

KNOWLEDGE, ATTITUDE, AND PRACTICES OF CAT OWNERS REGARDING  
PERIODONTAL DISEASE IN CATS IN JOHOR, MALAYSIA

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# KNOWLEDGE, ATTITUDE, AND PRACTICES TOWARD PERIODONTAL DISEASE IN CATS AMONG CAT OWNERS IN JOHOR, MALAYSIA.

## ABSTRACT

Periodontal disease is a term used for gum inflammation caused by plaque buildup. It has two stages: gingivitis and periodontitis. Gingivitis is the early stage where the gums are inflamed, but it can be reversed with treatment. If left untreated, gingivitis can worsen and turn into periodontitis, a more serious condition that can damage the teeth and gums permanently. This cross-sectional study aims to assess the knowledge, attitude and practice (KAP) of the cat owners towards PD using a self administered questionnaire using Google Form. However, there is still a lack of good practice among the respondents regarding the prevention and taking care of the oral health of the cat. The study findings show that the cat owner has good knowledge (n =54.3%), good attitude (n=82.7%) and moderate practice (n=49.4%). Significant associations were observed between age and knowledge (p = 0.025) as well as age and attitude (p = 0.03). Additionally, race (p = 0.017) and religion (p = 0.023) were significantly associated with the practices. Correlation analysis among knowledge, attitude, and practice levels regarding periodontal disease in cats among cat owners in Johor, Malaysia, revealed a significant but weak positive correlation between knowledge and attitude levels (r = 0.186, p = 0.048). Similarly, a moderate positive and significant correlation was identified between attitude and practice levels (r = 0.327, p = 0.001), suggesting that attitudes have a strong influence on practices. In contrast, the correlation between knowledge and practice levels was weak and not statistically significant (r = 0.136, p = 0.113).

**Keywords:** KAP, Periodontal disease, cat owners

# **PENGETAHUAN, SIKAP DAN AMALAN TERHADAP PENYAKIT PERIODONTAL PADA KUCING DALAM KALANGAN PEMILIK KUCING DI JOHOR, MALAYSIA.**

## **ABSTRAK**

Penyakit periodontal adalah istilah yang digunakan untuk keradangan gusi yang disebabkan oleh pembentukan plak. Ia mempunyai dua peringkat: gingivitis dan periodontitis. Gingivitis adalah peringkat awal di mana gusi meradang, tetapi ia boleh disembuhkan dengan rawatan. Jika tidak dirawat, gingivitis boleh menjadi lebih teruk dan bertukar menjadi periodontitis, keadaan yang lebih serius yang boleh merosakkan gigi dan gusi secara kekal. Kajian keratan lintang ini bertujuan untuk menilai pengetahuan, sikap dan amalan pemilik kucing terhadap penyakit periodontal menggunakan soal selidik yang ditadbir sendiri menggunakan borang 'Google Form'. Namun begitu, masih kurang amalan baik dalam kalangan responden berhubung pencegahan dan penjagaan kesihatan mulut kucing. Dapatan kajian menunjukkan bahawa pemilik kucing mempunyai pengetahuan yang baik ( $n=54.3\%$ ), sikap yang baik ( $n=82.7\%$ ) dan amalan sederhana ( $n=49.4\%$ ). Hubungan yang signifikan telah diperhatikan antara umur dan pengetahuan ( $p = 0.025$ ) serta umur dan sikap ( $p = 0.03$ ). Selain itu, bangsa ( $p = 0.017$ ) dan agama ( $p = 0.023$ ) menunjukkan hubungan yang signifikan dengan amalan. Analisis korelasi antara tahap pengetahuan, sikap, dan amalan mengenai penyakit periodontal dalam kalangan kucing pemilik di Johor, Malaysia, menunjukkan korelasi positif yang signifikan tetapi lemah antara tahap pengetahuan dan sikap ( $r = 0.186$ ,  $p = 0.048$ ). Begitu juga, terdapat korelasi positif sederhana dan signifikan antara tahap sikap dan amalan ( $r = 0.327$ ,  $p = 0.001$ ), menunjukkan bahawa sikap memberi pengaruh yang kuat terhadap amalan. Sebaliknya, korelasi antara tahap pengetahuan dan amalan adalah lemah dan tidak signifikan secara statistik ( $r = 0.136$ ,  $p = 0.113$ ).

**Kata kunci:** Pengetahuan, sikap dan amalan, Periodontal disease, pemilik kucing

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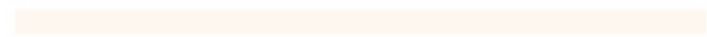
## LIST OF ABBREVIATIONS

KAP Knowledge, attitude practice

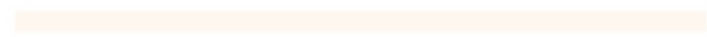
PD Periodontal Disease



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# CHAPTER 1

## INTRODUCTION

### 1.1 Research Background

PD is a broad term for an inflammation caused by plaque that affects the periodontium. The condition begins with the formation of dental plaque that extends into the gingival sulcus. This plaque, combined with calcium salts from saliva, leads to the creation of calculus, which is the primary cause of gingivitis (Keyserlingk, 2015). Periodontitis is an irreversible condition that results in the destruction of the periodontal ligament and the alveolar bone, ultimately leading to tooth loss (Ingham et al., 2002). Periodontal disease (PD) is widely acknowledged as one of the most common illnesses in cats, impacting approximately 70% of domestic cats older than two years, and 85% of those over five years (Keyserlingk, 2015).

Periodontal disease is categorized into two phases, gingivitis and periodontitis. The initial stage, gingivitis, is a reversible condition characterized by inflammation of the gums (Nurazreen et al., 2019). If gingivitis is not treated, it can progress to periodontitis (Keyserlingk, 2015).

Many pet owners are unaware that cats can suffer from periodontal diseases, much like humans, if proper oral care is not provided. A lack of understanding of how dental diseases develop and the role they play in pet care likely contributes to the low awareness of periodontal care in cats among pet owners (Nurazreen et al., 2019).

### 1.2 Research problem statement

Periodontal disease is a common health issue in cats, often going unnoticed until it reaches an advanced stage. Most cats present when the disease is already advanced, which may imply lack of attention and knowledge of the owner. This neglect allows the disease to progress from gingivitis to periodontitis, and can lead to tooth loss. Although preventive measures and treatments are available, they are often not utilized effectively due to late diagnosis and lack of owner awareness. Therefore, it is important to indicate the levels of the owners' knowledge,

attitude and practice which the findings can be used to educate the owners. There is no similar study that was conducted in this study area before.

### **1.3 Research question**

- 1) What is the level of knowledge among cat owners about periodontal disease in cats?
- 2) What is the attitude of cat owners towards periodontal disease in cats?
- 3) What are the practices among cat owners regarding the prevention and management of periodontal disease in cats?

### **1.4 Research hypothesis**

- 1) Cat owners have moderate knowledge about periodontal disease.
- 2) What is the cat owner's attitude towards prevention or good oral care which is core to preventing periodontal disease.
- 3) Cat owner have poor practice in the early detection and management of periodontal disease.

### **1.5 Research Objectives**

- To determine the level of knowledge about periodontal disease among cat owners in Johor, Malaysia.
- To determine the level of attitudes toward prevention or good oral care which is core to preventing periodontal disease.
- To determine the level of practice in the early detection and management of periodontal disease among the cat owner in Johor, Malaysia

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Clinical presentations

In a healthy state, the periodontium is composed of cementum (covering the tooth root surface), the periodontal ligament (firmly anchored in the cementum and alveolar bone), the alveolar bone (a compact bone that lines the alveoli walls and appears radiographically as the lamina dura), and the gingiva (Perry & Tutt, 2014). Normal gingival tissues are coral pink in color with a thin, knife-like edge and a smooth, regular texture. The dentition should be free from plaque and calculus (Nurazreen et al., 2019).

Gingivitis and periodontitis were evaluated utilizing adapted human methodologies. The gingivitis index (GI) was assessed with a variation of the Loë and Silness technique. GI was computed for the entire oral cavity, encompassing buccal and palatal/lingual surfaces. Periodontitis was determined by assessing periodontal probing depth, gingival recession, periodontal attachment loss, and furcation involvement (Ingham et al., 2002).

#### 2.2 Pathophysiology of periodontal disease

The etiology of periodontal disease involves a complex interaction between subgingival plaque bacteria and the host's immune response. As a result, periodontal disease is characterized by inflammation caused by microbial by-products such as lipopolysaccharide endotoxins, organic acids, protein toxins, and chemotactic peptides. These by-products stimulate the host's immune system to release cytokines, including interleukin (IL)-1 beta, IL-8, prostaglandins, and tumor necrosis factor alpha (O'Neill et al., 2023). Multiple factors, especially oral hygiene and diet, can influence the development of periodontal disease in cats (Nurazreen et al., 2019).

#### 2.3 Periodontal disease related with systemic problems

An association has been demonstrated between periodontal disease and systemic health parameters. In human medicine, the presence of chronic inflammation linked with periodontitis is acknowledged to potentially detrimentally affect overall systemic health. The dissemination of inflammatory mediators, cytokines, and bacterial endotoxins from periodontal pathogens can

affect the vascular system across the body and may even induce histological alterations in distant organs (Bellows et al., 2019).

A single study examined the relationship between systemic health markers and the severity of periodontitis in cats. In this research, 30 cats were evaluated, and it was found that levels of Immunoglobulin G and total globulins were positively associated with the status of periodontal disease. Furthermore, significant decreases in these markers were observed following periodontal treatment (Perry & Tutt, 2014).

Research has found a link between periodontal disease and an increased risk of developing chronic kidney disease (CKD) in cats, with those experiencing more than 25% alveolar bone loss being at the highest risk (Trevejo et al., 2018). Additionally, moderate to severe dental disease has been identified as a risk factor for the development of azotaemia in cats (Finch et al. 2016).

#### **2.4 Periodontal disease to animals welfare**

Periodontal disease not only impacts the general health and lifespan of cats but also influences their quality of life and interactions with owners. Hence, early detection is crucial to safeguard the welfare of the patients (O'Neill et al., 2023). Severely affected cats with periodontal disease often exhibit reluctance to eat or drink, primarily due to the intense pain they experience (Kim et al., 2019).

#### **2.5 Oral health and hygiene**

Research in dogs has shown that daily or every other day toothbrushing is effective as a preventative measure. Similar standards apply to cats for maintaining a plaque-free status. Daily tooth brushing is emphasized as the preferred and most effective method for removing plaque and maintaining gingival health in cats. Additionally, daily dental chews have been found to support oral health and reduce gingivitis and plaque in cats. (Oskarsson et al., 2021).

## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3.1 Study area

The study was focused on cat owners located in Johor, Malaysia.

#### 3.2 Study design

The study used a cross-sectional design, distributing validated questionnaires to all cat owners.

#### 3.3 Study population

The study included cat owners who have cats as pets, as well as breeders and cat fosters, as they meet the inclusion criteria.

#### 3.4 Selection criteria

##### 3.4.1 Inclusion criteria

1. Cat owners aged 18 to 70 years old.
2. Cat owners that are residents of Johor, Malaysia
3. Respondents must be able to read and write in our national language, Bahasa Malaysia or English.

##### 3.4.2 Exclusion criteria

1. Cat owners with ages below 18 years old and above 70 years old.
2. Cat owners that are not residents of Johor, Malaysia.
3. Respondents unable to read and write in our national language, Bahasa Malaysia or English.
4. Veterinarian cat owners.
5. Non rightful owner who just help to bring the cat over but is not the actual person that take care of the cat.

### 3.5 Sampling Method and Procedure

Non-probability sampling which is snowballing will be conducted in this study via web-based questionnaires. The sample size was determined based on the power calculation using the Z formula. The calculated number is 385 participants should be sampled to gain 95% confidence level. The calculation of the sample size was used:

Sample size, n =

$$\frac{N * \left[ \frac{z^2(1-p)}{e^2} \right]}{[N - 1 + \left( \frac{z^2 p(1-p)}{e^2} \right)]}$$

### 3.6 Data collection tools

The study will utilize a self-administered web-based questionnaire via Google Forms, as well as a paper-based questionnaire. The written questionnaire will be distributed to all clinics in Johor, while the online questionnaire will be shared through social media platforms like WhatsApp and Instagram.

### 3.7 Statistical Analysis of Data

The data will be analyzed using SPSS software, with Pearson Chi-square used to assess the association between socio-demographic variables and the level of knowledge, attitudes, and practices (KAP) towards Periodontal Disease in cats. Categorical data will be descriptively analyzed, while numerical data will be presented using measures such as mean, and standard deviation. The confidence level will be set at 95% with a 5% error margin.

### 3.8 Ethical Considerations

Animal ethical approval was not required for this study as it does not involve the use of animals. However, human ethics approval was required and approved since the study involves human participants. Consent forms included in the Google Form respondents to provide their consent before completing the questionnaire.



### 3.9 Questionnaire design

The instrument used in this study was based on a self-administered questionnaire web-based by using Google form which consisted of 5 sections. Section A consisted of the sociodemographic question of the respondent (age, gender, education level) while section B was about pets' information. Section C, D and E consisted of knowledge, attitude and practice questions respectively.

Eight questions were prepared to assess their knowledge. The questions had an answer list of "Yes", "No", "I'm not sure". Each of the right answers will be given a score of 1 while a score of 0 will be given to the wrong answer. Pet owners' level will be graded into poor, moderate or good. Respondents that score with 0-2, 3-5 and 6-8 were considered to have a poor, moderate and good level of knowledge respectively.

Eight questions were prepared to assess the attitude. The question was made with five -point Likert scales ("Strongly disagree", "Disagree", "Neutral", "Agree" and "Strongly Agree") were prepared to measure the owners' attitude. The response was scored 1 to 5 which ranged from "Strongly Disagree" to "Strongly Agree". Respondents that score with 1-13, 14-26 and 27-40 were considered to have a poor, moderate and good level of attitude respectively.

Fourteen practice questions were prepared with 4-point Likers scale ("Never", "Once", "Rarely", "Always") to evaluate the owners' practices. The response was scored 0 to 3 from "Never", "Once", "Rarely" and "Always". Respondents that score with 0-14, 15-28, 29-42 were considered to have poor, moderate and good levels of attitude respectively.

All of the questionnaires develop without any references to other questionnaires of the previous study. All of the contents were checked for validation by a veterinarian lecturer. Before spreading the questionnaire, a pilot test was conducted to check the reliability of the questionnaire. Cronbach alpha was conducted and the value of each part of the questionnaire was more than 0.8 which indicates consistency reliability.



## CHAPTER 4

### RESULT

#### 4.1 Socio-demographic Characteristics of Respondents

A total of 81 participants were recruited. The study results highlighted the dominant sociodemographic characteristics among the respondents as shown in Table 4.1. The majority of the respondents were female, constituting 71.6% (58/81). The most common age group was 18-25 years, representing 43.2% (35/81). In terms of race, most respondents identified as Malay, accounting for 82.7% (67/81). Regarding religion, the majority practiced Islam, also at 82.7% (67/81). Geographically, the highest proportion of respondents resided in Johor Bahru, totaling 37% (30/81). Finally, in terms of employment status, the private sector employed the largest group, comprising 32.1% (26/81).

**Table 4.1: Demographic of the survey respondent ( $n = 81$ )**

Socio-Demographic characteristics	Total ( $n=81$ )	
	$n$	%
<b>Gender</b>		
Male	23	28.4
Female	58	71.6
<b>Age (Year)</b>		
18-25	35	43.2
26-39	32	39.5
40-59	12	14.8

60-70	2	2.5
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**Race**

Malay	67	82.7
Chinese	9	11.1
Indian	5	6.2

**Religion**

Islam	67	82.7
Buddha	6	7.4
Hindu	5	6.2
Christian	3	3.7

**District of Residence**

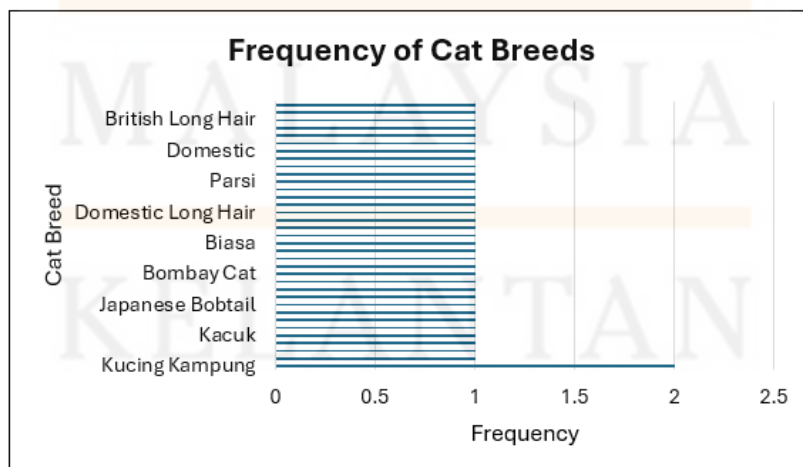
Kluang	18	22.2
Segamat	1	1.2
Muar	7	8.6
Tangkak	2	2.5
Batu Pahat	7	8.6
Pontian	4	4.9
Kulai	2	2.5
Johor Bahru	30	37
Kota Tinggi	5	6.2
Mersing	5	6.2

**Employment Status**

Civil servant	16	19.8
Self-employed	8	9.9
Private sector	26	32.1
Student	23	28.4
Unemployed	7	8.6
Others	1	1.2

#### 4.2 Pet's Information

The diversity of cat breeds among respondents' cats highlights a mix of local and international varieties as shown in Figure 4.1. Many respondents own "*kucing kampung*," a common local breed, often referred to as domestic cats. Additionally, a significant presence of breeds such as Domestic Short Hair (DSH), Domestic Long Hair (DLH), and British Shorthair (BSH) was noted. Some respondents also mentioned other breeds like Siamese, Persian, Maine Coon, Norwegian Forest Cat, Russian Blue, Japanese Bobtail, Egyptian Mau, and Abyssinian. Other notable breeds included Ragdoll, Bombay Cat, American Curl, and Exotic Shorthair. In some cases, respondents were unsure of their cat's specific breed, while others mentioned mixed breeds, such as kampung cats combined with international breeds like Scottish Fold, Bengal, or Munchkin. Overall, the data reflects a broad variety of cat breeds, ranging from local and ordinary to rare and high-maintenance pedigrees.



**Figure 4.1: Frequency of cat breeds**

The distribution of cat age among the respondents' pets as in Table 4.2 shows that the largest age group is 2-4 years, comprising 25.9% (21 cats). In terms of dietary preferences, the majority of cats, 59.3% (48 cats), fell under the "others" category, which included a variety of combinations such as kibble and soft food, kibble with human food, and other specialized mixes. This suggests that most respondents opted for diverse diets to meet their cats' nutritional needs and preferences.

**Table 4.2 Pet's Information**

Pet's Information	Total (n=81)	
	n	%
<b>Cat Age</b>		
1 - 6 months	12	14.8
7 - 12 months	16	19.8
1 - 2 years	13	16
2 - 4 years	21	25.9
more than 4 years	19	23.5
<b>Cat Diet</b>		
Kibble	20	24.7
Soft food	9	11.1
Human food	4	4.9
Others	48	59.3

### 4.3 Knowledge Toward Periodontal Disease in Cats Among Cat Owners in Johor, Malaysia.

The socio-demographic characteristics of the respondents regarding their knowledge of periodontal disease in cats, are categorized based on high (scores between 6 – 8), moderate (scores between 3-5), and low (scores between 0-2) frequency knowledge levels.

For gender, females had the highest proportion of respondents with good knowledge, accounting for 34 respondents (58.6%, high), while males had 10 respondents (43.5%, high). The p-value for gender was 0.068, indicating no significant association. For age, respondents aged 26–39 years had the highest proportion of good knowledge, with 22 respondents (68.8%, high), while the 60–70 age group had 2 respondents (100.0%) categorized under poor knowledge. The p-value for age was 0.023, indicating a significant association.

Among race, Malays had the highest proportion of good knowledge, with 38 respondents (56.7%, high), followed by Chinese with 4 respondents (44.4%, high). The p-value for race was 0.91, showing no significant association. Regarding religion, Buddhists had the highest proportion of good knowledge, with 4 respondents (66.7%, high), followed by Muslims with 37 respondents (55.2%, high). The p-value for religion was 0.936, indicating no significant association.

For district of residence, Segamat and Tangkak had the highest proportion of good knowledge, with 1 respondent (100.0%, high) and 2 respondents (100.0%, high), respectively. Among larger districts, Johor Bahru had the highest proportion of good knowledge, with 17 respondents (56.7%, high). The p-value for district of residence was 0.426, showing no significant association. For employment status, civil servants had the highest proportion of good knowledge, with 10 respondents (62.5%, high), followed by private-sector employees with 16 respondents (61.5%, high). The unemployed group showed a higher proportion of poor knowledge, with 3 respondents (42.9%). The p-value for employment status was 0.499, indicating no significant association.

In summary, high knowledge was most prevalent among females, respondents aged 26–39 years, Malays, Buddhists, residents of Tangkak and Segamat, and civil servants. Poor knowledge was more common among males, respondents aged 60–70 years, and residents of Mersing. Among all sociodemographic factors, only age had a significant association with knowledge levels (p-value = 0.023). All other variables showed no significant associations.

Table 4.3: Knowledges responses of cat owner

Socio-Demographic characteristics	Low Frequency (%)	n	Moderate Frequency (%)	n	High Frequency (%)	n	P value
<b>Gender</b>							
Male	2 (8.7)		11 (47.8)		10 (43.5)		0.068
Female	11 (19.0)		13 (22.4)		34 (58.6)		
<b>Age (Year)</b>							
18-25	6 (17.1)		12 (34.3)		17 (48.6)		0.023
26-39	3 (9.4)		7 (21.9)		22 (68.8)		
40-59	2 (16.7)		5 (41.7)		5 (41.7)		
60-70	2 (100.0)		0 (0.0)		0 (0.0)		
	6 (17.1)		12 (34.3)		17 (48.6)		
<b>Race</b>							
Malay	10 (14.9)		19 (28.4)		38 (56.7)		0.91
Chinese	2 (22.2)		3 (33.3)		4 (44.4)		
Indian	1 (20.0)		2 (40.0)		2 (40.0)		
<b>Religion</b>							
Islam	10 (14.9)		20 (29.9)		37 (55.2)		0.936

Buddha	1 (16.7)	1 (16.7)	4 (66.7)
Hindu	1 (20.0)	2 (40.0)	2 (40.0)
Christian	1 (33.3)	1 (33.3)	1 (33.3)

#### District of Residence

Kluang	3 (16.7)	7 (38.9)	8 (44.4)	0.426
Segamat	0 (0.0)	0 (0.0)	1 (100.0)	
Muar	0 (0.0)	2 (28.6)	5 (71.4)	
Tangkak	0 (0.0)	0 (0.0)	2 (100.0)	
Batu Pahat	1 (14.3)	2 (28.6)	4 (57.1)	
Pontian	2 (50.0)	1 (25.0)	1 (25.0)	
Kulai	3 (10.0)	10 (33.3)	17 (56.7)	
Johor Bahru	1 (20.0)	1 (20.0)	3 (60.0)	
Kota Tinggi	3 (60.0)	1 (20.0)	1 (20.0)	
Mersing	3 (16.7)	7 (38.9)	8 (44.4)	

#### Employment Status

Civil servant	1 (6.3)	5 (31.3)	10 (62.5)	0.499
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Self-employed	2 (25.0)	4 (50.0)	2 (25.0)
Private sector	3 (11.5)	7 (26.9)	16 (61.5)
Student	4 (17.4)	7 (30.4)	12 (52.2)
Unemployed	3 (42.9)	1 (14.3)	3 (42.9)
Others	0 (0.0)	0 (0.0)	1 (100.0)

#### 4.4 Attitude Toward Periodontal Disease in Cats Among Cat Owners in Johor, Malaysia.

The socio-demographic characteristics of cat owners in Johor, Malaysia, regarding their attitudes toward periodontal disease in cats were categorized into high (scores between 27-40), moderate (scores between 14-26), and low (scores between 1-13) frequency groups.

For gender, both males and females exhibited high levels of good attitudes, with 19 respondents (82.6%) among males and 48 respondents (82.8%) among females. The p-value for gender was 0.768, indicating no significant association. Among age groups, the 18–25 age group had the highest proportion of good attitudes, with 30 respondents (85.7%, high), while the 60–70 age group showed an even distribution of moderate and good attitudes (1 respondent, 50.0% each). The p-value for age was 0.03, indicating a significant association.

For race, Chinese respondents had the highest proportion of good attitudes at 100.0% (n=3, high), followed closely by Malays with 54 respondents (80.6%). The p-value for race was 0.676, showing no significant association. Regarding religion, Buddhists showed the highest proportion of good attitudes at 100.0% (n=6, high), followed by Muslims with 54 respondents (80.6%). The p-value for religion was 0.888, indicating no significant association.

In terms of district of residence, Tangkak and Kulai had the highest proportion of good attitudes at 100.0% (n=2 each, high). Among larger districts, Johor Bahru had the highest proportion of good attitudes with 25 respondents (83.3%, high). The p-value for district of residence was 0.489, showing no significant association. For employment status, the self-employed and students exhibited the highest levels of good attitudes at 87.5% (n=7) and 87.0% (n=20), respectively,



followed by private-sector employees with 84.6% (n=22). The p-value for employment status was 0.941, indicating no significant association.

In conclusion, the highest levels of good attitudes were observed among females, respondents aged 18–25, Chinese and Buddhist respondents, residents of Tangkak and Kulai, and self-employed individuals. Among all sociodemographic factors, only age showed a significant association with attitudes toward periodontal disease in cats (p-value = 0.03). All other variables showed no significant relationships.

**Table 4.4: Attitudes responses of cat owner**

<b>Socio-Demographic characteristics</b>	<b>Low Frequency n, (%)</b>	<b>Moderate Frequency n, (%)</b>	<b>High Frequency n, (%)</b>	<b>P value</b>
<b>Gender</b>				
Male	1 (4.3)	3 (13.0)	19 (82.6)	0.768
Female	1 (1.7)	9 (15.5)	48 (82.8)	
<b>Age (Year)</b>				
18-25	0 (0)	5 (14.3)	30 (85.7)	0.03
26-39	0 (0)	5 (15.6)	27 (84.4)	
40-59	2 (16.7)	1 (8.3)	9 (75.0)	
60-70	0 (0)	1 (50.0)	1 (50.0)	
	0 (0)	5 (14.3)	30 (85.7)	
<b>Race</b>				
Malay	2 (3.0)	11 (16.4)	54 (80.6)	0.676
Chinese	0 (0)	0 (0)	9 (100.0)	
Indian	0 (0)	1 (20.0)	4 (80.0)	
<b>Religion</b>				

Islam	2 (3.0)	11 (16.4)	54 (80.6)	0.888
Buddha	0 (0)	0 (0)	6 (100.0)	
Hindu	0 (0)	1 (20.0)	4 (80.0)	
Christian	0 (0)	0 (0)	3 (100.0)	
<b>District of Residence</b>				
Kluang	1 (5.6)	0 (0)	17 (94.4)	0.489
Segamat	0 (0)	1 (100.0)	0 (0)	
Muar	0 (0)	1 (14.3)	6 (85.7)	
Tangkak	0 (0)	0 (0)	2 (100.0)	
Batu Pahat	0 (0)	1 (14.3)	6 (85.7)	
Pontian	0 (0)	2 (50.0)	2 (50.0)	
Kulai	0 (0)	0 (0)	2 (100.0)	
Johor Bahru	1 (3.3)	4 (13.3)	25 (83.3)	
Kota Tinggi	0 (0)	2 (40.0)	3 (60.0)	
Mersing	0 (0)	1 (20.0)	4 (80.0)	
	1 (5.6)	0 (0)	17 (94.4)	
<b>Employment Status</b>				
Civil servant	1 (6.3)	4 (25.0)	11 (68.8)	0.941
Self-employed	0 (0)	1 (12.5)	7 (87.5)	
Private sector	1 (3.8)	3 (11.5)	22 (84.6)	
Student	0 (0)	3 (13.0)	20 (87.0)	
Unemployed	0 (0)	1 (14.3)	6 (85.7)	
Others	0 (0)	0 (0)	1 (100.0)	

#### **4.5 Practice Toward Periodontal Disease in Cats Among Cat Owners in Johor, Malaysia.**

The socio-demographic characteristics of cat owners in Johor, Malaysia, regarding their practices toward periodontal disease in cats were categorized into high (scores between 29-42), moderate (scores between 15-28), and low (scores between 0-14) frequency groups.

As shown in Table 4.5, for gender, females exhibited the highest proportion of moderate practices, with 29 respondents (50.0%, moderate), while males also showed the highest percentage of moderate practices, with 11 respondents (47.8%, moderate). The p-value for gender was 0.202, indicating no significant association. Regarding age groups, respondents aged 26–39 had the highest proportion of moderate practices, with 17 respondents (53.1%, moderate), followed closely by those aged 18–25, with 16 respondents (45.7%, moderate). The p-value for age was 0.778, indicating no significant association.

Among races, Chinese respondents exhibited the highest proportion of good practices, with 4 respondents (44.4%, high), while Indians also demonstrated high levels of good practices, with 4 respondents (80.0%, high). The p-value for race was 0.017, indicating a significant association. For religion, Hindus exhibited the highest proportion of good practices, with 4 respondents (80.0%, high), followed by Christians with 2 respondents (66.7%, high). The p-value for religion was 0.023, showing a significant association.

In terms of district of residence, Pontian exhibited the highest proportion of good practices, with 3 respondents (75.0%, high), followed by Muar, with 4 respondents (57.1%, high). The p-value for district of residence was 0.304, indicating no significant association. For employment status, private-sector employees showed the highest proportion of good practices, with 10 respondents (38.5%, high), followed by students with 7 respondents (30.4%, high). The p-value for employment status was 0.837, indicating no significant association.

In summary, significant associations were observed between practices and both race (p-value = 0.017) and religion (p-value = 0.023). Practices were highest among Indian and Hindu respondents, as well as private-sector employees and residents of Pontian. Other sociodemographic factors, such as gender, age, district of residence, and employment status, showed no significant relationships with practices.

**Table 4.5: Practices responses of cat owner**

<b>Socio-Demographic characteristics</b>	<b>Low Frequency (%)</b>	<b>Moderate Frequency (%)</b>	<b>High Frequency (%)</b>	<b>P value</b>
<b>Gender</b>				
Male	3 (13.0)	11 (47.8)	9 (39.1)	0.202
Female	16 (27.6)	29 (50.0)	13 (22.4)	
<b>Age (Year)</b>				
18-25	7 (20.0)	16 (45.7)	12 (34.3)	0.778
26-39	7 (21.9)	17 (53.1)	8 (25.0)	
40-59	4 (33.3)	6 (50.0)	2 (16.7)	
60-70	1 (50.0)	1 (50.0)	0 (0.0)	
<b>Race</b>				
Malay	19 (28.4)	34 (50.7)	14 (20.9)	0.017
Chinese	0 (0.0)	5 (55.6)	4 (44.4)	
Indian	0 (0.0)	1 (20.0)	4 (80.0)	
<b>Religion</b>				
Islam	19 (28.4)	35 (52.2)	13 (19.4)	0.023
Buddha	0 (0.0)	3 (50.0)	3 (50.0)	
Hindu	0 (0.0)	1 (20.0)	4 (80.0)	
Christian	0 (0.0)	1 (33.3)	2 (66.7)	
<b>District of Residence</b>				
<b>Kluang</b>	4 (22.2)	10 (55.6)	4 (22.2)	0.304

Segamat	1 (100.0)	0 (0.0)	0 (0.0)	
Muar	1 (14.3)	2 (28.6)	4 (57.1)	
Tangkak	0 (0.0)	2 (100.0)	0 (0.0)	
Batu Pahat	2 (28.6)	5 (71.4)	0 (0.0)	
Pontian	1 (25.0)	0 (0.0)	3 (75.0)	
Kulai	1 (50.0)	0 (0.0)	1 (50.0)	
Johor Bahru	7 (23.3)	17 (56.7)	6 (20.0)	
Kota Tinggi	1 (20.0)	2 (40.0)	2 (40.0)	
Mersing	1 (20.0)	2 (40.0)	2 (40.0)	
<b>Employment Status</b>				
Civil servant	5 (31.3)	9 (56.3)	2 (12.5)	0.837
<b>Self-employed</b>	2 (25.0)	5 (62.5)	1 (12.5)	
Private sector	5 (19.2)	11 (42.3)	10 (38.5)	
Student	5 (21.7)	11 (47.8)	7 (30.4)	
Unemployed	2 (28.6)	3 (42.9)	2 (28.6)	
Others	0 (0.0)	1 (100.0)	0 (0.0)	

#### 4.6 Correlation between KAP Scores

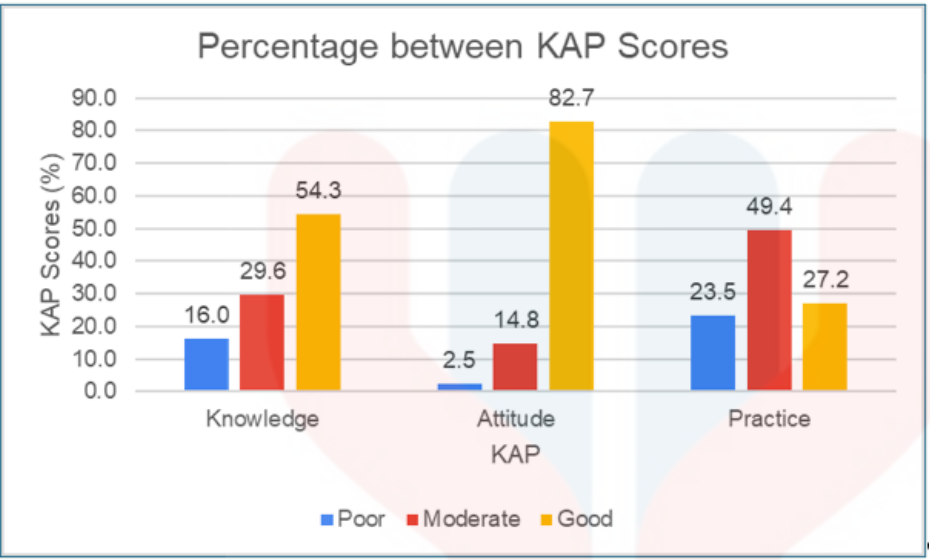
The correlation analysis among knowledge level, attitude level, and practice level regarding periodontal disease in cats among cat owners in Johor, Malaysia, revealed a significant but weak positive correlation between knowledge level and attitude Level ( $r = 0.186$ ,  $p = 0.048$ ). Similarly, a moderate positive and significant correlation was found between attitude level and practice level ( $r = 0.327$ ,  $p = 0.001$ ), indicating that attitudes strongly influence practices. However, the correlation between knowledge level and practice level was weak and not statistically significant ( $r = 0.136$ ,  $p = 0.113$ ). These findings suggest that while knowledge influences attitudes, it is the attitudes that play a more critical role in shaping practices related to periodontal disease in cats.

**Table 4.6: Correlation between KAP Level**

			Knowledge Level	Attitude Level	Practice Level
Spearman's rho	Knowledge Level	Correlation Coefficient	1.000	.210*	0.145
		Sig. (1-tailed)		0.030	0.098
	Attitude Level	Correlation Coefficient	.210*	1.000	.378**
		Sig. (1-tailed)	0.030		0.000
	Practice Level	Correlation Coefficient	0.145	.378**	1.000
		Sig. (1-tailed)	0.098	0.000	
*. Correlation is significant at the 0.05 level (1-tailed).					
**. Correlation is significant at the 0.01 level (1-tailed).					

#### 4.7 Percentage between KAP Scores

The analysis of knowledge, attitude, and practice (KAP) scores among cat owners in Johor, Malaysia, highlights varying levels of awareness and behavior as shown in the bar graph in Figure 4.2. For knowledge, 54.3% of respondents (54 individuals) demonstrated good levels, 29.6% (30 individuals) were at a moderate level, and 16.0% (16 individuals) were categorized as poor, indicating a relatively strong knowledge base but with room for improvement. Attitude scores were the highest, with 82.7% (83 individuals) in the good category, 14.8% (15 individuals) moderate, and only 2.5% (2 individuals) poor, reflecting generally positive attitudes among respondents. In contrast, practice scores were more evenly distributed, with 27.2% (27 individuals) categorized as good, 49.4% (49 individuals) moderate, and 23.5% (24 individuals) poor, revealing a significant gap in applying knowledge and attitudes into action. These findings suggest that while respondents exhibit strong attitudes and relatively good knowledge, practices remain the weakest area, requiring targeted interventions to bridge the gap between knowledge, attitudes, and their practical implementation.



**Figure 4.2: Percentage between KAP Scores**

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## CHAPTER 5

### DISCUSSION

This study investigates the owners knowledge, attitude and practice (KAP) regarding the periodontal disease in Johor. The findings shows that half of the participants show good understanding of periodontal disease regarding clinical sign and effect to the general health of the cats. The primary source of information was the internet, followed by veterinary care staff

The majority of respondents demonstrated an understanding of how dental health issues can impact a cat's overall well-being. Many were aware that symptoms such as inappetence and drooling are clinical signs of periodontal disease in cats.

However, most respondents were unaware that cats need to undergo anesthesia for a thorough dental examination. Anesthesia allows veterinarians to thoroughly examine the cat's oral cavity and document any abnormalities in the medical record (Weir & Bellows, n.d.). This lack of knowledge also highlights respondents' unawareness of the potential risks associated with dental scaling under anesthesia. Veterinarians should emphasize the importance of early dental scaling to minimize treatment risks and educate cat owners about the role of anesthesia in dental procedures and the precaution they take during the process.

Only a quarter of respondents reported owning cats aged four years or older. Since periodontal disease (PD) is significantly more prevalent in older cats, respondents with primarily juvenile or young cats are less likely to have encountered this condition in their pets. Additionally, some respondents misunderstood that PD only affects older cats and considered bad breath in cats to be a normal occurrence. This shows that further room for improvement regarding this as periodontal disease can affect all ages. The veterinarian can always check the dental health of the cat and educate the owner about the findings about tartar, foul mouth smell and others that are actually abnormal in the cat.

Another finding shows that the majority of the respondents agree about bringing the cats for dental scaling every 6 months. Cat owners also believe that preventive dental care can extend their cats' lives and overall animal welfare. As maintaining good dental care is crucial for the cat's overall health and happiness. However, the majority of the respondents are also concerned about the expenses for managing periodontal disease. Many cat owners worry about the cost of the diagnosis and treatment. Despite this, most of them are interested in improving their knowledge about



preventing periodontal disease in cats. Veterinarians can share practical tips through social media to raise awareness of the periodontal disease in cats. The veterinarian also can spread educational brochures about the prevention that is available, the importance of the dental check up and how early intervention can reduce long term cost.

There is a noticeable lack of awareness among cat owners regarding practices such as providing chew toys, which may be attributed to insufficient marketing and promotion of their availability and benefits. Chew toys can play a crucial role in maintaining dental health by helping to reduce plaque and tartar buildup. However, many owners are unaware of their advantages. Veterinarians should promote the availability of the products and also demonstrate or tutorial on proper usage.

Another practice that seems to be underutilized is regular tooth brushing. Many cat owners may find this practice tedious, as it requires brushing their cat's teeth every two days for optimal effectiveness. Additionally, the need to purchase specialized cat toothpaste can be a deterrent, as human toothpaste contains fluoride. Fluoride can lead to fluoride toxicity in cats. (Blakley, 2021)

These risks underscore the importance of using pet-specific dental products and educating cat owners on their safe use. Veterinarians should educate the owner on simple step-by-step guides or videos to help cat owners brush their cat's teeth more easily and make the toothpaste for cats available in their clinic.

This study has several limitations, primarily due to the inability to achieve the target sample size. As a result, the findings may not be representative of the entire population in Malaysia. Additionally, the use of a non-probability sampling method introduces the potential for bias, as it may favor certain groups over others, leading to a sample that may not accurately reflect the diversity of the broader population.

To enhance the quality and comprehensiveness of the study, improvements in data collection related to pet ownership are necessary. It is important to account for owners who have multiple cats in their care, as this could provide more detailed insights. Additionally, data should include aspects of cat management, such as whether the cats are kept indoors, outdoors, or a combination of both. Furthermore, understanding the purpose of owning cats whether for breeding, participation in shows or competitions, companionship, or other reasons should also be incorporated into the data collection process. These enhancements would allow for a more holistic understanding of cat ownership practices and their implications.

## CHAPTER 6

### CONCLUSION

In conclusion, this study demonstrates that half of the respondents show good knowledge, majority show good attitude and half respondents show moderate level of practice in managing and prevention of periodontal disease in cats among the cat owners in Johor. This study shows that there would be room for improvement for the cat owner to understand and apply the importance of dental health practice on their cat.

Educational programs should be pulled across a variety of platforms, including websites, pamphlets, posters, and social media, in order to close these gaps. These advertisements ought to offer precise, intelligible information regarding the signs, causes, available treatments, procedure of periodontal disease. Veterinarians are essential in helping cat owners understand the value of routine examinations and preventative care. Veterinarians should also educate and raise client understanding of the need of veterinary care in order to allay worries about veterinary expenses.

## Appendix 1: Google Survey Questionnaire

<h3>KNOWLEDGE, ATTITUDE, AND PRACTICES OF CAT OWNERS REGARDING PERIODONTAL DISEASE IN CATS IN JOHOR, MALAYSIA</h3> <p>Assalamualaikum and hello to the cat owners</p> <p>My name is Haziq Fahmi Bin Mohd Dali, a fifth year veterinary student from the Faculty of Veterinary Medicine, Universiti Malaysia Kelantan.</p> <p>You have been invited to participate in a simple online survey regarding dental health of cats in Johor, Malaysia. This survey aims to investigate the current level of knowledge, attitude and practice towards periodontal disease in cats among the cat owners in Johor, Malaysia.</p> <p>You are eligible to participate in this study if you meet the following criteria as listed below:</p> <ol style="list-style-type: none"><li>1. Age of 18 to 70 years old</li><li>2. Residents of Johor, Malaysia</li><li>3. Owns a cat</li><li>4. Able to read and understand Bahasa Melayu and English</li><li>5. Non veterinarian</li></ol> <p>Participation in this study is completely voluntary. You have the right to decline participation and may withdraw at any time without facing coercion. All personal information collected will be treated with strict confidentiality and used exclusively for research purposes. Your contribution will greatly aid in evaluating the prevailing knowledge, attitudes, and practices concerning periodontal disease in cats among cat owners in Johor, Malaysia.</p> <p>If you have any question about the study, please contact</p> <ul style="list-style-type: none"><li>• Dr. Norhidayah Noordin (<a href="mailto:norhidayah.n@umk.edu.my">norhidayah.n@umk.edu.my</a>)</li><li>• Haziq Fahmi Bin Mohd Dali (<a href="mailto:d20a0058@siswa.umk.edu.my">d20a0058@siswa.umk.edu.my</a>)</li></ul> <p>Assalamualaikum dan salam sejahtera kepada pemilik kucing</p> <p>Nama saya Haziq Fahmi Bin Mohd Dali, pelajar tahun lima veterinar dari Fakulti Perubatan Veterinar, Universiti Malaysia Kelantan.</p>	<p>Anda telah dijemput untuk mengambil bahagian dalam kaji selidik dalam talian ringkas berkenaan kesihatan pergigian kucing di Johor, Malaysia. Tinjauan ini bertujuan untuk menyasiat tahap pengetahuan, sikap dan amalan semasa terhadap penyakit periodontal pada kucing dalam kalangan pemilik kucing di Johor, Malaysia.</p> <p>Anda layak untuk menyertai kajian ini jika anda memenuhi kriteria berikut seperti yang disenaraikan di bawah:</p> <ol style="list-style-type: none"><li>1. Berumur 18 hingga 70 tahun</li><li>2. Penduduk Johor, Malaysia</li><li>3. Memiliki kucing</li><li>4. Boleh membaca dan memahami Bahasa Melayu dan Bahasa Inggeris</li><li>5. Bukan veterinar</li></ol> <p>Penyataan dalam kajian ini adalah secara sukarela. Anda mempunyai hak untuk menolak penyertaan dan boleh menarik diri pada bila-bila masa tanpa menghadapi paksaan. Semua maklumat peribadi yang dikumpul akan dijaga dengan kerahsiaan yang ketat dan digunakan secara eksklusif untuk tujuan penyelidikan. Sumbangan anda akan sangat membantu dalam menilai pengetahuan, sikap dan amalan lazim mengenai penyakit periodontal dalam kucing dalam kalangan pemilik kucing di Johor, Malaysia.</p> <p>Jika anda mempunyai sebarang pertanyaan tentang kajian, sila hubungi</p> <ul style="list-style-type: none"><li>• Dr. Norhidayah Noordin (<a href="mailto:norhidayah.n@umk.edu.my">norhidayah.n@umk.edu.my</a>)</li><li>• Haziq Fahmi Bin Mohd Dali (<a href="mailto:d20a0058@siswa.umk.edu.my">d20a0058@siswa.umk.edu.my</a>)</li></ul> <p>APPROVAL CODE: UMK/FPV/HUMAN/EXT/0004/2024</p> <p><a href="mailto:d20a0058@siswa.umk.edu.my">d20a0058@siswa.umk.edu.my</a> <a href="#">Switch account</a></p> <p>Not shared</p> <p>* Indicates required question</p>
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**INTRODUCTION / PENGENALAN**

Periodontal disease is a term used for gum inflammation caused by plaque buildup. It has two stages: gingivitis and periodontitis. Gingivitis is the early stage where the gums are inflamed, but it can be reversed with treatment. If left untreated, gingivitis can worsen and turn into periodontitis, a more serious condition that can damage the teeth and gums permanently.

Penyakit periodontal adalah istilah yang digunakan untuk keradangan gusi yang disebabkan oleh pembentukan plak. Ia mempunyai dua peringkat: gingivitis dan periodontitis. Gingivitis adalah peringkat awal di mana gusi meradang, tetapi ia boleh diterbalikkan dengan rawatan. Jika tidak dirawat, gingivitis boleh menjadi lebih teruk dan bertukar menjadi periodontitis, keadaan yang lebih serius yang boleh merosakkan gigi dan gusi secara kekal.

**CONSENT FORM/ BORANG PERSETUJUAN** \*

I do understand the purpose of the survey and agree to participate in this study.

Saya memahami tujuan tinjauan dan bersetuju untuk mengambil bahagian dalam kajian ini.

Yes, I agree

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**KNOWLEDGE, ATTITUDE, AND PRACTICES OF CAT OWNERS REGARDING PERIODONTAL DISEASE IN CATS IN JOHOR, MALAYSIA**

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SECTION A: PET OWNER'S SOCIO-DEMOGRAPHIC / BAHAGIAN A: SOSIO-DEMOGRAFI PEMILIK HAIWAN PELIHARAAN

**Gender / Jantina \***

Male / Lelaki

Female / Perempuan

**Age (year) / Umur (tahun) \***

18-25

26-39

40-59

60-70

---

**Race / Bangsa \***

Malay

Chinese

Indian

Other:

**Religion / Agama \***

Islam

Buddha

Hindu

Christian

Other:

**District of residence / Daerah tempat tinggal \***

Kluang

Segamat

Muar

Tangkak

Batu Pahat

Pontian

Kulai

Johor Bahru

Kota Tinggi

Mersing

**Employment status / Status Pekerjaan \***

Civil servant / Penjawat awam

Self-employed / Bekerja sendiri

Private sector / Sektor swasta

Student / Pelajar

Unemployed / Tidak bekerja

Other:

### KNOWLEDGE, ATTITUDE, AND PRACTICES OF CAT OWNERS REGARDING PERIODONTAL DISEASE IN CATS IN JOHOR, MALAYSIA

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SECTION B: PET'S INFORMATION / BAHAGIAN B: MAKLUMAT HAIWAN PELIHARAAN

**Cat Breed / Baka kucing \***

Your answer

**Cat age / Umur kucing \***

1 - 6 months / bulan

7 - 12 months / bulan

1 - 2 years / tahun

2 - 4 years / tahun

more than 4 years

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### KNOWLEDGE, ATTITUDE, AND PRACTICES OF CAT OWNERS REGARDING PERIODONTAL DISEASE IN CATS IN JOHOR, MALAYSIA

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\* Indicates required question

SECTION C: KNOWLEDGE ABOUT PERIODONTAL DISEASE IN CATS / BAHAGIAN C: PENGETAHUAN TENTANG PENYAKIT PERIODONTAL PADA KUCING

**Dental health problems can cause harm to the general health of the cats. / Masalah kesihatan pergigian boleh menyebabkan kemudatan kepada kesihatan umum kucing. \***

Yes / Ya

No / Tidak

I'm not sure / Saya tidak pasti

**Inappetance is a sign of periodontal disease in cats. / Kurang selera adalah tanda penyakit periodontal pada kucing. \***

Yes / Ya

No / Tidak

I'm not sure / Saya tidak pasti

**Drooling is a sign of periodontal disease in cats / Air liur meleleh adalah tanda penyakit periodontal pada kucing \***

Yes / Ya

No / Tidak

I'm not sure / Saya tidak pasti

**Periodontal disease can only affects older cats. / Penyakit periodontal hanya boleh menyerang kucing yang lebih tua. \***

Yes / Ya

No / Tidak

I'm not sure / Saya tidak pasti

**Bad breath in cats is normal. / Bau mulut yang busuk pada kucing adalah perkara biasa. \***

Yes / Ya

No / Tidak

I'm not sure / Saya tidak pasti

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**Poor dental hygiene can lead to periodontal disease in cat. / Kebersihan gigi yang buruk boleh menyebabkan penyakit periodontal pada kucing.** \*

Yes / Ya  
 No / Tidak  
 I'm not sure / Saya tidak pasti

---

**Regular dental checkup can help detect early periodontal disease in cats. / Pemeriksaan pergigian yang kerap boleh membantu mengesan penyakit periodontal awal pada kucing** \*

Yes / Ya  
 No / Tidak  
 I'm not sure / Saya tidak pasti

---

**General anaesthesia is required for a thorough dental check in cats. / Ubat bius hingga tidur diperlukan untuk pemeriksaan gigi yang menyeluruh pada kucing.** \*

Yes / Ya  
 No / Tidak  
 I'm not sure / Saya tidak pasti

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## KNOWLEDGE, ATTITUDE, AND PRACTICES OF CAT OWNERS REGARDING PERIODONTAL DISEASE IN CATS IN JOHOR, MALAYSIA

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\* Indicates required question

SECTION D: ATTITUDE TOWARDS PERIODONTAL DISEASE IN CATS / BAHAGIAN D: SIKAP TERHADAP PENYAKIT PERIODONTAL PADA KUCING

1 - Strongly disagree to 5-Strongly agree  
 1 - Sangat tidak setuju hingga 5-Sangat setuju

**It is wise to brush the teeth of the cats everyday or once every two days. / Adalah bijak untuk memberus gigi kucing setiap hari atau dua hari sekali.** \*

1 2 3 4 5

Strongly disagree / Sangat tidak setuju      Strongly agree / Sangat setuju

**I am willing to seek professional dental care for the cats. / Saya bersedia untuk mendapatkan penjagaan pergigian profesional untuk kucing.** \*

1 2 3 4 5

Strongly disagree / Sangat tidak setuju      Strongly agree / Sangat setuju

---

**I should bring my cat to dental scaling once every 6 months. / Saya harus membawa kucing saya ke penskaleran gigi setiap 6 bulan sekali.** \*

1 2 3 4 5

Strongly disagree / Sangat tidak setuju      Strongly agree / Sangat setuju

---

**I believe that preventive dental care can extend the cats life and improve animal welfare. / Saya percaya bahawa penjagaan pergigian pencegahan boleh memanjangkan hayat kucing dan meningkatkan kebajikan haiwan.**

1 2 3 4 5

Strongly disagree / Sangat tidak setuju      Strongly agree / Sangat setuju

---

**I worry about the diagnostic cost for Periodontal disease patients. / Saya sering bimbang tentang kos diagnostik untuk pesakit penyakit Periodontal.** \*

1 2 3 4 5

Strongly disagree / Sangat tidak setuju      Strongly agree / Sangat setuju

**I worry about treatment cost for periodontal disease patients. / Saya bimbang tentang kos rawatan untuk pesakit penyakit periodontal.** \*

1 2 3 4 5

Strongly disagree / Sangat tidak setuju      Strongly agree / sangat setuju

---

**I often worry about the commitment of taking care dental health of the cat. / Saya sering bimbang tentang komitmen menjaga kesihatan pergigian kucing.** \*

1 2 3 4 5

Strongly disagree / Sangat tidak setuju      Strongly agree / Sangat setuju

---

**I am keen to improve my knowledge on how I can better prevent periodontal diseases in my cats. / Saya berminat untuk meningkatkan pengetahuan saya tentang cara saya boleh mencegah penyakit periodontal pada kucing saya dengan lebih baik.** \*

1 2 3 4 5

Strongly disagree / Sangat tidak setuju      Strongly agree / sangat setuju

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## KNOWLEDGE, ATTITUDE, AND PRACTICES OF CAT OWNERS REGARDING PERIODONTAL DISEASE IN CATS IN JOHOR, MALAYSIA

d20a0058@siswa.umk.edu.my [Switch account](#)

Not shared

\* Indicates required question

SECTION E: PRACTICE TO PREVENT PERIODONTAL DISEASE IN CATS /  
BAHAGIAN E: AMALAN UNTUK MENCEGAH PENYAKIT PERIODONTAL PADA KUCING

**I brush my cat's teeth at home. / Saya gosok gigi kucing saya di rumah. \***

- Never / Tidak pernah
- Once / Sekali
- Rarely / Jarang
- Always / Sentiasa

**I provide cat chew toys to the cats. / Saya menyediakan mainan kunyah kucing kepada kucing. \***

- Never / Tidak pernah
- Once / Sekali
- Rarely / Jarang
- Always / Sentiasa

**I check my cat's oral condition from time to time. / Saya memeriksa keadaan mulut kucing saya dari masa ke semasa. \***

- Never / Tidak pernah
- Once / Sekali
- Rarely / Jarang
- Always / Sentiasa

**I bring my cats to seek professional dental check up of the cats. / Saya membawa kucing saya untuk mendapatkan pemeriksaan pergigian profesional bagi kucing tersebut. \***

- Never / Tidak pernah
- Once / Sekali
- Rarely / Jarang
- Always / Sentiasa

**I bring my cats to veterinarian clinic to do dental scaling. / Saya membawa kucing saya ke klinik veterinar untuk melakukan penskaleran gigi. \***

- Never / Tidak pernah
- Once / Sekali
- Rarely / Jarang
- Always / Sentiasa

**I use dental spray for my cats' oral hygiene. / Saya menggunakan semburan gigi untuk kebersihan mulut kucing saya \***

- Never / Tidak pernah
- Once / Sekali
- Rarely / Jarang
- Always / Sentiasa

**I follow veterinarian's advice for at home dental care for my cat. / Saya mengikut nasihat doktor haiwan untuk penjagaan pergigian di rumah untuk kucing saya. \***

- Never / Tidak pernah
- Once / Sekali
- Rarely / Jarang
- Always / Sentiasa

**I consider my cat's dental health to be as important as other aspects of its health care routine (e.g., vaccinations, nutrition). / Saya menganggap kesihatan pergigian kucing saya sama pentingnya dengan aspek lain dalam rutin penjagaan kesihatannya (cth., vaksinasi, pemakanan). \***

- Never / Tidak pernah
- Once / Sekali
- Rarely / Jarang
- Always / Sentiasa

**I discuss my cat's dental health during routine veterinary visits. / Saya membincangkan kesihatan pergigian kucing saya semasa lawatan rutin veterinar \***

- Never / Tidak pernah
- Once / Sekali
- Rarely / Jarang
- Always / Sentiasa

**I consider dental health issues when assessing my cat's overall health and behavior. / Saya mempertimbangkan isu kesihatan pergigian apabila menilai kesihatan dan tingkah laku keseluruhan kucing saya. \***

- Never / Tidak pernah
- Once / Sekali
- Rarely / Jarang
- Always / Sentiasa

<p><b>I always read or find information regarding cat dental health. / Saya selalu membaca atau mencari maklumat berkenaan kesihatan pergigian kucing. *</b></p> <p> <input type="radio"/> Never / Tidak pernah  <input type="radio"/> Once / Sekali  <input type="radio"/> Rarely / Jarang  <input type="radio"/> Always / Sentiasa         </p>	<p><b>I provide dental health products for my cats. / Saya menyediakan produk kesihatan pergigian untuk kucing saya. *</b></p> <p> <input type="radio"/> Never / Tidak pernah  <input type="radio"/> Once / Sekali  <input type="radio"/> Rarely / Jarang  <input type="radio"/> Always / Sentiasa         </p>
<p><b>I followed my veterinarian's advice on the decision to dental scaling my cats. / Saya mengikut nasihat doktor haiwan saya mengenai keputusan untuk penskaleran gigi kucing saya *</b></p> <p> <input type="radio"/> Never / Tidak pernah  <input type="radio"/> Once / Sekali  <input type="radio"/> Rarely / Jarang  <input type="radio"/> Always / Sentiasa         </p>	<p> <input type="button" value="Back"/> <input type="button" value="Submit"/> <input type="button" value="Clear form"/> </p> <p>Never submit passwords through Google Forms.</p> <p>This form was created inside of UMK Student's Webmail. Does this form look suspicious? <a href="#">Report</a></p> <p>Google Forms</p>
<p><b>I think dental scaling my cats brings more advantage than disadvantage. / Saya berasa bahawa penskaleran gigi kucing saya membawa lebih banyak kelebihan daripada keburukan. *</b></p> <p> <input type="radio"/> Never / Tidak pernah  <input type="radio"/> Once / Sekali  <input type="radio"/> Rarely / Jarang  <input type="radio"/> Always / Sentiasa         </p>	



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