents that owned pets is 0.9899 and those without pets is 0.7111. Given that the mean for respondents with pets is higher, it suggests that, on average, this group may report higher levels of depression compared to those without pets. Do also take into consideration the high difference between the number of respondents that owned pets (77) and not owning any pets (5). This unequal sample size can be influenced by the attitudes of the larger group. As the number of the respondents without pets are only 5 people, it may not be representative of all non-pet owners for veterinary students to draw the conclusions. The large number of differences can greatly affect the data statistically.

**10.1 Relationship Between Pet Ownership and Depression Level**

The relationship between pet ownership and the level of depression among the DVM students, was assessed based on the findings of the Independent T-Test and it is revealed that the data is not statistically significant. This is because, p-value for PAS Independent T-Test result for respondents owning pets is 0.398 and for PHQ is 0.405. Both of the values are larger than 0.05, leading to inability to reject the null hypothesis. Therefore, in this context, it can be concluded that pet ownership does not exhibit a significant relationship with depression levels in veterinary students based on the study's findings. Do take in consideration that the small sample size and sample population played a big role, and it may not have enough evidence to reject the null hypothesis solely based on this data and this result shows that this study may need further

investigations. Based on the relationship between pet ownership and the level of depression among the DVM students is not significant, similar findings have been reported by Phang et al, 2023, stating that a non-significant relationship was observed between the attitude towards pets and depression level that was conducted in Klang Valley. Another study done in South Korea by Min et al, 2019, stating that mental health issues and pet ownership were not significantly associated in that particular study.

However, consistent with comparable research, there is evidence to suggest that pet ownership may enhance mental well-being. Several additional studies have been conducted on this subject such as a study done by Merril et al, 2012, has indicated that the choice of a specific pet can influence how individuals assess their levels of empathy, self-esteem, openness, conscientiousness, agreeableness, extraversion and neuroticism. The study revealed that respondents that owned cats were consistently related to higher levels of empathy, openness and agreeableness for both men and women. Another study done by Orth et al, 2013, conducted a study stating that there is an established connection between levels of self-esteem and human depression. However, according to the findings, there is no noticeable difference or impact on the respondents' participants based on ownership of cats, dogs, birds, exotic animals, or any other type of pet, including having multiple pets. Indicating a generalized positive impact on mental health, these findings suggest that the beneficial effects may extend across various types of animals, without specificity towards a particular species. Studies done by Albright et al, 2022; Chakma et al, 2021, indicated that there is a positive correlation between owning pets and levels of depression. However, contrary to the expectations, there was no notable effect on the
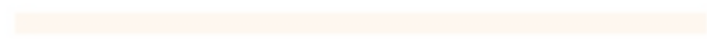
depression levels of the respondents. Due take into consideration that these two studies were done without evaluating the human-animal bond attachments of the participants.
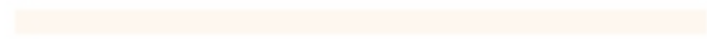
# CHAPTER 6 CONCLUSIONS

In conclusion, this study is aimed to examine the relation between symptoms of depression in individuals who are pets owners who are veterinary medical students and their corresponding attitudes toward their dogs. Our objective was to explore the potential link between the strength of the human–animal bond and mental health outcomes associated with dog ownership. By investigating this association, this study is able to gain a deeper understanding of how the quality of the bond between humans and their canine companions may play a role in influencing the mental health benefits derived from pets ownership. However, there is little to no association between these two variables. However, it is important to note that the sample size for respondents with and without owner plays a significant role, and the respondents is only in UMK, hence it is hard to be considered to be representative for veterinary medical students in Malaysia.

# CHAPTER 7 RECOMMENDATION

To the author's knowledge, this study is the first study done towards the veterinary medical students in Malaysia which examine the effects of pet ownership and depression levels. There is a limitation observed when conducting the study. The sample size for respondents with and without pets is imbalance. Hence, it is hard to say that it is the representation of the groups. One possible solution is to conduct the survey with the other veterinary medical university in Malaysia to balance the sample size. Extending the duration of the study beyond the initial two-week period may potentially lead to an augmentation in the participant pool, thereby

enhancing the overall number of respondents available for analysis and contributing to the robustness and comprehensiveness of the study's findings. Secondly, as this study is a cross-sectional study, the author is unable to follow up and monitor the depression level of the students. This study also was done early October which is the first week of semester after 2 months of holiday. This may affect the result as the students are not considered overwhelmed by the studies, practical and rotations after a long holiday. As for the solution regarding this matter, continuous study can be done multiple times, such as middle and the end of the semester.

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Below is the attachments for the questionnaire that was distributed to the respondents

# Influence of Pets in Veterinary Medical Students' Mental Well-Being

Assalamualaikum and good day. I am Raja Nurul 'Amira binti Raja Anoro, fifth-year student from Faculty of Veterinary Medicine, Universiti Malaysia Kelantan. I am conducting this questionnaire as part of my final year project, which is aimed at investigating the if there are positive effects of pet ownership among veterinary medical students. Recognizing that veterinary students frequently contend with elevated levels of stress and emotional exhaustion due to the demanding nature of their program, this study seeks to comprehend how the companionship of pets, including dogs, cats, and other animals, might play a significant role in enhancing mental well-being, mitigating stress, and ultimately fostering greater student satisfaction.

Rest assured that your participation in this **questionnaire will be completely anonymous**, and **your responses will be kept confidential**. Please feel free to provide candid and honest answers without any concerns about your identity being disclosed. I appreciate your time and thank you!

\* Indicates required question

1. Age

   *Mark only one oval.*

   ◯ 18 - 21
   ◯ 22 - 25
   ◯ 25 - 28
   ◯ 29 - 32
   ◯ > 33

2. Gender

   *Mark only one oval.*

   ◯ Male
   ◯ Female

3. Race / Ethnicity

*Mark only one oval.*

◯ Malay

◯ Chinese

◯ Indian

◯ Other: _____

4. Year of studies

*Mark only one oval.*

◯ DVM 1

◯ DVM 2

◯ DVM 3

◯ DVM 4

◯ DVM 5

5. Do you owned any pets? *

*Mark only one oval.*

◯ Yes

◯ No

6. How many pets you have?

*Mark only one oval.*

◯ 1

◯ 2

◯ 3

◯ > 4

34

7.  What type of pets do you owned? *

*Check all that apply.*

- [ ] Cats
- [ ] Dogs
- [ ] Fish
- [ ] Rodents
- [ ] Birds
- [ ] Reptiles
- [ ] Other: _____

**Influence of Pets in Veterinary Medical Students' Mental Well-Being**

The Pet Attitude Scale (Modified)

8.  I really like seeing pets enjoy their food *

*Mark only one oval.*

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |  |
|----|---|---|---|---|---|---|---|----|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly agree |

9.  My pet means more to me than any of my friends (or would if I had one). *

*Mark only one oval.*

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |  |
|----|---|---|---|---|---|---|---|----|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly agree |

10. I would like a pet or continue to have a pet in my home. *

*Mark only one oval.*

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |  |
|----|---|---|---|---|---|---|---|----|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly agree |

11. Having pets is a waste of money. *

*Mark only one oval.*

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |  |
|---|---|---|---|---|---|---|---|---|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly agree |

12. Housepets add happiness to my life (or would if I had one). *

*Mark only one oval.*

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |  |
|---|---|---|---|---|---|---|---|---|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly agree |

13. I feel that pets should always be kept outside. *

*Mark only one oval.*

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |  |
|---|---|---|---|---|---|---|---|---|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly agree |

14. I spent time every day playing with my pet (or I would if I had one). *

*Mark only one oval.*

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |  |
|---|---|---|---|---|---|---|---|---|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly agree |

15. I have occasionally communicated with my pet and understood what it was    *
    trying to express (or would if I had one).

*Mark only one oval.*

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |   |
|---|---|---|---|---|---|---|---|---|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly agree |

16. The world would be a better place if people would stop spending so much time  *
    caring for their pets and started caring more for other human beings instead.

*Mark only one oval.*

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |   |
|---|---|---|---|---|---|---|---|---|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly agree |

17. I like to feed animals out of my hand. *

*Mark only one oval.*

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |   |
|---|---|---|---|---|---|---|---|---|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly agree |

18. I love pets. *

*Mark only one oval.*

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |   |
|---|---|---|---|---|---|---|---|---|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly agree |

37

19.  Animals belong in the wild or in zoos, but not in the home. *

*Mark only one oval.*

|      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|------|---|---|---|---|---|---|---|----------------|
| Stro | ○ | ○ | ○ | ○ | ○ | ○ | ○ | Strongly agree |

20.  If you keep pets in the house you can expect a lot of damage to the furniture. *

*Mark only one oval.*

|      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|------|---|---|---|---|---|---|---|----------------|
| Stro | ○ | ○ | ○ | ○ | ○ | ○ | ○ | Strongly agree |

21.  I like housepets. *

*Mark only one oval.*

|      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|------|---|---|---|---|---|---|---|----------------|
| Stro | ○ | ○ | ○ | ○ | ○ | ○ | ○ | Strongly agree |

22.  Pets are fun but it's not worth the trouble of owning one. *

*Mark only one oval.*

|      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|------|---|---|---|---|---|---|---|----------------|
| Stro | ○ | ○ | ○ | ○ | ○ | ○ | ○ | Strongly agree |

23.    I frequently talk to my pet (or would if I had one). *

*Mark only one oval.*

|     | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|-----|---|---|---|---|---|---|---|----------------|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly agree |

24.    I hate animals. *

*Mark only one oval.*

|     | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|-----|---|---|---|---|---|---|---|----------------|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly agree |

25.    You should treat your housepets with as much respect as you would a human *
       member of your family.

*Mark only one oval.*

|     | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|-----|---|---|---|---|---|---|---|----------------|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly agree |

**Influence of Pets in Veterinary Medical Students' Mental Well-Being**

Patient Health Questionnaire (PHQ-9)

Over the **last 2 weeks**, how **often have you been bothered** by any of the following problems?

26. Little interest or pleasure in doing things.

*Mark only one oval.*

- Not at all
- Several days
- More than half the days
- Nearly every day

27. Feeling down, depressed, or hopeless.

*Mark only one oval.*

- Not at all
- Several days
- More than half the days
- Nearly every day

28. Trouble falling or staying asleep, or sleeping too much.

*Mark only one oval.*

- Not at all
- Several days
- More than half the days
- Nearly every day

29. Feeling tired or having little energy.

*Mark only one oval.*

- Not at all
- Several days
- More than half the days
- Nearly every day

30. Poor appetite or overeating.

*Mark only one oval.*

◯ Not at all

◯ Several days

◯ More than half the days

◯ Nearly every day

31. Feeling bad about yourself — or that you are a failure or have let yourself or your family down.

*Mark only one oval.*

◯ Not at all

◯ Several days

◯ More than half the days

◯ Nearly every day

32. Trouble concentrating on things, such as reading the newspaper or watching television.

*Mark only one oval.*

◯ Not at all

◯ Several days

◯ More than half the days

◯ Nearly every day

41

33. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual

*Mark only one oval.*

- ◯ Not at all
- ◯ Several days
- ◯ More than half the days
- ◯ Nearly every day

34. Thoughts that you would be better off dead or of hurting yourself in some way.

*Mark only one oval.*

- ◯ Not at all
- ◯ Several days
- ◯ More than half the days
- ◯ Nearly every day

Influence of Pets on Veterinary Medical Students' Mental Well-Being

Your responses have been of immense help, and I would like to convey my gratitude for your willingness to contribute to this project. Thank you so much!