FYP FPV

KNOWLEDGE, ATTITUDE AND PRACTICES OF OBESITY IN CATS AMONG PET OWNERS IN KELANTAN, MALAYSIA

By

ADIBAH SOFEA BINTI MUHAMMAD LUKMAN

A RESEARCH PAPER SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF DOCTOR OF VETERINARY MEDICINE

FACULTY OF VETERINARY MEDICINE
UNIVERSITI MALAYSIA KELANTAN

2025

FYP FPV

ORIGINAL LITERARY WORK DECLARATION

I hereby certify that the work embodied in this thesis is the result of the original research and has not been submitted for a higher degree to any other University or Institution.

☐	**OPEN ACCESS**	I agree that my thesis is to be made immediately available as hardcopy or online open access (full text).
☒	**EMBARGOES**	I agree that my thesis is to be made available as hard copy or online (full text) for a period approved by the Post Graduate Committee. Dated from 22/02/2026 until 22/02/2028.
☐	**CONFIDENTAL**	(Contains confidential information under the Official Secret Act 1972) *
☐	**RESTRICTED**	(Contains restricted information as specified by the organisation where research was done) *

I acknowledge that Universiti Malaysia Kelantan reserves the right as follows.

1. The thesis is the property of Universiti Malaysia Kelantan.
2. The library of Universiti Malaysia Kelantan has the right to make copies for the purpose of research only.
3. The library has the right to make copies of the thesis for academic exchange.

SIGNATURE OF CANDIDATE
NRIC/PASSPORT NO.: 021115030860
DATE: 25 NOVEMBER 2025

SIGNATURE OF SUPERVISOR
DR MUHAMMAD RASYDAN HADI BIN ROSLAN
DATE: 1 DECEMBER 2025

FYP FPV

ABSTRACT

Feline obesity is the most prevalent multifactorial nutritional disorder observed in domestic cats based on accumulation and deposition of fats (German, 2006, Zoran, 2010). Nowadays, it has been a popular preference for healthy felines to appear chubby as they seem cuter than ideal-sized cats. Therefore, this study investigates the knowledge, attitude, and practices (KAP) of cat owners in Kelantan regarding feline obesity. A validated cross-sectional survey was conducted online, with a total of 102 participants. The collected data were then analyzed descriptively, and associations between the variables were assessed using the Chi-square test and Pearson's correlation analysis with IBM SPSS Statistics version 27. The results revealed that most of the respondents demonstrated 'Good' knowledge, 'Good' attitude and 'Poor' practices towards feline obesity. Statistically, significant associations were observed between race and knowledge (p = 0.024), as well as race and attitude (p =0.024). Additionally, there were also statistically significant associations between race and practice (p = 0.034), including work status and practice (p < 0.01). On the other hand, the correlation analysis between attitude and practice showed a moderate positive relationship and was statistically significant (r = 0.299; p = 0.020), suggesting that a positive attitude is associated with good practice. These findings imply the importance of having knowledge with positive attitude as good practice towards pet cats. However, knowledge and practice levels exhibited a weak negative correlation analysis, which also did not reveal statistically significant (r = -0.141; p = 0.158), meaning that good knowledge may not influence practice in managing or preventing feline obesity.

Keywords*: Feline obesity, Knowledge, Attitude, Practice, cat owners*

UNIVERSITI MALAYSIA KELANTAN

FYP FPV

ABSTRAK

Kegemukan kucing merupakan gangguan pemakanan multifaktorial yang paling lazim diperhatikan dalam kucing domestik berdasarkan pengumpulan dan pemendapan lemak (German, 2006; Zoran, 2010). Pada masa kini, menjadi satu kecenderungan bahawa kucing yang kelihatan berisi dianggap lebih "sihat" kerana kelihatan lebih comel berbanding kucing bersaiz ideal. Oleh itu, kajian ini meneliti tahap pengetahuan, sikap dan amalan (KAP) pemilik kucing di Kelantan berkaitan kegemukan kucing. Satu kajian keratan lintang yang telah disahkan dijalankan secara dalam talian, melibatkan sejumlah 102 orang peserta. Data yang dikumpulkan dianalisis secara deskriptif, dan hubungan antara pemboleh ubah dinilai menggunakan ujian *Chi Square* dan analisis korelasi *Pearson* dengan perisian IBM SPSS Statistics versi 27. Keputusan menunjukkan bahawa majoriti responden mempunyai tahap pengetahuan 'Baik', sikap 'Baik' dan amalan 'Lemah' terhadap kegemukan kucing. Secara statistik, terdapat hubungan signifikan antara kaum dan pengetahuan ($p = 0.024$), serta antara kaum dan sikap ($p = 0.024$). Selain itu, terdapat juga hubungan signifikan antara kaum dan amalan ($p = 0.034$), termasuk antara status pekerjaan dan amalan ($p < 0.01$). Sementara itu, analisis korelasi antara sikap dan amalan menunjukkan hubungan positif sederhana yang signifikan secara statistik ($r = 0.299$; $p = 0.020$), menunjukkan bahawa sikap positif berkait dengan amalan yang baik. Penemuan ini menekankan kepentingan mempunyai pengetahuan yang disertai dengan sikap positif dalam menghasilkan amalan pengurusan yang baik terhadap kucing peliharaan. Namun begitu, tahap pengetahuan dan amalan menunjukkan hubungan negatif yang lemah serta tidak signifikan secara statistik ($r = -0.141$; $p = 0.158$), menandakan bahawa pengetahuan yang baik tidak semestinya mempengaruhi amalan dalam mengurus atau mencegah kegemukan kucing.

Kata kunci: Kegemukan kucing, Pengetahuan, Sikap, Amalan, pemilik kucing

FYP FPV

CERTIFICATION

This is to certify that we have read thish research paper entitled '**Knowledge, Attitude and Practice of Obesity in Cats Among Pet Owners in Kelantan, Malaysia'** by **Adibah Sofea Binti Muhammad Lukman,** and in our opinion, it is satisfactory in terms of scope, quality, and presentation as partial fulfilment of the requirements for the course DVT 55204 - Research Project.

Dr (V) Muhammad Rasydan Hadi Bin Roslan
DVM (UMK), MSc (UMK)
Lecturer
Faculty of Veterinary Medicine
Universiti Malaysia Kelantan
(Supervisor)

Dr Norhidayah Binti Noordin
DVM (UMK), MVSc (UPM)
Lecturer
Faculty of Veterinary Medicine
Universiti Malaysia Kelantan
(Co-Supervisor)

UNIVERSITI MALAYSIA KELANTAN

FYP FPV

ACKNOWLEDGEMENT

I would like to extend my deepest and most sincere gratitude to everyone who has supported me throughout the journey in completing my final year project. This achievement would not have been possible without the presence of encouragement, and unwavering belief of the people around me:

Dr Rasydan Hadi Bin Roslan

Dr Norhidayah Binti Noordin

My mother, Nik Mu'Minah Shafi'i

My father, Muhammad Lukman Ismail

My siblings – brother and sisters

Muhammad Azim Syahmi

Lycans

Lola, Luna, Leo and Lunar

Thank you

UNIVERSITI MALAYSIA KELANTAN

DEDICATION

First and foremost, I express my gratitude to Allah SWT for the countless blessings in health, strength and courage that allowed me to complete this final year project. Without His mercy and grace, I would not have the perseverance, clarity or resilience needed to navigate the challenges throughout this journey. Alhamdulillah for every ease granted after difficulty and for every answered prayer during times of uncertainty.

Next, I would like to convey my deepest appreciation to my supervisor, Dr Rasydan Hadi whose dedication, patience and wisdom have shaped my understanding and academic growth. Thank you for your continuous guidance, and constructive feedback on helping me to complete this project.

To my partner, Muhammad Azim Syahmi, thank you for your endless patience, understanding, and emotional support. Your constant reassurance, motivating words, and unwavering belief in my abilities gave me strength to continue on the toughest days. Your support means more to me than words can express.

To my beloved family, thank you for your unconditional love, sacrifices and continuous prayers. Your support has been the backbone of my journey till this last season of my study journey. Thank you for encouraging me, believing in me and providing me with the comfort and strength that guided me through each challenge.

To every individual who has contributed directly and indirectly, I extend my heartfelt gratitude. This final year project is not solely my achievement, but a shared success built upon the support, guidance and kindness of all people around me. Thank you for being a part of this meaningful chapter in my life :).

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

FYP FPV

TABLE OF CONTENT

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

LIST OF TABLES

FYP FPV

UNIVERSITI MALAYSIA KELANTAN

LIST OF ABBREVIATIONS

BCS	Body Condition Score
KAP	Knowledge, Attitude and Practice
OR	Odd Ratio
SPSS	Statistical Package for Social Sciences
WSAVA	World Small Animal Veterinary Association

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

LIST OF SYMBOLS

%	Percentage
χ^2	Chi-square
p	Probability value
<	Less than
>	Greater than
*	Asterisk
n	Number of respondent
r	Pearson Correlation Coefficient
e	Margin of error (percentage in decimal form)
z	z-score

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

CHAPTER 1

1.0 INTRODUCTION

1.1 Research Background

Feline obesity is widely defined as a body weight exceeding 20% above the ideal and is the most prevalent nutritional disorder observed in domestic cats, resulting from excessive accumulation and deposition of fat (German, 2006). Feline obesity is also known as the most common multifactorial nutritional disorder in pets, arising from genetic, environmental, metabolic and owner-related factors, making it one of the most challenging health issues in companion animal practice (Zoran, 2010; Tarkosova *et al*, 2016). Over recent decades, obesity has transitioned from being viewed as a cosmetic or a lifestyle concern to a more significant medical disorder with major implications for feline health and welfare. This disease not only affects the mobility and quality of life of the cat but can extend far beyond that.

Based on numerous studies, it has been emphasized that there is an association between obesity and a wide range of comorbidities, such as type 2 diabetes mellitus, osteoarthritis, cardiovascular diseases, hepatic lipidosis, dermatological problems and reduced in lifespan (German, 2006; Laflamme, 2006). Furthermore, it is also proven that obesity, whether in feline or human, can impair mobility that reduces the overall quality of life (Mansuri, 2025; Bjornvad & Hoelmkjaer, 2014). This will affect a cat's ability to engage in normal behaviours, such as grooming, play, and exercise (Bjornvad & Hoelmkjaer, 2014). Despite all these well-documented risks, obesity in cats is frequently ignored by pet owners often due to misperceptions about healthy feline body condition (Tarkosova *et al.,* 2016).

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

Globally, there is an increasing trend in prevalence of feline obesity, with studies from developed countries reporting rates ranging from 11.5% to more than 60%. This, however, depends on the geographical location, body condition scoring method used and study design (Colliard *et al*., 2009; Wall *et al.*, 2019; Saavedra *et al.,* 2024). This concerning progressive increment is influenced by numerous factors, such as less outdoor access, increase in urbanization, sedentary lifestyle of pets, and inappropriate feeding practices where pets are fed with energy-dense commercial diets, frequent treat-offering by owners, reliance on commercial dry feeds, and ad libitum feeding (Zoran, 2010; German, 2015; Russell *et al.,* 2000). The trends are further complicated by owner-related factors, such as misinterpretation and lack of knowledge of feeding guidelines, lack of awareness regarding feline obesity and emotional feeding (Laflamme *et al.,* 2008; Cave, 2013).

Lack of knowledge regarding feline obesity among cat owners is one of the contributing factors leading to increase in health problems. Misunderstanding, cultural perceptions of "cute" chubby cats, or lack of veterinary engagement such as not consulting a veterinarian regarding proper diet, or no veterinarian-client-patient relationship may contribute to poor consequences. Therefore, the information gathered is intended to assess the knowledge, attitude and practices of cat owners in Kelantan, aimed to establish and overcome the misperceptions and poor practices that lead to feline obesity thus improving feline health outcomes.

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

1.2 Research Problem Statement

While there is extensive research regarding feline obesity conducted in Europe, America and parts of Asia, however in Malaysia, especially in Kelantan, research regarding feline obesity is not well documented despite being a country with a rapidly growing pet-owning community (Standard Insights, 2023). This lack of local data acts as a challenge especially among the veterinarians and public health advocates in addressing feline obesity effectively. Therefore, this study aims to gain more data to obtain proper understanding and raise awareness against feline obesity by investigating the knowledge, attitude and practices of pet owners in Kelantan. By obtaining the gaps in knowledge, misconceptions and behavioural patterns that may predispose the cat to obesity, this study can aid as an evidence-based insight to increase targeted educational efforts, enhance veterinary-client communication and most importantly, promote healthier lifestyles for companion animals.

1.3 Research Questions

A. What is the level of knowledge of cat owners in Kelantan regarding feline obesity?
B. What are the attitudes of cat owners toward feline obesity and its management?
C. What are the current practices of pet owners to manage obesity in cats?
D. What are the factors associated with the level of KAP among the socio-demographic variables?

1.4 Research Hypothesis

A. Pet owners in Kelantan exhibit low levels of knowledge regarding feline obesity.
B. Pet owners in Kelantan demonstrate moderate attitudes toward feline obesity.
C. Pet owners in Kelantan demonstrate moderate practices toward feline obesity.
D. The socio-demographic factors are associated with the level of KAP.

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

1.5 Research Objectives

A. To determine the level of knowledge of cat owners regarding obesity in cats.

B. To determine the level of attitude of pet owners regarding obesity in cats.

C. To determine the various practices of pet owners regarding obesity in cats.

D. To determine the factors associated with the level of KAP among the socio-demographic variables.

FYP FPV

UNIVERSITI
MALAYSIA
KELANTAN

CHAPTER 2

2.0 LITERATURE REVIEW

2.1 Feline Obesity

Obesity is known to be the most significant consequence of nutritional disorders among cats and dogs, leading to a secondary health issue and reduced life expectancy (Laflamme, 2006). It is stated that obesity is defined as gain of body weight due to excessive deposition of adipose tissue which occurs secondary to increase in high calorie intake, based on Zoran (2006). Tarkosova *et al.,* (2016) stated that the collected data from many countries shows that between 11.5% to 63% of pet owners are most likely to have overweight cats. Other than feeding management such as type of diet and amount of feed given, breed, sex, age and reproductive status also proven to cause feline obesity (Ragaini *et al.,* 2023).

2.2 Factors Contributing to Feline Obesity

Feline obesity can occur due to owner-related factors and cat-related factors (Wall, 2019). Owner-related factors refer to improper management, decisions and behaviour made by cat owners that can directly or indirectly influence a pet's risk of becoming obese (Wall, 2019). In contrast, cat-related factors refer to the biological and intrinsic characteristics of the cat that influence the susceptibility to gain more weight compared to normal (Wall, 2019). Both factors play a major role in contributing to feline obesity.

Owner-related factors include feeding practices such as indulgent feeding, where owners provide excessive meals in response to begging or emotional cues (Wall *et al.,* 2019). Indulgent feeding is associated with low demand and high responsiveness, indicating the lack of knowledge on the care of the specific diet type and specific quantity of feed according to the feeding plan as essential in cats (Wall *et al.,* 2019). Similarly, ad libitum feeding, where

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

food is continuously available for the animal to consume allows companion animals to eat at any time without restrictions in quantity or timing. While it is convenient for the owners, this practice is believed to increase the overweight and obesity risks in cats (Russel *et al.,* 2000; Zoran, 2010). Other than that, it is proven that over time, ad libitum feeding can remove the natural satiety cues and promotes habitual overeating, affecting the normal eating behaviour of the cat (Laflamme, 2006; German, 2015).

Moreover, the common perception that overweight cats are "cuter" than cats with normal body weight may lead to misinterpretation of an ideal body condition (Wall *et al,* 2019). This misconception can result in owners overfeeding their pets with excessive amounts of protein, carbohydrates, and calories in an attempt to increase body weight, which may consequently contribute to significant weight gain and eventually obesity (Larsen, 2016). Other than that, the encouragement of a sedentary lifestyle towards indoor cats is also one of the owner-related factors. Indoor cats will have a lack of environmental enrichment and physical activity, which is crucial in maintaining a healthy body weight (German, 2015; Ragaini *et al.,* 2023). Reduced activity levels due to being indoors can lead to decreased calorie uses and fat accumulation over time. Therefore, having entertainment, such as cat treadmills and toys at home may help in motivating the cat to play and become more active indoors (Ragaini *et al.,* 2023). Apart from promoting physical health, it also improves their behavioural by allowing the cats to express natural hunting and exploratory behaviours.

Next, cat-related factors which include age, breed, genetic and neuter status. Age is a major determinant, where middle-aged cats have a higher risk of becoming overweight due to reductions in basal metabolic rate and natural activity levels (Tarrkosova *et al.,* 2016). Reduction in metabolic and behavioural changes will decrease the energy expenditure of a cat, making it easier for them to gain weight. Breed and genetic predisposition may also increase the risk of obesity in cats. Based on a study, certain breeds such as Burmese, are more prone

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

to develop obesity due to inherited differences in metabolism rate, body composition, or appetite regulation (Tarkosova *et al.*, 2016). Burmese cats may possess a lower metabolic rate compared to normal cats, that reduces the energy expenditure and thereby increasing the chances of excessive calorie intake. These inheritance patterns proved that even under proper management, obesity could still occur in certain breeds regardless.

Futhermore, neutering, is a surgical procedure of removing the reproductive tracts of the animals, that would affect both hormonal and metabolic regulations. The removal of gonadal hormones such as estrogen and testosterone may lead to reduction in metabolic rate, where they require smaller amounts of calories intake than usual. Concurrently, the normal appetite-regulating pathways were disrupted, leading to increase in hunger and feed intake (German, 2006; Larsen, 2016). Additionally, a neutered cat will exhibit a decrease in physical activity and eventually, reduce the daily energy expenditure (Tarkosova *et al.,* 2016). Over time, this will lead to obesity and was reported to be two to three times the probability of being overweight compared to intact cats (German, 2006; Larsen, 2016).

2.3 Methods to Determine Obesity

Obesity in cats can be evaluated by using subjective and objective approaches to accurately determine the body size. The Body Condition Score (BCS) is a standardized method that is commonly and widely used by veterinarians in assessing animal's fat coverage through visual inspection and palpation (Laflamme, 2006). The 9-point BCS scale is commonly applied in clinical settings, for various animal species such as cats, dogs, cows, horses and avians.

The 9-point scale classifies animals from emaciated (1/9) to severely obese (9/9), where 5/9 is considered ideal and 7/9 and above indicates overweight or obese. This method can be performed by evaluating certain characteristics such as the palpability of the ribs,

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

presence of fat pad over the lumbar and abdominal regions, and abdominal tuck (German, 2015). This method is easy to conduct, cost-effective, reliable, and can be performed by professionals, veterinarians as well as pet owners in assessing body weight of companion animals.

2.4 Clinical Consequences of Feline Obesity

Obesity in cats is known to cause a range of significant comorbidities that can affect health long-term. One of the common diseases resulting from obesity is the development of type 2 diabetes mellitus. Obese cats would have higher risk approximately four times more likely to develop type 2 diabetes mellitus as compared to cats with normal body weight (Prahl *et al.,* 2007). Additionally, obesity can lead to hepatic lipidosis or also known as fatty liver disease, a life-threatening condition. This disease is mostly triggered when obese cats become anorexic, commonly due to stress or infection (Smith, 2018). This condition causes the body to mobilize and utilize fats storage rapidly for energy, leading to excessive lipid accumulation within the hepatocytes (Smith, 2018).

Other than that, osteoarthritis is another common disease that can be caused by obesity (Saavedra, 2024). Excessive body weight will increase mechanical load on joints, contributing to cartilage degeneration, inflammation and chronic pain (Saavedra, 2024). A few studies have demonstrated that overweight cats usually exhibit a higher prevalence of degenerative joint disease, leading to reduction in mobility and discomfort during limb movement, as compared to ideal body weight cats (German, 2006; Lascelles et al., 2010). In overall, obesity affects the metabolism and hepatic function, as well as compromising the musculoskeletal health and animal welfare.

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

2.5 Treatment, Prevention and Management of Feline Obesity

Prompt actions are required to prevent obesity among pets, where the owners need to have good dietary management towards their pets (Laflamme, 2006). Feeding cats with an appropriate amount and type of diet is crucial especially for their health and growth development as overfeeding can lead to excessive calorie intake which aids in becoming obese (Laflamme, 2006). By having a proper mealtime and preventing indulgent feeding, these can aid in regulation of the calorie consumption of the cat could be managed (Saavedra, 2024). Additionally, proper behavioral and environmental enrichment can help to reduce obesity (German, 2015). Encouraging pets with physical activities through interactive playtime can promote exercise and stimulate musculoskeletal movement of cats by jumping and stretching (German, 2015).

Moreover, refraining from frequently giving treats and table scraps may reduce risk of obesity in cats (Laflamme, 2006). Many cat owners tend to give treats as a form of affection or behavioral reinforcement, that increases a significant level of caloric surplus if not properly adjusted in the overall feeding plan (Laflamme, 2006). Offering table scraps such as fatty meats, or processed foods would contribute to excessive calorie intake, and may pose harmful threats to their health (Laflamme, 2006).

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

CHAPTER 3

3.0 METHODOLOGY

3.1 Study Area

This study was conducted from 1st September 2025 to 14th November 2025 and focused on cat owners residing in all cities of Kelantan, Malaysia.

3.2 Study Design

The study used a cross-sectional design, where a set of validated questionnaires was distributed to cat owners to evaluate knowledge, attitude and practices of Kelantan cat owners regarding feline obesity.

3.3 Study Population

The study included cat owners living in Kelantan, Malaysia.

3.4 Selection Criteria

3.4.1 Inclusion Criteria

The inclusion criteria for this study involved cat owners living in Kelantan, Malaysia, aged at least 18-60 years old, must have at least one cat and willingly participate.

3.4.2 Exclusion Criteria

Exclusion criteria included cat owners aged less than 18 years old and not living in Kelantan. Both veterinarian and veterinary students were excluded from the study to prevent selection bias.

FYP FPV
UNIVERSITI
MALAYSIA
KELANTAN

3.5 Sampling Method and Procedure

The sampling method used in this study is non-probability sampling with convenience sampling method by conducting web-based questionnaires using Google Forms platform. The questionnaire was distributed across social media platforms such as Instagram, Facebook, Telegram and WhatsApp. Also, to ensure the responses are only from Kelantan residences, the questionnaire will be shared to specific groups or communities that live in Kelantan. To add on, at the beginning of the questionnaire, the inclusion and exclusion criteria were stated to ensure that only respondents from Kelantan filled in the questionnaire. The minimum sample size required was calculated based on the power calculation using the sample size formula. The calculation of the sample size use:

$$\text{Sample size (n)} = N \times \frac{\left[\frac{Z^2 \times p \times (1-p)}{e^2}\right]}{\left[N - 1 + \frac{Z^2 \times p \times (1-p)}{e^2}\right]}$$

N = population size, e = Margin of error (percentage in decimal form), z = z-score

The sample size for this study was determined by using a standard population proportion formula as 95% confidence level (Z= 1.96) assuming the population proportion of 0.5 to maximize sample size as there is absence of precise prevalence data, including the 10% margin of error that was used in other KAP studies (Charan & Biswas, 2013). Even though there are lack of studies regarding the number of cat owners in Kelantan, the national pet owner statistics indicates that about 51.1% of Malaysian at least owned a pet, and 77.7% out of them has a cat (Standard Insight, 2025). The estimated population size (N) was set at 90,000, representing the approximate number of households in Kelantan that has at least a cat as pet (DOSM, 2023) as there is lack of data regarding the total population. Therefore, the sample size was calculated and able to obtain sample size of 96 respondents. For better reliability, the sample size was rounded up to 100 respondents.

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

3.6 Data Collection Tools

The study used a self-administered questionnaire web-based through Google Form, that employed the quantitative KAP survey method and was validated by supervisor. The web-based questionnaires were shared through online platforms like social media such as Instagram, Facebook and WhatsApp across Kelantan-based pages and groups to prevent exclusion data. The questionnaire was divided into 5 sections, which are sociodemographic of pet owners and cat, knowledge, attitude and practices, featuring a mix of closed-ended and Likert scale queries to facilitate the quantitative examination. The knowledge section consisted of 7 items aimed at assessing and evaluating the general knowledge of feline obesity about the concept, risk factors, complications and prevention of obesity in cats. As for attitude, it consists of 7 questions which consist of the behavioral perception towards prevention of obesity in cats. 7 questions for practices were used in evaluating the actual compliance and uptake of various preventive measures among pet owners regarding feline obesity.

The cat owners' KAP levels were rated as 'poor', 'moderate' and 'good' using Bloom's cut-off criterion (Goni *et al.,* 2019). Incorrect responses in the knowledge section were assigned a score of 0, while the correct answers were assigned a score of 1 point, and the maximum knowledge score was 7. Thus, scores between 5 to 7 (above 60%) indicating 'good' knowledge, meanwhile the scores between 0 to 4 (below 60%) indicate 'poor' knowledge.

In the attitude section and practice sections, scoring was structured to examine the respondents' commitment and compliance to prevent obesity among cats. The highest possible scores represented the full marks on questions, while the minimum score was set at 20% of the total score for each section. As for the attitude, the Likert scale ranges from

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

'strongly agree', 'agree', 'disagree', and 'strongly disagree' which were scored from 4 to 1, respectively (Goni *et al.,* 2019). Scores were categorized as 'Good' if the points received are 80% or higher (23 to 28 points), that reflects a strong commitment; 'Moderate' if obtained 60-79% (17 to 22 points); and 'Poor' if received below 59% (0 to 16 points), indicate limited adherence.

Similarly, the practice section, having 4 points Likert scale ranging from 'Never', 'Rare', 'Sometimes', and 'Often', from 4 to 1 point. 'Good' scores were applied to over 80% (23 to 28 points), indicating consistent effort, 'Moderate' if obtained 60-79% (17 to 22 points) and 'Poor' for scores lower than 59% (0 to 16 points), indicate lack of practice. This framework helps in properly assessing the KAP towards feline obesity among companion animals.

3.7 Data analysis

The data obtained were statistically analyzed using the IBM Statistical Package for Social Sciences (SPSS) version 27. The categorical data from the socio-demographic variables were analysed descriptively and presented as frequency (percentage %). As for the numerical data, Pearson Correlation test was employed to determine the significant association between knowledge, attitude, and practice (KAP) domains towards feline obesity in Kelantan cat owners and the socio-demographic variables. The KAP association was evaluated, observed and was tabulated.

3.8 Ethical Approval

Human ethics approval was obtained from the Institutional Human Care and Use Committee, Faculty of Veterinary Medicine, Universiti Malaysia Kelantan *(UMK/FPV/HUMAN/EXT/0008/2025)* before commencement of the study. Data was

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

collected anonymously through a Google Form, and informed consent was obtained at the beginning of the questionnaire. Participation was voluntary and the respondent has the right to withdraw at any time.

FYP FPV

UNIVERSITI
MALAYSIA
KELANTAN

CHAPTER 4

4.0 RESULTS

4.1 Respondents Profile

The result of this study was computed respondents' profiles included 102 participants and highlighted the dominant characteristic among respondents' groups across multiple sociodemographic variables, shown in Table 4.1. Most respondents (n = 48, 47.05%) fell within the age range of 21-30 years. The most common gender group was female, representing (n = 57, 55.88%) followed by male (n = 45, 44.11%). In terms of race, most respondents identified as Malay, represented (n = 82, 80.39%). Regarding geographical area, the highest representation by state was from Kota Bharu (n = 38, 37.25%). Lastly, in terms of employment status, the largest reported respondents (n = 50, 49.02%) were full-time students participating throughout this study.

Table 4.1: Summary of Respondent (n = 102) Profile.

Socio-Demographic Characteristics		Total (n=102)	
		Frequency	%
Age	18-20	11	10.78
	21-30	48	47.05
	31-40	15	14.70
	41-50	15	14.70
	51-60	10	9.80
	60 and above	3	2.94
Gender	Male	45	44.11
	Female	57	55.88
Race	Malay	82	80.39

	Chinese	13	12.74
	Indian	7	6.86
City	Kota Bharu	38	37.25
	Pengkalan Chepa	14	13.73
	Pasir Puteh	9	8.82
	Machang	9	8.82
	Pasir Mas	7	6.86
	Bachok	5	4.90
	Jeli	5	4.90
	Wakaf Bharu	3	2.94
	Tumpat	2	1.96
	Tanah Merah	2	1.96
	Kuala Krai	2	1.96
	Gua Musang	1	0.98
Employment status	Student	50	49.02
	Civil Servant	25	24.51
	Private Sector	12	11.76
	Self-employed	10	9.80
	Unemployed	4	3.92
	Retired	1	0.98

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

4.2 Respondent Owned Cat's Information

Based on Table 4.2, the diversity of cat breeds among respondents' cats highlights a mix of local and international varieties. Most of the respondents own Domestic Short Hair cats (n = 57, 55.88%) which is a common local breed, often referred to as '*Kucing Kampung*' in Malaysia. Additionally, a significant presence of other breeds such as Domestic Long Hair (DLH), American Short Hair (ASH), Persian, Siamese, Bombay, British Shorthair (BSH), Maine Coon, Ragdoll and many other highly valuable purebreds were recorded. As for the number of cats owned, most respondents owned only 1 cat at their home (n = 40, 39.22%).

However, the lowest respondent's selection was 5 cats at home, with only 2.94% (n=3) of respondents falling into this group. The majority of owned cats (n = 33, 32.35%) fell within the age range of 2-4 years. Additionally, the highest cat diet provided by the owner was kibbles (n = 82, 37.25%), followed by kibbles mixed with soft food (n = 24, 23.53%). Some respondents also mentioned that they provide homemade food for their cats that comprises a variety of combinations such as rice mixed with chicken, steamed fish, raw fish, etc. Most common feed brand given to the cats was Smart Heart (n = 29, 28.43%), and followed by Royal Canin (n = 23, 22.55%). Overall, the most common cat weight recorded was less than 4 kg (n = 53, 52%) and followed by cat weight of more than 4 kg (n = 49, 48%).

Table 4.2: Summary of Respondents Owned Cat's Information.

Respondents Owned Cat's Information		**Total (n=102)**	
		Freq	**%**
Breed	Domestic Short Hair (DSH)	57	55.88
	Domestic Long Hair (DLH)	8	7.84
	British Short Hair	15	14.70

	(BSH)		
	American Short Hair (ASH)	2	1.96
	Maine Coon	4	3.92
	Siamese	3	2.94
	Ragdoll	2	1.96
	Bombay	1	0.98
	Persian	8	7.84
	Bengal	1	0.98
	Sphynx	1	0.98
Number of Cats Owned	1	40	39.22
	2	26	25.49
	3	12	11.76
	4	7	6.86
	5	3	2.94
	> 5	14	13.73
Age of Cat	1-6 Month	5	4.90
	7-12 Month	15	14.71
	1-2 Year	29	28.43
	2-4 Year	33	32.35
	> 4 Year	20	19.61
Cat Diet	Kibbles	38	37.25
	Soft Food	9	8.82
	Homemade Food	11	10.78
	Kibble & Soft Food	24	23.53
	Kibble & Homemade Food	6	5.90

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

	Kibble & Soft Food & Homemade Food	14	13.72
Cat Feed Brand	Smart Heart	29	28.43
	Royal Canin	23	22.55
	Whiskas	13	12.75
	Pro Diet	11	10.78
	Reflex	7	6.86
	Powercat	3	2.94
	Button and Bow	3	2.94
	Snappy Tom	2	1.96
	Others	11	10.78
Cat Weight	< 4 kg	53	52
	> 4 kg	49	48

4.3 Assessment of Knowledge Among Pet Owners Regarding Obesity in Cats

Most respondents (n = 100, 98%) were aware that obesity in cats is defined as an excessive accumulation of fat that can impair health status, and a strong majority (n = 101, 99%) understood that overweight and obesity in cats can lead to serious health problems such as diabetes mellitus, arthritis, and hepatic lipidosis, however only 1 (1%) respondents do not recognize that the effect of overweight and obesity could lead to cat's health condition. Nearly all participants (n = 100, 98%) agreed that feeding cats excessive amounts of feed, treats or human food can lead to obesity. The acknowledgement of obesity can affect all ages of cats highlight unexpected differences from other categories of data that respondents who agreed was n = 87, 85.3%.

In contrast, (n = 15, 14.7%) participants who were against obesity can affect all ages of cats. Additionally, lack of physical activity is one of the risk factors that can lead to the development of obesity in cats and obesity in cats can be prevented and managed through appropriate diet control, regular exercise, and routine veterinary check-ups recorded higher proportion of respondents, accounting (n = 100, 98%) respectively. Almost all respondents (n = 98, 96.1%) were aware that obesity in cats reduces life expectancy and overall quality of life. The data is documented in Table 4.3.

Table 4.3: Summary of Responses for Knowledge Variable Questions.

Knowledge	Total (n = 102)			
	True		False	
Question	**n**	**%**	**n**	**%**
Obesity in cats is defined as an excessive accumulation of fat that can impair health status.	100	98	2	2
Overweight and obesity in cats can lead to serious health problems such as diabetes mellitus, arthritis, and hepatic lipidosis.	101	99	1	1
Feeding cats excessive amounts of feed, treats or human food can lead to obesity.	100	98	2	2
Obesity can affect all ages of cats.	87	85.3	15	14.7
Lack of physical activity is one of the risk factors that can lead to the development of obesity in cats.	100	98	2	2
Obesity in cats can be prevented and managed through appropriate diet control, regular exercise, and routine veterinary check-ups.	100	98	2	2
Obesity in cats reduces life expectancy and overall quality of life.	98	96.1	4	3.9

4.4 Assessment of Attitude Among Pet Owners Regarding Obesity in Cat

Evidence from Table 4.5 showed most respondents (n = 50, 49%) strongly agreed that obesity in cats is a serious health issue that requires proper attention and management, while nearly half (n = 48, 47.1%) agreed that obese cats were worth receiving proper attention and management. Similarly, the majority (n = 50, 49%) strongly agreed that regular veterinary check-ups are important to monitor your cat's weight and body condition, while a few respondents (n = 2, 2%) strongly disagreed that regular health check-ups were insufficient for monitoring cat's weight.

In terms of dietary control, more than half (n = 54, 52.9%) strongly agreed that by allowing your cat to eat freely (without portion control) may lead to obesity, while few (n = 33, 32.4%) held a different view. Controlling the cat's diet and encouraging physical activity are essential for maintaining a healthy weight considered essential by many, comprising (n =60, 58.8%), while a considerable proportion (n = 38, 37.3%) with this statement. Only a very small fraction (n = 4, 3.9%) disagreed, indicating widespread recognition of the role of lifestyle management in weight control of their cat.

Similarly, when asked whether cat obesity is as important to address as other feline diseases such as diabetes or kidney disease, the majority (n = 54, 52.9%) strongly agreed, followed by nearly one-third (n =37, 36.3%) who agreed with the consequences. In terms of preventability, majority respondents viewed feline obesity as largely avoidable with proper care. More than half (n = 63, 61.8%) strongly agreed that obesity is preventable through appropriate care and lifestyle management, while (n = 4, 4%) disagreed/strongly disagreed, reflecting a general belief that owners play an important role in minimizing obesity risk.

FYP FPV
UNIVERSITI
MALAYSIA
KELANTAN

In contrast, opinions were more divided when respondents were asked whether overweight cats are just as healthy as cats with an ideal body weight. Over one-third (n = 36, 35.3%) strongly disagreed, and (n = 29, 28.4%) disagreed, indicating that most respondents recognized the health disadvantages associated with excess body weight. However, quarter of respondents (n = 20, 19.6%) strongly agreed, showing that some individuals may underestimate the health implications of feline obesity.

Table 4.4: Summary of Responses for Attitude Variable Questions.

Attitude	Total (n = 102)							
	Strongly Disagree		Disagree		Agree		Strongly Agree	
Question	n	%	n	%	n	%	n	%
Do you believe that obesity in cats is a serious health issue that requires proper attention and management?	1	1	3	2.9	48	47.1	50	49
Do you believe that regular veterinary check-ups are important to monitor your cat's weight and body condition?	2	2	6	5.9	44	43.1	50	49
Do you believe that allowing your cat to eat freely (without portion control) may lead to obesity?	2	2	13	12.7	33	32.4	54	52.9
Do you think controlling your cat's diet and encouraging physical activity are essential for maintaining a healthy weight?	0	0	4	3.9	38	37.3	60	58.8
Do you think that cat obesity is as important to address as other feline diseases (e.g., diabetes, kidney disease)?	4	3.9	7	6.9	37	36.3	54	52.9
Do you consider obesity in cats to be preventable with appropriate care and lifestyle management?	2	2	2	2	35	34.3	63	61.8
Do you believe that overweight cats are just as healthy as cats with an ideal body weight?	36	35.3	29	28.4	17	16.7	20	19.6

4.5 Assessment of Practice Among Pet Owners Regarding Obesity in Cats

As demonstrated in Table 4.5, regarding the respondent's practice addressing obesity in cats. A large proportion of respondents reported never practicing weighing their cat (n = 41, 40.2%) or doing so rarely (n = 39, 38.2%). A similar pattern was obtained for veterinary check-ups, where most respondents either (n = 41, 40.2%) never or (n = 44, 43.1%) rarely bring their pet cat for professional weight assessment. However, only a minority attended checkups often (n = 10, 9.8%), suggesting that regular veterinary monitoring is not widely practiced.

In terms of feeding patterns also reveal mixed level of respondents practice where nearly one-quarter (n = 25, 24.5%) reported never giving their cats snacks or treats while similar proportion (n = 20, 19.6%) practice it often, indicating variability in treat-giving habits that may contribute to weight gain in certain households. Regarding physical activity, most respondents provided at least some opportunities for their cats to be active, with smaller groups reported never (n = 25, 24.5%) engaging their cats in physical exercise, while a larger proportion did so sometimes (n = 34, 33.3%). In addition, diet adjustment practices showed a different trend, with most respondents adjusting their cat's diet infrequently. Nearly half (n = 43, 42.2%) reported never modifying feeding practices, while few respondents (n = 5, 4.9%) practice it often.

Self-education about feline nutrition and obesity prevention was also limited among respondents, with most respondents (n = 41, 40.2%) sought information from reading or online resources rarely, whereas fewer respondents engaged in learning often (n = 10, 9.8%). Similarly, monitoring a cat's eating frequency or feeding behaviour revealed a negative trend where a considerable portion (n = 34, 33.3%) reported never observing their cat eating behavior, meanwhile some respondents (n = 12, 11.8%) practice it often.

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

Table 4.5: Summary of Responses for Practice Variable Questions.

Practice	Total (n=102)							
	Never		Rarely		Sometimes		Often	
Question	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
How often do you monitor your cat's body weight at home to detect signs of being overweight or obesity?	41	40.2	39	38.2	13	12.7	9	8.8
How often do you bring your cat for veterinary check-ups to assess overall health and weight status?	41	40.2	44	43.1	7	6.9	10	9.8
How often do you give snacks or treats to your cat?	25	24.5	35	34.3	22	21.6	20	19.6
How often do you provide opportunities for your cat to engage in physical activities such as playing or exercising?	25	24.5	20	19.6	34	33.3	23	22.5
How often do you adjust your cat's diet or feeding practices?	43	42.2	37	36.3	17	16.7	5	4.9
How often do you educate yourself (e.g., reading, online resources) about proper nutrition, complications and obesity prevention in cats?	30	29.4	41	40.2	21	20.6	10	9.8
How often do you monitor your cat's eating speed or eating behavior?	33	32.4	34	33.3	23	22.5	12	11.8

4.6 Summary of Respondents' Level of Knowledge, Attitude and Practices

Referring to Table 4.7, most respondents demonstrated a strong level of knowledge, with the 'Good' category (scores 6 to 7) showing the highest proportion (n = 97, 95.10%), indicating that the majority possessed a sound understanding of the subject matter. Similarly, attitudes were largely positive, with the 'Good' attitude level (scores 23 to 28) accounting for more than half of the respondents (n = 60, 58.82%). In contrast, practice scores displayed a

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

markedly different pattern. The majority of respondents were categorised under the 'Poor' practice level (scores 0 to 16), representing (n = 65, 63.73%). These findings suggest that although respondents possessed strong knowledge and favourable attitudes, these strengths were not consistently translated into effective practical behaviours.

Table 4.6: Summary of Respondents' Level of Knowledge, Attitude and Practice.

Variables	Level	Score	n (%)
Knowledge	Poor	0 to 4	3 (2.94%)
	Moderate	5	2 (1.96%)
	Good	6 to 7	97 (95.10%)
Attitude	Poor	0 to 16	2 (1.96%)
	Moderate	17 to 22	40 (39.22%)
	Good	23 to 28	60 (58.82%)
Practice	Poor	0 to 16	65 (63.73%)
	Moderate	17 to 22	31 (30.39%)
	Good	23 to 28	6 (5.88%)

4.7 The Association Between Socio-Demographic Variables and KAP Scores for Knowledge

The majority of respondents with 'Good' knowledge (44%) were aged 21-30 years, although no significant association was found with age ($\chi^2 = 25.217$; $p = 0.450$). Female had the highest proportion of 'Good' knowledge (54 %), but the association with gender was not significant ($p > 0.05$; $\chi^2 = 0.402$), suggesting males were less likely to have 'Good' knowledge. In term of race, Malay held the highest number of respondents with 'Good' knowledge (81%),

with statistical association (χ^2 = 20.547; p = 0.024). According to the city distribution, Kota Bharu had the highest number of respondents with 'Good' knowledge (39%), but the association was not significant (χ^2 = 34.193; p = 0.997). Regarding employment status, students had the highest proportion of 'Good' knowledge (48%), but the association was not significant (χ^2 = 24.571; p = 0.487) represented in Table 4.7.

Table 4.7: Summary of the Association Between Socio-Demographic Variables and Knowledge.

Variable		Knowledge			Chi-square (χ^2)	P-value
		Good	Moderate	Poor		
Age (year)	18-20	10	0	1	25.217	0.450
	21-30	44	2	2		
	31-40	15	0	0		
	41-50	15	0	0		
	51-60	10	0	0		
	> 60	3	0	0		
Gender	Male	43	2	0	5.117	0.402
	Female	54	0	3		
Race	Malay	81	1	0	20.547	0.024*
	Chinese	13	0	0		
	Indian	5	1	1		
City	Bachok	5	0	0	34.193	0.997
	Gua Musang	1	0	0		
	Jeli	5	0	0		
	Kota Bharu	39	0	1		

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

	Kuala Krai	1	0	0		
	Machang	8	1	0		
	Pasir Mas	7	0	0		
	Pasir Puteh	8	0	1		
	Pengkalan Chepa	12	1	1		
	Pengkalan Kubor	5	0	0		
	Tanah Merah	1	0	0		
	Tumpat	2	0	0		
	Wakaf Bharu	3	0	0		
Employment status	Civil servant	24	0	1	24.571	0.487
	Self-employed	10	0	0		
	Private sector	10	1	1		
	Student	48	1	1		
	Un-employed	4	0	0		
	Others	1	0	0		

P-value with asterisk (*) is significant (p<0.05)

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

4.8 The Association Between Socio-Demographic Variables and KAP Scores for Attitude

Most of the respondents exhibiting 'Good' attitudes (28.43%) and ‘Poor’ attitudes (0.98%) fell within the 21–30 age group; however, the association between age and attitude level was not statistically significant (χ^2 = 65.779; p = 0.450) (Table 4.9). In addition, females were more likely to obtain a higher ‘Good’ attitude (36.27%) compared to male (22.55%), however the association was not significant (χ^2 =17.291; p =0.186). As for the race, Malay held the highest number of respondents with a 'Good' attitude (50%), with significant association between the race and attitude level (χ^2 =42.057; p =0.024). By geographic distribution, respondents from Kota Bharu demonstrated the highest proportion of 'Good' attitudes (22.55%) with no significant association. Lastly, for employment status, students had the highest proportion of ‘Good’ attitude (34.31%), and the association was not significant (χ^2 = 57.650; p = 0.730).

Table 4.8: Summary of the Association Between Socio-Demographic Variables and Attitude.

Variable		Attitude			Chi-square (χ^2)	P-value
		Good	Moderate	Poor		
Age (year)	18-20	10	1	0	65.779	0.450
	21-30	29	18	1		
	31-40	5	10	0		
	41-50	8	6	1		
	51-60	8	2	0		
	> 60	0	3	0		

Gender	Male	23	21	1	17.291	0.186
	Female	37	19	1		
Race	Malay	51	30	1	42.057	0.024*
	Chinese	6	7	0		
	Indian	3	3	1		
City	Bachok	4	1	0	148.784	0.647
	Gua Musang	1	0	0		
	Jeli	3	2	0		
	Kota Bharu	23	15	0		
	Kuala Krai	1	1	0		
	Machang	1	6	2		
	Pasir Mas	5	2	0		
	Pasir Puteh	7	2	0		
	Pengkalan Chepa	9	5	0		
	Pengkalan Kubor	1	4	0		
	Tanah Merah	2	0	0		
	Tumpat	1	1	0		
	Wakaf Bharu	2	1	0		
Employment status	Civil servant	14	10	1	57.650	0.730

FYP FPV
UNIVERSITI
MALAYSIA
KELANTAN

Self-employed	3	7	0
Private sector	4	7	1
Student	35	15	0
Un-employed	3	1	0
Others	1	0	0

P-value with asterisk (*) is significant (p<0.05)

4.9 The Association Between Socio-Demographic Variables and KAP Scores for Practice

According to Table 4.10, respondents aged 21–30 constituted the largest proportion of both poor practices (30.39%), moderate (13.73%) and good practices (2.94%). However, the association between age and practice level was not statistically meaningful (χ^2 =96.870; p = 0.427). Female participants recorded the highest percentages of poor practice (34.31%), yet this relationship was not statistically significant (χ^2 =18.012; p =0.522). Malay shown highest number with 'Poor' knowledge (50%), and the association was significant between races and practice score (χ^2 = 55.318; p = 0.034). In terms of geographical distribution, Kota Bharu had the greatest representation of respondents with ‘Poor’ (19.61%) and ‘Good’ practices (16.67%), although this association was also not significant (χ^2 =230.779; p = 0.436). Finally, for employment status, students had the highest proportion of ‘Poor’ practice (29.42%), and the association was significant (χ^2 =174.480; p < 0.01).

Table 4.9: Summary of the Association Between Socio-Demographic Variables and Practice.

Variable		Practice			Chi-square (χ^2)	P-value
		Good	Moderate	Poor		
Age (year)	18-20	1	6	4	96.870	0.427
	21-30	3	14	31		
	31-40	0	3	12		
	41-50	2	4	9		
	51-60	0	3	6		
	> 60	0	1	2		
Gender	Male	3	12	30	18.012	0.522
	Female	3	19	35		
Race	Malay	3	28	51	55.318	0.034*
	Chinese	2	3	9		
	Indian	1	0	5		
City	Bachok	1	1	3	230.779	0.436
	Gua Musang	0	0	1		
	Jeli	0	1	4		
	Kota Bharu	1	17	20		
	Kuala Krai	0	0	2		
	Machang	0	1	8		

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

	Pasir Mas	0	4	3		
	Pasir Putih	0	2	7		
	Pengkalan Chepa	2	4	8		
	Pengkalan Kubor	1	0	4		
	Tanah Merah	0	1	1		
	Tumpat	0	2	0		
	Wakaf Bharu	0	0	3		
Employment status	Civil servant	0	6	8	174.480	<0.001*
	Self-employed	0	3	7		
	Private sector	1	5	7		
	Student	4	16	30		
	Un-employed	0	1	3		
	Others	1	0	0		

P-value with asterisk (*) is significant (p<0.05)

The expected result will reveal various levels of knowledge, attitudes, and practices regarding feline obesity among cat owners in Kelantan. It is estimated that only a small percentage of participants may exhibit a low level of knowledge of obesity in cats. Also, it is speculated that owners would exhibit a medium level of attitude regarding feline obesity. Lastly, cat owners in Kelantan demonstrate medium practices in reducing, preventing and managing feline obesity.

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

4.10 Correlation Analysis Between Knowledge, Attitude and Practice

The correlation analysis among knowledge level, attitude level, and practice level regarding obesity in cats among cat owners in Kelantan, Malaysia, revealed a varied relationship. Knowledge and attitude demonstrate a poor positive correlation with no significant association (r = 0.149; p = 0.136). However, knowledge and practice levels showed a poor negative correlation and not significant (r = - 0.141; p = 0.158). Additionally, the correlation between attitude and practice levels was fair correlations and revealed statistically significant (r = 0.299; p = 0.02). These findings suggest that while attitude influences practice, it is still highly regarded that practice plays a more critical role in shaping practices related to obesity in cats. Data was illustrated in Table 4.10.

Table 4.10: Summary of the Correlation Analysis Between Knowledge, Attitude and Practice level.

Variables	Person Correlation Coefficient (r)	P-value
Knowledge - Attitude	0.149	0.136
Knowledge - Practice	-0.141	0.158
Attitude - Practice	0.299	0.02*

P-value with asterisk (*) is significant (p<0.05)

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

CHAPTER 5

5.0 DISCUSSION

This study was conducted as there is a lack of recent published literature in evaluating the knowledge, attitude and practices (KAP) towards obesity in cats among cat owners in Kelantan, Malaysia. However, there are a few limitations of the study, as such the geographical limitation where the study was only conducted in Kelantan, Malaysia. This limits the generalizability of the results to other regions of Malaysia with different socio-demographic and cultural backgrounds. Furthermore, Kelantan is a more rural and semi-urban compared to other states such as Kuala Lumpur and Selangor. Therefore, the findings might not be representative of cat owners in other regions of Malaysia with diverse socio-cultural backgrounds. Other than that, a sample size of 102 is adequate for exploratory analysis, however it limits statistical power and may reduce detection of weaker associations, as well as Chi-Square results may be affected by small amount of sample size. Therefore, a much bigger and proper sample size is required to obtain a more accurate result of data. Next, online convenience sampling may have led to selection bias, where younger and student respondents being over-represented as they are mostly active in the social media platform. This then will lead to lower responses from other age groups as they do not use social media platforms too often or do not use them at all. Therefore, a convenience sampling that is done physically is better to obtain all socio-demographic variables of cat owner that consist of older respondents and those that live in the area without internet access.

The results from this research showed the sociodemographic analysis revealed that a large proportion of the respondents (47.05%) consist of individuals aged between 21 and 30 years, indicating that the majority of cat owners are among young adults. Based on a study by

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

Jamilah *et al.* (2015), it is proven that the majority of social media users in Malaysia are youth, allowing them to be exposed to cat-related contents which contributes to this higher participation in online questionnaires. Next, the gender distribution showed that the majority of respondents are female (55.88%), indicating that mostly females have higher interest in feline ownership. This is because female owners are drawn to cats due to their affectionate nature, calm temperament and cuteness that align with preferences reported among women. In comparison to male, who would like to own an animal that is suitable with their masculinity, image and trustworthy companions such as dogs.

Additionally, from an ethnicity perspective, Malay respondents have a higher proportion (80.39%) compared to Chinese and Indians, which is expected given that Kelantan's population is predominantly Malay, comprising 94% of its residents (*Etnik Melayu*, 2022). As expected, most respondents were from Kota Bharu (37.25%) attributed to the larger population and more urban environment. Additionally, most respondents were students (49.02%), which is expected as the online survey was primarily blasted through various university social media channels. Also, students tend to be more active on digital platforms, which is likely contribute to the higher participation rate from this group.

As for the owned cat's owned information, it is recorded that most of the respondents (37.25%) fed their cats with kibbles and few of them mentioned that they provide homemade food to their cats, that comprises a variety of combinations such as rice mixed with chicken, steamed fish, and raw fish. It is important to note that primarily relying on dry kibbles or offering nutritionally unbalanced homemade diets such as rice, may increase the risk of obesity as those have higher adiposity and excess calories content (La Flamme, 2019; Wall, 2025).

Overall, the findings for the knowledge section show that the majority of the cat owners in Kelantan, Malaysia are aware and have good understanding towards feline obesity.

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

However, 14.7% of the respondents believed that obesity does not affect all ages of cats. Based on a previous study, it mentioned that obesity can also occur in young cats aged as early as 12-13 months of age, while it is more commonly observed in cats aged between 5 to 11 years, likely due to gradual decline in metabolic rate over time (Saavedra *et al.,* 2024). Also, only 96.1% of respondents acknowledged that feline obesity could reduce life expectancy while the remaining disagreed. This perception is supported by a few studies where obese cats exhibit a 2.8-fold higher mortality rate compared to ideal body weight cats (Alessandra *et al.,* 2025; *Southside Animal Clinic,* 2024). Feline obesity can lead to systemic inflammation, cardiovascular diseases and metabolic dysregulation, which contribute to shortening the lifespan of cats (Alessandra *et al.,* 2025).

Next, the result for the attitude section revealed that cat owners show a good perspective in assessing, determining and preventing feline obesity, but some misconceptions persist despite the result. It is calculated that 14.7% of the respondents believe obesity will not occur even if they allow the cat to eat freely. This reflects the gap in understanding the relation of portion control and regulated feeding. Based on research, it mentioned that free feeding can expose cats to obesity, especially if the cat is given kibbles as daily diet (Teng *et al.,* 2020). Additionally, feeding wet food is beneficial as it has higher moisture, protein and fat content, leading to cats feeling fuller with less calories compared to kibbles (Teng *et al.,* 2020). Similarly, 9.9% of respondents disagree that preventing feline obesity is as important as managing other feline diseases such as kidney and cardiovascular diseases. However, a well-documented study mentioned that the primary development of obesity can lead to secondary metabolic and cardiovascular abnormalities, indicating that it has been linked to numerous life-threatening diseases (Alessandra *et al.,* 2025). Additionally, obesity can also compromise their mobility and quality of life, which can instantly increase the mortality rate (Saavedra *et al.*, 2024).

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

Other than that, 36.3% of the respondents agree that overweight cats are just as healthy as cats with an ideal body weight, which is a misconception. Overweight or obese cats have a higher tendency in developing various health problems compared to ideal weight cats. Excess body fats in cats can contribute to impairment of glucose metabolism and insulin resistance, which leads to the development of diabetes mellitus type-2 (Phillips *et al.,* 2017). Therefore, maintaining an ideal body weight is essential in preventing diseases among companion animals.

From the result of practice sections, cat owners in Kelantan exhibit poor implementation of control, management and prevention of feline obesity. About 78.4% of the respondents have never or rarely monitored their cat's body weight at home in order to detect signs of being overweight, which is very important in prevention of obesity. Cat owners often miss the early signs of being overweight, such as changes in body condition score, reduction in physical activity and frequent eating, which then develops obesity as they tend to be busy with their work, study and daily routine.

In addition, based on several studies, it mentioned that some pet owners lack awareness in utilizing Body Condition Score (BCS) systems (Naughton *et al.,* 2022). This suggests that a portion of the respondents lack knowledge of proper body condition assessment for their pet cat. According to another study in Italy, about 77.6% of the owners claimed that their veterinarians never educated or mentioned that their cat was overweight (Arena *et al.,* 2021). This indicates that there is a lack of awareness towards the owner regarding feline obesity and lack of bond between veterinarian-owner relationships. Similarly, a total of 83.3% of the respondents never or rarely bring their pet cats for veterinary health examinations to assess overall health and weight status. This is because most pet owners will bring their cats to the veterinary clinic only if they are sick or injured. However, annual

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

vaccination allows cats to get a proper health assessment every year, but there is still a lack of awareness and compliance with routine vaccination among cat owners.

Surprisingly, about 41.2% cat owners sometimes or frequently provide snacks or treats to their cats. Frequent or overindulging treats to cats can lead to weight gain, nutritional imbalances and lead to other health problems. Also, research has shown that many cat caregivers poorly estimate the treat quantity and often rely on 'eyeball' method rather than an accurate measurement, which leads to inadvertent overfeeding (Nielson *et al.,* 2024). Based on the World Small Animal Veterinary Association (WSAVA), treats should be provided not more than 10% of a cat's daily calorie intake, as treats are not nutritionally complete for cats, and can disrupt a balanced diet. Therefore, it is very essential for cat owners to choose cat treats that are high quality in ingredients and well formulated with balanced nutrition and given in proper amounts to ensure that even when the treats are offered, the cat still can maintain a healthy life.

Additionally, about 44.1% of cat owners never or rarely provide opportunities for their cat to engage in physical activities such as playing and exercising. From this study, most of the owners (39.22%) owned only 1 cat per household, that may limit the social interaction of cats, as cats are social animals and benefit from companionship or interactive engagement with other cats to express their natural behaviours. Lack of physical activity combined with being kept indoors can lead to the development of obesity (Laflamme, 2010). Therefore, it is encouraged for owners to provide interactive toys, climbing structures, regular play sessions or provide companions to ensure that indoor cats can still maintain adequate exercise rate and mental engagement.

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

Overall, despite having a high level of knowledge and a positive attitude, this does not necessarily mean that cat owners have a high level of practice in terms of controlling, managing, and preventing feline obesity. The correlation analysis revealed varieties degrees of association between these components. Knowledge and attitude demonstrated a weak positive correlation and was not a statistically significant relationship ($r = 0.149$; $p = 0.136$). This indicates that higher level of knowledge regarding feline obesity does not necessarily correspond to a more positive attitude. Similarly, knowledge and practice levels exhibited a weak negative correlation analysis which also did not reveal statistically significant relationships ($r = -0.141$; $p = 0.158$), meaning that good knowledge may not influence practice in managing or preventing feline obesity. On the other hand, the correlation analysis between attitude and practice was a moderately positive and statistically significant relationship ($r = 0.299$; $p = 0.020$), suggesting that positive attitude is associated with good practice. These findings imply that while knowledge is important, a positive attitude towards their cat's health condition will likely implement better practices.

FYP FPV
UNIVERSITI
MALAYSIA
KELANTAN

CHAPTER 6

6.0 CONCLUSION AND RECOMMENDATIONS

This study demonstrates that while many cat owners possess moderate to good knowledge and generally positive attitudes towards feline obesity, however, a clear gap persists between awareness and actual action by the owner, as reflected in the poor practice score observed in the KAP analysis. Owners recognise the health risk associated with obesity and express supportive attitude towards preventive care, yet inconsistent feeding routine and limited engagement in weight-monitoring practice contribute to continuous challenges in managing feline body condition. These data indicate that knowledge and attitudes alone are insufficient without consistent reinforcement, and highlight the importance of target, practical intervention to enhance daily caregiving practice towards managing obese cats.

To address these gaps, educational approaches should be prioritized in transforming knowledge into practice routine veterinary clinics, universities and animal welfare organizations together with non-government organizations (NGO) can collaborate to deliver structural nutritional advice and body condition scoring demonstration towards the pet cat owners. Since many owners rely on digital channels, reliable information should be shared via online seminars, veterinary organisations, and clinic-managed social media profiles to provide consistent and verified advice. In addition, clear educational content distributed at pet shops and during veterinary visits may further support owners who struggle with cat feeding management or misinterpret feeding labels in their cat diets.

As for the recommendation, future research should seek to strengthen and refine the KAP database to improve its usefulness for reference and comparison. Expanding the sample size to include more diverse demographic groups such as respondents across Malaysia which are not limited to Kelantan only, breeder, multi-cat household, shelters, and rural respondents

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

would reduce sampling imbalance and provide more representative insight. Incorporating validated KAP scoring cross-regional comparisons or collaboration with multiple veterinary clinics could further enhance data richness and strengthen external validity. Through these methodological enhancements, will help to develop better positioned, reliable, and widely clearer understanding of knowledge and attitude patterns into feline obesity management and support more effective practical strategies by the cat owners aimed at improving companion-animal welfare.

FYP FPV

UNIVERSITI
MALAYSIA
KELANTAN

REFERENCES

Alessandra, Rosa, A. G., Silva, B. da, Madel, J., & Yonezawa, L. A. (2025). Metabolic and cardiovascular effects of obesity in domestic cats. *Veterinary Research Communications*, *49*(6). https://doi.org/10.1007/s11259-025-10929-z

Arena, L., Menchetti, L., Diverio, S., Guardini, G., Gazzano, A., & Mariti, C. (2021). Overweight in Domestic Cats Living in Urban Areas of Italy: Risk Factors for an Emerging Welfare Issue. *Animals*, *11*(8), 2246. https://doi.org/10.3390/ani11082246

Bjornvad, C., & Hoelmkjaer, K. M. (2014). Management of obesity in cats. *Veterinary Medicine: Research and Reports*, *5*, 97. https://doi.org/10.2147/vmrr.s40869

Canadian Academy of Veterinary Nutrition (CAVN). (2024). *Overweight, Obesity, and Pain in Cats: Prevention and Action Plans | VCA Animal Hospitals*. Vca. https://vcahospitals.com/know-your-pet/overweight-obesity-and-pain-in-cats-prevention-and-action-plans

Charan, J., & Biswas, T. (2013). How to calculate sample size for different study designs in medical research? Indian Journal of Psychological Medicine, 35(2), 121–126. https://doi.org/10.4103/0253-7176.116232

Colliard, L., Paragon, B.-M., Lemuet, B., Bénet, J.-J., & Blanchard, G. (2009). Prevalence and risk factors of obesity in an urban population of healthy cats. *Journal of Feline Medicine and Surgery*, *11*(2), 135–140. https://doi.org/10.1016/j.jfms.2008.07.002

Cornell Feline Health Center. (2017, October 16). *Obesity*. Cornell University College of Veterinary Medicine. https://www.vet.cornell.edu/departments-centers-and-institutes/cornell-feline-health-center/health-information/feline-health-topics/obesity

Department of Statistics Malaysia (DOSM) (2023). *Population and housing census of Malaysia etnik Melayu*. (2022, June 27). Wikipedia.org; Yayasan Wikimedia Bhd. https://ms.wikipedia.org/wiki/Orang_Melayu_Kelantan

FYP FPV

German, A. J. (2006). The growing problem of obesity in dogs and cats. *The Journal of Nutrition*, *136*(7), 1940S1946S. https://doi.org/10.1093/jn/136.7.1940s

German, A. J. (2015). Weight management in dogs and cats. *Acta Veterinaria Scandinavica*, *57*(Suppl 1), K7. https://doi.org/10.1186/1751-0147-57-s1-k7

Goni, M. D., Naing, N. N., Hasan, H., Wan-Arfah, N., Deris, Z. Z., Arifin, W. N., Hussin, T. M. a. R., Abdulrahman, A. S., Baaba, A. A., & Arshad, M. R. (2020). Development and validation of knowledge, attitude and practice questionnaire for prevention of respiratory tract infections among Malaysian Hajj pilgrims. BMC Public Health, 20(1), 189. https://doi.org/10.1186/s12889-020-8269-9

Hamdan, M. A., Yusof, M. F., Ahmad, H. F., Musa, M., Ramli, N. M., & Razali, M. N. (2024). Macronutrients Comparison of Commercial Cat Foods in Malaysia. *Sarhad Journal of Agriculture*, *40*(s1). https://doi.org/10.17582/journal.sja/2024/40/s1.122.129

Hoffmann, R., Lagerkvist, C. J., Hagberg Gustavsson, M., & Holst, B. S. (2018). An empirical examination of the conceptualization of companion animals. *BMC Psychology*, *6*(1). https://doi.org/10.1186/s40359-018-0228-1

Jamilah, Hj. A., Nurzali, I., & Nur Nasliza Arina, N. (2015). *(PDF) Investigating Malaysian Youth's Social Media Usage, Competencies and Practice with regard to Crime Prevention: An Application of the Social Media Literacy Model*. https://www.researchgate.net/publication/303306531_Investigating_Malaysian_Youth

Laflamme, D. P. (2006). Understanding and managing obesity in dogs and cats. *The Veterinary Clinics of North America. Small Animal Practice*, *36*(6), 1283–1295, vii. https://doi.org/10.1016/j.cvsm.2006.08.005

Laflamme, D. P., Abood, S. K., Fascetti, A. J., Fleeman, L. M., Freeman, L. M., Michel, K. E., Bauer, C., Kemp, B. L. E., Doren, J. R. V., & Willoughby, K. N. (2008). Pet feeding

FYP FPV

practices of dog and cat owners in the United States and Australia. *Journal of the American Veterinary Medical Association*, *232*(5), 687–694. https://doi.org/10.2460/javma.232.5.687

Laflammme D. (2019). Focus on Nutrition: Cats and carbohydrates: implications for health and disease. *Compendium (Yardley, PA)*, *32*(1). https://pubmed.ncbi.nlm.nih.gov/20473847/

Langfelder, N. (2023, July 18). *The truth about cats and dogs*. Data Axle. https://www.data-axle.com/resources/blog/the-truth-about-cats-and-dogs/

Larsen, J. A. (2016). Risk of obesity in the neutered cat. *Journal of Feline Medicine and Surgery*, *19*(8), 779–783. https://doi.org/10.1177/1098612x16660605

Lascelles, B. D. X., Henry, J. B., III, Brown, J., Robertson, I., Sumrell, A. T., Simpson, W., Wheeler, S., Hansen, B. D., Zamprogno, H., Freire, M., & Pease, A. (2010). Cross-Sectional study of the prevalence of radiographic degenerative joint disease in domesticated cats. *Veterinary Surgery*, *39*(5), 535–544. https://doi.org/10.1111/j.1532-950x.2010.00708.x

Mansuri, A. (2025, October). *Can Obesity Affect Mobility?* Healthline; Healthline Media. https://www.healthline.com/health/obesity-and-mobility

Naughton, V., Grzelak, T., Mulhern, M. S., Moffett, C. R., & Naughton, P. J. (2022). Association between Socio-Demographic Factors and Owners' Beliefs and Attitudes to Pet Cats Fundamental Dietary and Physical Exercise Needs, in City of Belfast. *Animals*, *12*(19), 2645. https://doi.org/10.3390/ani12192645

Nick Cave. (2025). *The Human Factor to Feeding Pets - WSAVA2013 - VIN*. Vin.com. https://www.vin.com/apputil/content/defaultadv1.aspx?pId=11372&id=5709751

Nielson, S. A., Khosa, D. K., Adronie Verbrugghe, & Clow, K. M. (2024). Cat caregivers' perceptions, motivations, and behaviours for feeding treats: A cross sectional study.

FYP FPV

PLOS ONE, *19*(1), e0296011–e0296011. https://doi.org/10.1371/journal.pone.0296011

O'Connell, E. M., Williams, M., Holden, S. L., Biourge, V., & German, A. J. (2018). Factors associated with overweight cats successfully completing a diet-based weight loss programme: an observational study. *BMC Veterinary Research*, *14*. https://doi.org/10.1186/s12917-018-1740-5

Phillips, A. M., Coe, J. B., Rock, M. J., & Adams, C. L. (2017). Feline Obesity in Veterinary Medicine: Insights from a Thematic Analysis of Communication in Practice. *Frontiers in Veterinary Science*, *4*. https://doi.org/10.3389/fvets.2017.00117

Prahl, A., Guptill, L., Glickman, N. W., Tetrick, M., & Glickman, L. T. (2007). Time trends and risk factors for diabetes mellitus in cats presented to veterinary teaching hospitals. *Journal of Feline Medicine and Surgery*, *9*(5), 351–358. https://doi.org/10.1016/j.jfms.2007.02.004

Purina Australia. (2025). *Cat Treats Do's and Don'ts - Purina Australia*. Purina.com.au; Purina Australia. https://www.purina.com.au/cat-treats-dos-and-donts.html

Russell, K., Sabin, R., Holt, S., Bradley, R., & Harper, E. J. (2000). Influence of feeding regimen on body condition in the cat. *Journal of Small Animal Practice*, *41*(1), 12–18. https://doi.org/10.1111/j.1748-5827.2000.tb03129.x

Saavedra, C., Pérez, C., Oyarzún, C., & Ángelo Torres-Arévalo. (2024). Overweight and obesity in domestic cats: epidemiological risk factors and associated pathologies. *Journal of Feline Medicine and Surgery*, *26*(11). https://doi.org/10.1177/1098612x241285519

Smith, K. (2018, April 17). *A Nutritional Approach to Feline Hepatic Lipidosis*. Veterinary Practice. https://www.veterinary-practice.com/article/a-nutritional-approach-to-feline-hepatic-lipidosis

FYP FPV

Standard Insights. (2023, May 17). *A Closer Look at Pet Ownership in Malaysia*. Standard Insights. https://standard-insights.com/insights/pet-ownership-in-malaysia/

Southside Animal Clinic. (2024). *Obesity in cats*. Southside Animal Clinic. Retrieved from https://southsideanimalclinic.org/files/2024/07/Obesity-in-Cats.pdf

Tarkosova, D., Story, M., Rand, J., & Svoboda, M. (2016). Feline obesity – prevalence, risk factors, pathogenesis, associated conditions and assessment: a review. *Veterinární Medicína*, *61*(No. 6), 295–307. https://doi.org/10.17221/145/2015-vetmed

Teng, K. T., McGreevy, P. D., Toribio, J.-A. L. M. L., & Dhand, N. K. (2020). Positive attitudes towards feline obesity are strongly associated with ownership of obese cats. *PLOS ONE*, *15*(6), e0234190. https://doi.org/10.1371/journal.pone.0234190

Valtolina, C., & Favier, R. P. (2017). Feline hepatic lipidosis. *Veterinary Clinics of North America Small Animal Practice*, *47*(3), 683–702. https://doi.org/10.1016/j.cvsm.2016.11.014

Wall, M., Cave, N. J., & Vallee, E. (2019). Owner and Cat-Related Risk Factors for Feline Overweight or Obesity. *Frontiers in Veterinary Science*, *6*(266). https://doi.org/10.3389/fvets.2019.00266

Wall, T. (2025, July 8). *Carbs may not increase cats' body fat or insulin resistance*. PetfoodIndustry. https://www.petfoodindustry.com/nutrition/research-notes/article/15750169/carbs-may-not-increase-cats-body-fat-or-insulin-resistance

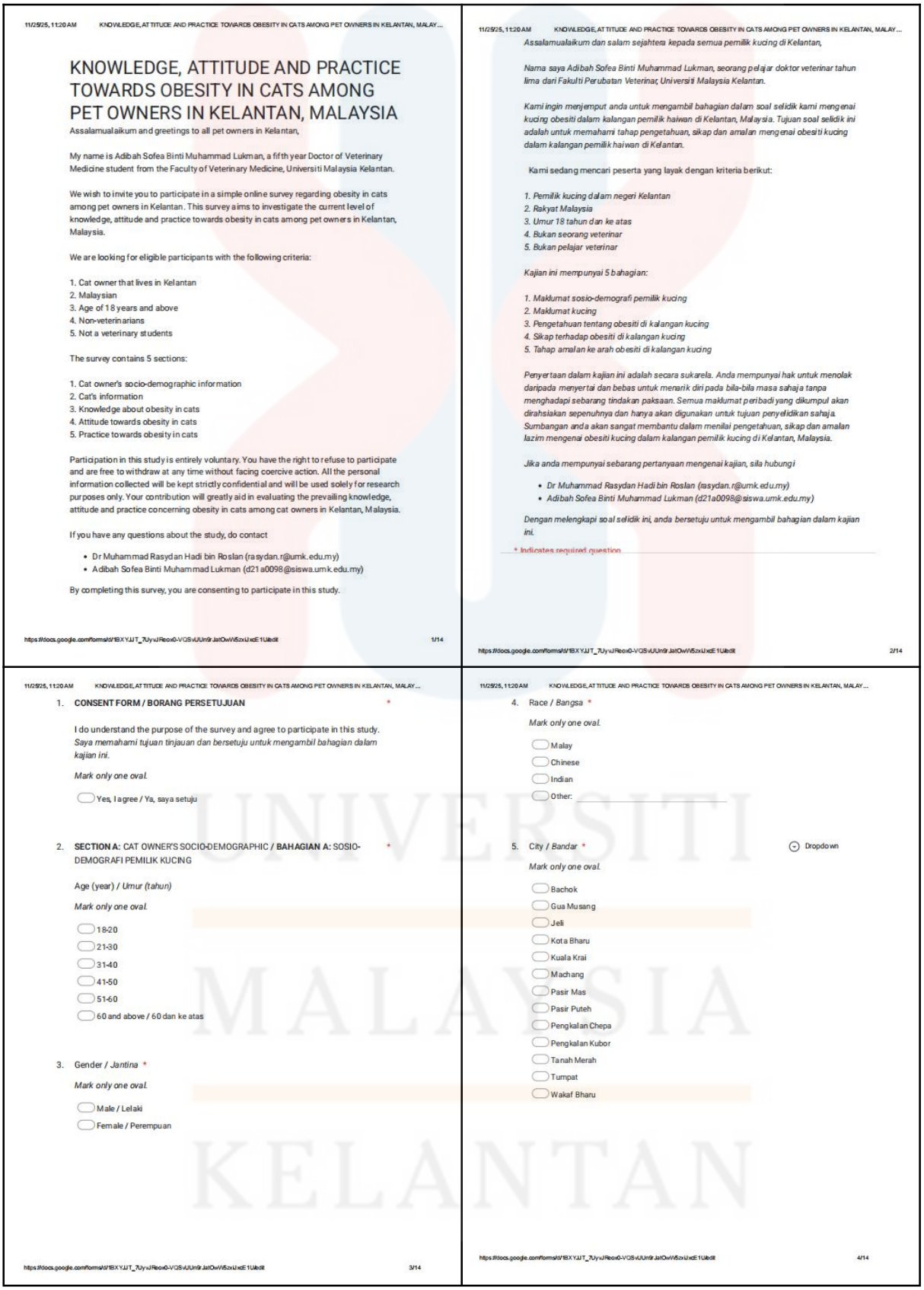
World Small Animal Veterinary Association (WSAVA). (2024, June). *Feeding treats to your cat* (v2). WSAVA. Retrieved from https://wsava.org/wp-content/uploads/2024/06/Feeding-treats-to-your-cat-v2.pdf

Zoran, D. L. (2010). Obesity in Dogs and Cats: A Metabolic and Endocrine Disorder. *Veterinary Clinics of North America: Small Animal Practice*, *40*(2), 221–239. https://doi.org/10.1016/j.cvsm.2009.10.009

FYP FPV

APPENDIX

8.1 Appendix 1: Google Survey Questionnaire



11/25/25, 11:20 AM KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS OBESITY IN CATS AMONG PET OWNERS IN KELANTAN, MALAY...

KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS OBESITY IN CATS AMONG PET OWNERS IN KELANTAN, MALAYSIA

Assalamualaikum and greetings to all pet owners in Kelantan,

My name is Adibah Sofea Binti Muhammad Lukman, a fifth year Doctor of Veterinary Medicine student from the Faculty of Veterinary Medicine, Universiti Malaysia Kelantan.

We wish to invite you to participate in a simple online survey regarding obesity in cats among pet owners in Kelantan. This survey aims to investigate the current level of knowledge, attitude and practice towards obesity in cats among pet owners in Kelantan, Malaysia.

We are looking for eligible participants with the following criteria:

1. Cat owner that lives in Kelantan
2. Malaysian
3. Age of 18 years and above
4. Non-veterinarians
5. Not a veterinary students

The survey contains 5 sections:

1. Cat owner's socio-demographic information
2. Cat's information
3. Knowledge about obesity in cats
4. Attitude towards obesity in cats
5. Practice towards obesity in cats

Participation in this study is entirely voluntary. You have the right to refuse to participate and are free to withdraw at any time without facing coercive action. All the personal information collected will be kept strictly confidential and will be used solely for research purposes only. Your contribution will greatly aid in evaluating the prevailing knowledge, attitude and practice concerning obesity in cats among cat owners in Kelantan, Malaysia.

If you have any questions about the study, do contact

- Dr Muhammad Rasydan Hadi bin Roslan (rasydan.r@umk.edu.my)
- Adibah Sofea Binti Muhammad Lukman (d21a0098@siswa.umk.edu.my)

By completing this survey, you are consenting to participate in this study.

https://docs.google.com/forms/d/1BXYJJT_7UyvJReox0-VQSvUUn9rJatOwW5zxUxcE1Uit/edit 1/14

11/25/25, 11:20 AM KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS OBESITY IN CATS AMONG PET OWNERS IN KELANTAN, MALAY...

Assalamualaikum dan salam sejahtera kepada semua pemilik kucing di Kelantan,

Nama saya Adibah Sofea Binti Muhammad Lukman, seorang pelajar doktor veterinar tahun lima dari Fakulti Perubatan Veterinar, Universiti Malaysia Kelantan.

Kami ingin menjemput anda untuk mengambil bahagian dalam soal selidik kami mengenai kucing obesiti dalam kalangan pemilik haiwan di Kelantan, Malaysia. Tujuan soal selidik ini adalah untuk memahami tahap pengetahuan, sikap dan amalan mengenai obesiti kucing dalam kalangan pemilik haiwan di Kelantan.

Kami sedang mencari peserta yang layak dengan kriteria berikut:

1. Pemilik kucing dalam negeri Kelantan
2. Rakyat Malaysia
3. Umur 18 tahun dan ke atas
4. Bukan seorang veterinar
5. Bukan pelajar veterinar

Kajian ini mempunyai 5 bahagian:

1. Maklumat sosio-demografi pemilik kucing
2. Maklumat kucing
3. Pengetahuan tentang obesiti di kalangan kucing
4. Sikap terhadap obesiti di kalangan kucing
5. Tahap amalan ke arah obesiti di kalangan kucing

Penyertaan dalam kajian ini adalah secara sukarela. Anda mempunyai hak untuk menolak daripada menyertai dan bebas untuk menarik diri pada bila-bila masa sahaja tanpa menghadapi sebarang tindakan paksaan. Semua maklumat peribadi yang dikumpul akan dirahsiakan sepenuhnya dan hanya akan digunakan untuk tujuan penyelidikan sahaja. Sumbangan anda akan sangat membantu dalam menilai pengetahuan, sikap dan amalan lazim mengenai obesiti kucing dalam kalangan pemilik kucing di Kelantan, Malaysia.

Jika anda mempunyai sebarang pertanyaan mengenai kajian, sila hubungi

- *Dr Muhammad Rasydan Hadi bin Roslan (rasydan.r@umk.edu.my)*
- *Adibah Sofea Binti Muhammad Lukman (d21a0098@siswa.umk.edu.my)*

Dengan melengkapi soal selidik ini, anda bersetuju untuk mengambil bahagian dalam kajian ini.

* Indicates required question

https://docs.google.com/forms/d/1BXYJJT_7UyvJReox0-VQSvUUn9rJatOwW5zxUxcE1Uit/edit 2/14

11/25/25, 11:20 AM KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS OBESITY IN CATS AMONG PET OWNERS IN KELANTAN, MALAY...

1. **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.

Mark only one oval.

- ◯ Yes, I agree / Ya, saya setuju

2. **SECTION A:** CAT OWNER'S SOCIO-DEMOGRAPHIC / **BAHAGIAN A:** SOSIO-DEMOGRAFI PEMILIK KUCING *

Age (year) / *Umur (tahun)*

Mark only one oval.

- ◯ 18-20
- ◯ 21-30
- ◯ 31-40
- ◯ 41-50
- ◯ 51-60
- ◯ 60 and above / 60 dan ke atas

3. Gender / *Jantina* *

Mark only one oval.

- ◯ Male / Lelaki
- ◯ Female / Perempuan

https://docs.google.com/forms/d/1BXYJJT_7UyvJReox0-VQSvUUn9rJatOwW5zxUxcE1Uit/edit 3/14

11/25/25, 11:20 AM KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS OBESITY IN CATS AMONG PET OWNERS IN KELANTAN, MALAY...

4. Race / *Bangsa* *

Mark only one oval.

- ◯ Malay
- ◯ Chinese
- ◯ Indian
- ◯ Other: _____

5. City / *Bandar* * ⊙ Dropdown

Mark only one oval.

- ◯ Bachok
- ◯ Gua Musang
- ◯ Jeli
- ◯ Kota Bharu
- ◯ Kuala Krai
- ◯ Machang
- ◯ Pasir Mas
- ◯ Pasir Puteh
- ◯ Pengkalan Chepa
- ◯ Pengkalan Kubor
- ◯ Tanah Merah
- ◯ Tumpat
- ◯ Wakaf Bharu

https://docs.google.com/forms/d/1BXYJJT_7UyvJReox0-VQSvUUn9rJatOwW5zxUxcE1Uit/edit 4/14

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

6. Employment status / *Status pekerjaan* *

Mark only one oval.

- Civil servant / Penjawat awam
- Self-employed / Bekerja sendiri
- Private sector / Sektor swasta
- Student / Pelajar
- Unemployed / Tidak bekerja
- Other: _____

Skip to question 7

SECTION B: OWNED CAT'S INFORMATION / ***BAHAGIAN B:*** *MAKLUMAT KUCING PELIHARAAN*

7. Cat breed / *Baka kucing* *

_____

8. Amount of pet cat / *Bilangan kucing yang dibela* *

Mark only one oval.

- 1
- 2
- 3
- 4
- 5
- More than 5 / Lebih daripada 5

9. Age of cat / *Umur kucing* *

Mark only one oval.

- 1-6 months / bulan
- 7-12 months / bulan
- 1-2 years / tahun
- 2-4 years / tahun
- More than 4 years / Lebih daripada 4 tahun

10. Cat diet / *Makanan diet kucing* *

Check all that apply.

- Kibbles / Makanan kering
- Soft food / Makanan lembut
- Homemade food / Makanan kucing yang dimasak sendiri
- Other: _____

11. Cat feed brand / *Jenama makanan kucing* *

_____

12. Cat weight / *Berat kucing* *

Mark only one oval.

- Less than 4 Kg / Kurang daripada 4 Kg
- More than 4 Kg / Lebih daripada 4 Kg

SECTION C: KNOWLEDGE ABOUT OBESITY IN CATS / ***BAHAGIAN C:*** *PENGETAHUAN MENGENAI OBESITI DALAM KALANGAN KUCING* **(7 Questions)**

13. Obesity in cats is defined as an excessive accumulation of fat that can impair health status. *

Obesiti dalam kalangan kucing bermaksud pengumpulan lemak berlebihan di dalam badan yang boleh menjejaskan status kesihatan.

Mark only one oval.

- True / Betul
- False/ Salah

14. Overweight and obesity in cats can lead to serious health problems such as diabetes mellitus, arthritis, and hepatic lipidosis. *

Kenaikan berat badan dan obesiti dalam kalangan kucing boleh menyebabkan pelbagai risiko kesihatan seperti diabetes mellitus, sakit lutut dan hati berlemak.

Mark only one oval.

- True / Betul
- False/ Salah

15. Feeding cats excessive amount of feed, treats or human food can lead to obesity. *

Memberi kucing peliharaan memakan makanan kering, basah dan makanan yang dimasak dalam kuantiti yang banyak boleh menyebabkan obesiti.

Mark only one oval.

- True / Betul
- False/ Salah

16. Obesity can affect all ages of cats. *

Obesiti boleh menjejaskan kucing pada semua peringkat umur.

Mark only one oval.

- True / Betul
- False/ Salah

17. Lack of physical activity is one of the risk factors that can lead to the development of obesity in cats. *

Kurang aktiviti fizikal merupakan salah satu faktor yang boleh menyumbang kepada obesiti dalam kalangan kucing.

Mark only one oval.

- True / Betul
- False/ Salah

18. Obesity in cats can be prevented and managed through appropriate diet control, regular exercise, and routine veterinary check-ups. *

Obesiti dalam kalangan kucing boleh dicegah dan dikawal melalui pengawalan diet yang sesuai, senaman secara berkala, serta pemeriksaan rutin oleh doktor haiwan.

Mark only one oval.

- True / Betul
- False/ Salah

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

19. Obesity in cats reduces life expectancy and overall quality of life. *

Obesiti dalam kalangan kucing boleh mengurangkan jangka hayat dan kualiti hidup keseluruhannya.

Mark only one oval.

- ◯ True / Betul
- ◯ False/ Salah

SECTION D: ATTITUDE TOWARDS OBESITY IN CATS / **BAHAGIAN D:** SIKAP TERHADAP OBESITI DALAM KALANGAN KUCING **(7 Questions)**

Choice / *Pilihan:*

1. Strongly disagree / *Sangat tidak bersetuju*
2. Disagree / *Tidak bersetuju*
3. Agree / *Setuju*
4. Strongly Agree / *Sangat bersetuju*

20. Do you believe that obesity in cats is a serious health issue that requires proper attention and management? *

Adakah anda percaya bahawa obesiti dalam kalangan kucing adalah isu kesihatan yang serius dan memerlukan perhatian serta pengurusan yang sewajarnya?

1 2 3 4

☆ ☆ ☆ ☆

21. Do you believe that regular veterinary check-ups are important to monitor your cat's weight and body condition? *

Adakah anda percaya pemeriksaan veterinar secara berkala adalah penting untuk memantau berat badan dan skor kondisi badan kucing?

1 2 3 4

☆ ☆ ☆ ☆

22. Do you believe that allowing your cat to eat freely (without portion control) may lead to obesity? *

Adakah anda percaya bahawa membiarkan kucing makan secara bebas (tanpa kawalan jumlah hidangan) boleh menyebabkan obesiti?

1 2 3 4

☆ ☆ ☆ ☆

23. Do you think controlling your cat's diet and encouraging physical activity are essential for maintaining a healthy weight? *

Adakah anda berpendapat bahawa pengawalan diet dan galakan aktiviti fizikal adalah penting untuk mengekalkan berat badan kucing yang sihat?

1 2 3 4

☆ ☆ ☆ ☆

24. Do you think that cat obesity is as important to address as other feline diseases **(e.g., diabetes, kidney disease)?** *

Adakah anda fikir bahawa isu obesiti dalam kalangan kucing adalah sama penting untuk ditangani seperti penyakit lain ***(contohnya diabetes, penyakit buah pinggang)?***

1 2 3 4

☆ ☆ ☆ ☆

25. Do you consider obesity in cats to be preventable with appropriate care and lifestyle management? *

Adakah anda menganggap bahawa obesiti dalam kalangan kucing boleh dicegah dengan penjagaan dan pengurusan gaya hidup yang sesuai?

1 2 3 4

☆ ☆ ☆ ☆

26. Do you believe that overweight cats are just as healthy as cats with an ideal body weight? *

Adakah anda percaya bahawa kucing yang berlebihan berat badan adalah sama sihat dengan kucing yang mempunyai berat badan ideal?

1 2 3 4

☆ ☆ ☆ ☆

SECTION E: PRACTICE TOWARDS OBESITY IN CATS / **BAHAGIAN E:** TAHAP AMALAN MENGENAI OBESITI DALAM KALANGAN KUCING **(7 Questions)**

Choice / Pilihan:

1. Never / *Tidak Pernah*
2. Rarely / *Jarang*
3. Often / *Selalu*
4. Always / *Sentiasa*

27. How often do you monitor your cat's body weight at home to detect signs of overweight or obesity? *

Berapa kerap anda memantau berat badan kucing anda di rumah untuk mengesan tanda-tanda berlebihan berat badan atau obesiti?

1 2 3 4

☆ ☆ ☆ ☆

28. How often do you bring your cat for veterinary check-ups to assess overall health and weight status? *

Berapa kerap anda membawa kucing anda untuk pemeriksaan veterinar bagi menilai tahap kesihatan keseluruhan dan status berat badan?

1 2 3 4

☆ ☆ ☆ ☆

FYP FPV
UNIVERSITI MALAYSIA KELANTAN

29. How often do you give snacks or treats to your cat? *

Berapa kerap anda memberi makan snek atau makanan ringan kepada kucing anda?

1 2 3 4

☆ ☆ ☆ ☆

30. How often do you provide opportunities for your cat to engage in physical activities such as playing or exercising? *

Berapa kerap anda menyediakan peluang untuk kucing anda melakukan aktiviti fizikal seperti bermain atau bersenam?

1 2 3 4

☆ ☆ ☆ ☆

31. How often do you adjust your cat's diet or feeding practices? *

Berapa kerap anda mengubah diet atau amalan pemakanan kucing anda?

1 2 3 4

☆ ☆ ☆ ☆

32. How often do you educate yourself (e.g., reading, online resources) about proper nutrition, complications and obesity prevention in cats? *

Berapa kerap anda menambah pengetahuan (contohnya melalui bacaan atau sumber dalam talian) tentang pemakanan yang betul, kesan dan pencegahan kegemukan pada kucing?

1 2 3 4

☆ ☆ ☆ ☆

33. How often do you monitor your cat's eating speed or eating behavior? * Berapa kerap anda memantau kelajuan makan atau tingkah laku pemakanan kucing anda?

1 2 3 4

☆ ☆ ☆ ☆

This content is neither created nor endorsed by Google.

Google Forms

FYP FPV

UNIVERSITI MALAYSIA KELANTAN