KNOWLEDGE, ATTITUDES, AND PRACTICES REGARDING CAT VACCINATION AMONG PET OWNERS IN SABAH

By

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ABSTRACT

Cat vaccination is an essential aspect of ensuring cats' health and disease prevention in order to prevent disease outbreaks and break the cycle of infection. This cross-sectional study aims to assess the levels of knowledge, attitude, and practices of pet owners in Sabah regarding cat vaccination while exploring associations with sociodemographic characteristics like age, division of residency, number of cats owned, and income, as well as analysing correlation among the knowledge, attitude, and practices levels. Data were collected through an online survey, with 72 participants. Descriptive analysis was performed to evaluate the overall levels, and associations were analyzed using statistical tests such as Chi-square and Spearman correlation test, with IBM® SPSS® Version 27. The study found high level of knowledge, with significant differences based on the demographic variables. While respondents demonstrated positive attitude towards cat vaccination, their practices often did not align with the results, indicating challenges such as limited access to information and time. The study highlights that a comprehensive approach combining education, awareness, and further research is vital to create a compliant-pet owners to cat vaccination.

Keywords: Cat vaccination; Knowledge; Attitude; Practices

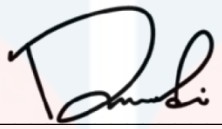
ABSTRAK

Vaksinasi kucing merupakan aspek penting dalam memastikan kesihatan kucing dan pencegahan penyakit bagi mengelakkan wabak penyakit serta memutuskan kitaran jangkitan. Kajian lintas-seksyen ini bertujuan untuk menilai tahap pengetahuan, sikap, dan amalan pemilik haiwan peliharaan di Sabah berkaitan vaksinasi kucing, sambil meneroka hubungan dengan ciri-ciri sosiodemografi seperti umur, kawasan kediaman, bilangan kucing yang dimiliki, dan pendapatan, serta menganalisis korelasi antara tahap pengetahuan, sikap, dan amalan. Data dikumpul melalui tinjauan dalam talian, dengan 72 peserta. Analisis deskriptif dijalankan untuk menilai tahap keseluruhan, dan hubungan dianalisis menggunakan ujian statistik seperti ujian Chi-kuasa dua dan ujian korelasi Spearman, menggunakan IBM® SPSS® Versi 27. Kajian mendapati tahap pengetahuan yang tinggi, dengan perbezaan yang signifikan berdasarkan pembolehubah demografi. Walaupun responden menunjukkan sikap positif terhadap vaksinasi kucing, amalan mereka sering kali tidak selaras dengan penemuan tersebut, menunjukkan cabaran seperti akses maklumat yang terhad dan kekangan masa. Kajian ini menekankan bahawa pendekatan menyeluruh yang menggabungkan pendidikan, kesedaran, dan penyelidikan lanjut adalah penting untuk mewujudkan pemilik haiwan peliharaan yang patuh terhadap vaksinasi kucing.

Kata kunci: Vaksinasi kucing; Pengetahuan; Sikap; Amalan

CERTIFICATION

This is to certify that we have read this research paper entitled 'Knowledge, Attitude and Practices Regarding Cat Vaccination among Pet Owners in Sabah by Amirah Nur Faizah binti Tamin, and in our opinion, it is satisfactory in terms of scope, quality, and presentation as partial fulfillment of the requirements for the course DVT 55204 – Research Project.



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DEDICATIONS

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CHAPTER 1

INTRODUCTION

1.1 Research background

Vaccination is a crucial component of preventive care for companion animals. At birth, the kitten's immune system is still developing and receives passive immunity from the maternal antibody from the mother through colostrum for up to 20 weeks of age (Brooks, 2022).

In Malaysia, the core vaccine for cats is the FVRCP vaccine, which gives protection against Feline Viral Rhinotracheitis, Feline Calicivirus, and Feline Panleukopenia; however, in Sarawak, the core vaccine will also include the Rabies vaccine (Animal Passport Official Portal, 2024). As for the non-core vaccines, there are several available in Malaysia including Feline Leukemia Virus, *Chlamydophilia felis*, and *Bordetella bronchiseptica* (oyen, 2021). This vaccine is crucial in developing an adaptive long-term immunity and memory. In the body, the memory cells are further broken down into memory B and T cells. These memory cells will capture the pathogen introduced into the body via vaccination, allowing the immune system to respond more quickly and effectively against the same pathogen (Jarnet, 2025).

1.2 Problem statement

Despite Sabah's availability of veterinary care and awareness initiatives, there are still uneven vaccination rates among household cats. The effectiveness of veterinary public health initiatives is limited by the lack of scientific data on pet owners' attitudes and understanding regarding cat vaccination. Designing successful educational interventions and boosting vaccine compliance require an understanding of these elements. In rural areas, the awareness towards

cat vaccination might be lower, with low access to veterinary clinics as one of the contributing factors.

1.3 Research questions

1) What is the current level of knowledge on cat vaccination among cat owners in Sabah?
2) What attitude do these owners have towards vaccination?
3) What vaccination practices are commonly followed by the owners?
4) Are there significant associations between owner demographics and their KAP scores?

1.4 Research hypothesis

1) There is a significant association between cat owner's knowledge, attitude, and practices of vaccination and their demographic characteristics.
2) There is a significant difference of knowledge, attitude, and practices between cat owners of the rural and urban areas.

1.5 Research objectives

1) To assess the level of knowledge about feline vaccination among cat owners.
2) To identify the attitudes of cat owners toward vaccinating their pets.
3) To examine the common practices regarding cat vaccination.
4) To analyze the association between demographic factors and KAP levels.

CHAPTER 2

LITERATURE REVIEW

2.1 Vaccination protocol

For felines, kittens can be vaccinated as early as 8 weeks of age with core vaccines. The second vaccination dose will be administered 3-4 weeks later, and a third dose of vaccination will be given at 16 weeks of age or older as a booster dose. Adult cats should receive a booster vaccination every three years, ideally, but this also depends on the cat's management (Day et al., 2016). For outdoor or semi-roaming cats, it is recommended to receive the booster vaccination annually, as they are more likely to be exposed to the disease and may come into contact with unvaccinated stray cats that could be infected with diseases (Sivagurunathan et al., 2018). As for indoor cats, they have a lower risk of disease exposure; therefore, they are advised to receive the triennial booster vaccination, as the duration of immunity of the vaccines can last up to 3 years (Day et al., 2016).

2.2 Factors affecting vaccination rate

The first factor that may contribute to the vaccination rate in Sabah is the cost of the vaccination itself. Vaccination costs and accessibility also present barriers to optimal vaccination coverage, as government clinics offer vaccines at around RM40 per shot, but private clinics charge higher fees, potentially limiting uptake among some pet owners in Malaysia (Grace Cat, 2023).

Moreover, the engagement of pet owners towards the awareness program provided by the Department of Veterinary Services (DVS) might be low despite the awareness program held by the DVS. In Sabah, particularly in Sipitang, DVS has provided the rabies vaccines free of charge to cat owners via its office in the district, to boost the pets' immunity (The Borneo Post, 2023) as the district is located at the border of Sabah-Sarawak, considering the rabies endemic status in Sarawak.

Although there are no specific studies focusing on the feline disease statistics in Sabah, a study proves that the prevalence of Feline Immunodeficiency Virus (FIV) and Feline Leukaemia Virus (FeLV) has increased compared to the previous studies done in Malaysia. In the study, male adult cats are more prone to be infected with the diseases, which is most likely due to the fighting behaviour (Sivagurunathan et al., 2018). In addition, most of the infected cats were outdoor cats, where there is a possibility that the cats were not vaccinated against the diseases, whereas indoor cats have lower prevalence as they has most probably been vaccinated and are kept indoor, reducing the risk of exposure to the virus (Sivagurunathan et al., 2018).

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Study area

The study area was in Sabah, comparing different districts. Informed consent was obtained from the respondents through the questionnaire, which ensured that their information was fully confidential and used solely for the purpose of the study. All participation is voluntary, and respondents have the right to withdraw from the study without penalty.

3.2 Study design

In this study, a cross-sectional descriptive design was employed, utilizing a structured questionnaire generated using Google Form. The questions were developed based on existing literature and thorough consultation with the supervisors. A pilot study was conducted using the questionnaire, involving 20 respondents, and the reliability was proven using Cronbach's Alpha.

3.3 Study population

Stratified sampling was used to recruit cat owners who were at least 18 years old from several districts in Sabah, with each district serving as a stratum. This strategy was used to guarantee that cat owners in Sabah's various regions were fairly represented.

3.4 Selection criteria

3.4.1 Inclusion criteria

The respondents were residents of Sabah who owned at least one cat, aged 18 years and above, and were willing to provide informed consent.

3.4.2 Exclusion criteria

To reduce information bias, individuals who were non-cat owners, veterinarians, and those who couldn't understand the questionnaire were excluded. However, because the study was conducted online, respondents with internet access (who are more likely to be younger, better educated, or live in cities) may be overrepresented in the study due to sampling bias. This could limit the applicability of the findings to Sabah's broader cat owner community, particularly those from rural or lower socioeconomic backgrounds.

3.5 Sampling method and procedure

Throughout the districts, stratified random sampling was used. To acquire adequate representation for evaluating knowledge, attitudes, and practices regarding feline vaccination and to investigate relationships between demographic characteristics and KAP levels, the sample size was determined based on the research objectives. In order to enable meaningful comparisons between strata and demographic groups, the final sample size was deemed sufficient. As the study was conducted online, the questionnaire was distributed via social

media, and among acquaintances until it reached the target respondents, using the snowball method.

3.6 Data collection tools

Data were collected via a structured questionnaire and interpretation was manually recorded in Microsoft Excel in tables.

3.7 Data analysis

The SPSS software was used for statistical analysis of the results. The socio-demographic characteristics of the respondents as well as their knowledge, attitudes, and practices regarding cat vaccination were examined using descriptive statistics. The correlation between the categorical variables was ascertained using Pearson Chi-square tests to determine the association between the socio-demographic characteristics and the knowledge, attitudes, and practices of cat owners towards cats' vaccination. A 95% confidence interval was used to assess for statistical significance. A significant p-value was set at <0.05. The correlations between the overall knowledge, attitude, and practice scores were measured using Spearman's rho correlations, since the data are ordinal variables. At a level of <0.01, the connection was significant.

CHAPTER 4

RESULT

4.1 Socio-demographic characteristics of respondents

The results of the demographic characteristics of respondents are displayed in Table 4.1. Based on the findings, most of the respondents were within the age group of 46-55 years old (29.2%), followed by the age group of 26-35 years old (23.6%), 18-25 years old (20.8%), 36-45 years old (13.9%), 56-60 years old (11.1%), and 60 years old and above (1.4%) respectively. Most of the respondents are residing in the West Coast divisions; Kota Kinabalu, Penampang, Putatan, Tuaran, Papar, Kota Belud, Ranau (58.3%), followed by the Tawau divisions; Tawau, Lahad Datu, Kunak, Semporna, Kalabakan (20.8%), Interior divisions; Beaufort, Kuala Penyu, Sipitang, Tenom, Keningau, Tambunan, Nabawan (11.1%) respectively. Sandakan divisions; Sandakan, Beluran, Kinabatangan, Telupid, Tongod, and Wilayah Persekutuan Labuan both shared the same result (4.2%) and finally Kudat divisions; Kudat, Kota Marudu, Pitas (1.4%). Majority of the respondents own 1-5 number of cats (77.8%), followed by more than 10 cats (12.5%), and 6-10 cats (9.7%) respectively in their households. Most of them have been a pet owner for more than 5 years (61.1%), followed by 1-5 years (29.2%), and less than 1 year (9.7%). Their employment status is most shown as a civil cervant (55.6%), followed by private sector (15.3%), students (13.9%), self-employed (6.9%), and lastly housewife and retiree (4.2%). Their monthly salary shown RM2000-RM5000 as the highest (43.1%), RM5000-RM10000 (30.6%), <RM2000 (13.9%), no income (9.7%), and finally >RM10000 (2.8%).

Table 4.1: Demographic information of the respondents (n = 72)

Demographic information	Responses	Number (n)	Percentage (%)
Age	18-25	15	20.8%
	26-35	17	23.6%
	36-45	10	13.9%
	46-55	21	29.2%
	56-60	8	11.1%
	60 and above	1	1.4%
Divisions of residency	West Coast	42	58.3%
	Interior	8	11.1%
	Sandakan	3	4.2%
	Tawau	15	20.8%
	Kudat	1	1.4%
	Wilayah Persekutuan Labuan	3	4.2%
Number of cats owned	1-5	56	77.8%
	6-10	7	9.7%
	>10	9	12.5%

How long have you been a pet owner?	Less than 1 year	7	9.7%
	1-5 years	21	29.2%
	More than 5 years	44	61.1%
Employment status	Civil cervant	40	55.6%
	Private sector	11	15.3%
	Self-employed	5	6.9%
	Housewife	3	4.2%
	Retiree	3	4.2%
	Student	10	13.9%
Monthly salary	<RM2000	10	13.9%
	RM2000-RM5000	31	43.1%
	RM5000-RM10000	22	30.6%
	>RM10000	2	2.8%
	None	7	9.7%

4.2 Knowledge

In this study, the knowledge of the respondents is displayed in Table 4.2. It revealed that their knowledge towards vaccination in cats were different. A total of 97.2% of the respondents were aware that cats require vaccination while the remaining 2.8% were not aware of it. The second question was a multiple-choice question, that revealed the knowledge of the

respondents on which diseases can be prevented via vaccination. A total of 22.2% chose Feline Rhinotracheitis Virus, 15.3% chose Feline Parvovirus, 13.9% chose Feline Calicivirus, 8.3% chose *Chlamydia felis*, 54.2% chose all the diseases listed, and 23.6% were not sure of any of the diseases. Furthermore, the respondents were asked on how often cats should be vaccinated. A total of 43.1% of them chose once every month for 3 months, then once a year, followed by annually and not sure; both 19.4%, and 18.1% chose once in a lifetime. The third question was also a multiple-choice question which requires them to choose their source of information on cat vaccination. A total of 54.2% of them chose friends as their source of information, followed by veterinary clinics (51.4%), reading resources (38.9%), family members (30.6%), Department of Veterinary services (DVS) (19.4%), and advertisement (13.9%). Most of the respondents aware of the recommended age for first vaccination in kittens, that accounted of 68.1%, and the other 31.9% were not aware of it.

Table 4.2: Responses of respondents towards knowledge questions (n = 72)

Questions	**Responses**	**Number (n)**	**Percentage (%)**
Are you aware that cats require vaccinations?	Yes	70	97.2%
	No	2	2.8%
Which diseases can be prevented via vaccination?	Feline Rhinotracheitis Virus	16	22.2%
	Feline Parvovirus	11	15.3%
	Feline Calicivirus	10	13.9%
	Chlamydia felis	6	8.3%
	All above	39	54.2%

	Not sure	17	23.6%
How often should cats be vaccinated?	Once in a lifetime	13	18.2%
	Annually	14	19.4%
	Once every 3 months, then once a year	31	43.1%
	Not sure	14	19.4%
Where do you get the information on cat vaccination?	Friends	39	54.2%
	Advertisement	10	13.9%
	Family members	22	30.6%
	Reading resources	28	38.9%
	DVS	14	19.4%
	Veterinary clinics	37	51.4%
Do you know the recommended age for first vaccination in kittens?	Yes	49	68.1%
	No	23	31.9%

4.3 Attitude

Table 4.3 displays the responses of their attitude towards cat vaccination. Majority of the respondents (98.6%) think that vaccination in cats is important, while the other 1.4% think

otherwise. The next question was a multiple-choice question regarding their concern regarding vaccination in cats. The first one is the vaccination cost (65.3%), followed by vaccination side effect (36.1%), the nearest clinic is located far (25%), vaccination hesitancy or mistrust (11.1%), not transportation (6.9%), no concern (1.4%), and one respondent added that the vaccine provided in the clinic they visited was out of stock (1.4%). A total of 97.2% of the respondents would vaccinate their cat if the vaccine was free, while the other 2.8% would not. 98.6% of the respondents believe that vaccination can protect cats from diseases, while the other 1.4% do not believe so. In the fifth question, the respondents were asked on their confidence level towards the safety of cat vaccine, they were given a range of 1-5 (not confident – very confident). Most of them (63.9%) were very confident (5) that vaccine is safe for cats, followed by confident (4) (23.6%), neutral (3) (9.7%), and not confident (1) (2.8%).

Table 4.3: Responses of respondents towards attitude questions (n = 72)

Questions	**Responses**	**Number (n)**	**Percentage (%)**
Do you think vaccination in cats is important?	Yes	71	98.6%
	No	1	1.4%
What do you concern regarding vaccination in cats?	Vaccination cost	47	65.3%
	The nearest clinic is located far	18	25%
	Vaccination side effect	26	36.1%
	No transportation	5	6.9%
	Vaccination hesitancy or mistrust	8	11.1%

	Vaccination hesitancy	8	1.4%
	Vaccine was out of stock	1	1.4%
	No concern	1	
Would you vaccinate you cat if vaccine was free?	Yes	70	97.2%
	No	2	2.8%
Do you believe vaccination can protect your cat from diseases?	Yes	71	98.6%
	No	1	1.4%
How confident are you about the safety of cat vaccine?	1	2	2.8%
	2	-	-
	3	7	9.7%
	4	17	23.6%
	5	46	63.6%

4.4 Practices

Table 4.4 displays the practices of the respondents towards cat vaccination. Most of them had their cat vaccinated (77.8%), while 22.2% of them had not. In the next two questions, they were required to write they answers on when the last vaccination was done if they chose yes in the first question, and if they chose no, they must state why. The answers for the second question were converted into points, based on the latest vaccination done. There was 0 point

for the answers that revealed the vaccination was not up to date, 1 point if the answers revealed overdue vaccination schedule, and 2 points if the answers revealed the vaccination is up to date. Based on the results, 9.6% of the responses were given 0 point, followed by 30.8% for 1 point, and 59.6% for 2 points. As for the third question, 0 point will be given if the answer revealed unacceptable reasons, and 1 point will be given for reasonable reasons. Based on the results, 59% of them were given 0 point, and the other 41% were given 1 point. Next, most of the respondents brought their cat for vaccination at private clinic (69.4%), 13.9% of them brought their cat to the government clinic, and 16.7% of them has never vaccinated their cat. Majority of the respondents always comply to their cat's vaccination appointment (43.1%), depend on the situation (19.4%), sometimes (13.9%), rarely (6.9%), and has never brought their cat for vaccination (16.7%). The last question of this section was a multiple-choice question, where they need to choose the factors that motivates them to vaccinate their cat. The most chosen factor was to protect their cats from diseases (93.1%), followed by encouraged by vets or acquaintances (20.8%), for travel purposes (5.6%), and two respondents added that cat is vaccinated also to protect the owner (1.4%), while the other one stated the factors was not in the list (NIL) (1.4%).

Table 4.4: Responses of respondents towards practice questions (n = 72)

Questions	**Responses**	**Number (n)**	**Percentage (%)**
Has your cat ever been vaccinated?	Yes	56	77.8%
	No	16	22.2%
If yes, when was the last vaccination?	0	5	9.6%

	1	16	30.8%
	2	31	59.6%
If no, state why.	0	13	59%
	1	9	41%
Where do you usually take your cats for vaccination?	Government clinic	10	13.9%
	Private clinic	50	69.4%
	Never	12	16.7%
Do you always comply with bringing your cats to their vaccination appointment?	Always	31	43.1%
	Sometimes	10	13.9%
	Rarely	5	6.9%
	Depends on situation	14	19.4%
	Never	12	16.7%
What motivates you to vaccinate your cat?	To protect them from diseases	67	93/1%
	For travel purposes	4	5.6%
	Encouraged by vets or acquaintances	15	20.8%
	To protect the owner	1	1.4%
	NIL	1	1.4%

4.5 Respondents' level of knowledge, attitude, and practices towards cat vaccination

Based on Table 4.5, out of 72 respondents, most of them showed good level of knowledge, attitude, and practices. For knowledge, 62.5% (n = 45) of the respondents showed good result, followed by 26.4% (n = 19) for moderate level, and 11.1% (n = 8) showed poor level of knowledge towards cat vaccination. As for attitude, 90.3% (n = 65) of the respondents revealed good attitude towards cat vaccination, followed by 8.3% (n = 6) for moderate, and 1.4% (n = 1) for poor level of attitude. Lastly, for practices, 72.7% (n = 52) of the respondents showed good practices towards cat vaccination, followed by 18.1% (n = 13) for poor, and 9.7% (n = 7) for moderate level of practices.

Table 4.5: Respondents' level of knowledge, attitude, and practices towards cat vaccination

Variable	Level	Frequency (n)	Percentage (%)
Knowledge	Poor	8	11.1
	Moderate	19	26.4
	Good	45	62.5
Attitude	Poor	1	1.4
	Moderate	6	8.3
	Good	65	90.3
Practices	Poor	13	18.1

Moderate	7	9.7
Good	52	72.2

4.6 Association between socio-demographic characteristics between knowledge, attitude, and practices towards cat vaccination

4.6.1 Knowledge

From table 4.6.1, the relationship between various sociodemographic characteristics and level of knowledge towards cat vaccination were summarizedfollowing analysis using Chi-square test. The p-value is set to $p < 0.05$. The results revealed all the sociodemographic characteristics are not significantly associated with the level of knowledge of the respondents towards cat vaccination.

Table 4.6.1: Association between level of knowledge and the sociodemographic characteristics of respondents

Sociodemographic characteristics	**Knowledge**	
	Chi-square value	**p-value**
Age	11.047	0.354
Divisions of residency	15.407	0.118
Number of cats owned	4.031	0.402
Duration of being a pet owner	4.436	0.350

Employment status	8.655	0.565
Income	7.990	0.434

4.6.2 Attitude

Table 4.6.2 shows the relationship between the sociodemographic characteristics of the respondents and the level of attitude towards cat vaccination. Based on the table, the result revealed only income has significant relationship to level of attitude shown by the respondents ($p = 0.024$) while other characteristics showed non-significant relationship ($p > 0.05$).

Table 4.6.2: Association between level of attitude and the sociodemographic characteristics of the respondents.

Sociodemographic characteristics	**Attitude**	
	Chi-square value	**p-value**
Age	5.489	0.856
Divisions of residency	7.504	0.677
Number of cats owned	2.215	0.696
Duration of being a pet owner	5.187	0.269
Employment status	10.582	0.391
Income	17.695	0.024

4.6.3 Practices

Table 4.6.3 revealed the association between the sociodemographic characteristics of the respondents and the level practices practiced by the respondents towards cat vaccination. Based on the table, the results revealed all the sociodemographic characteristics has no significant relationship with the level of practices shown by the respondents.

Table 4.6.3: Association between level of practices and sociodemographic characteristics of the respondents.

Sociodemographic characteristics	**Practices**	
	Chi-square value	**p-value**
Age	6.038	0.812
Divisions of residency	7.662	0.662
Number of cats owned	5.245	0.263
Duration of being a pet owner	0.991	0.911
Employment status	12.569	0.249
Income	13.398	0.099

4.7 Correlation between total score of knowledge, attitude, and practices of the respondents towards cat vaccination.

Table 4.7 summarizes the correlation coefficient and significance for the relationships between three variables. There is a significant correlation between knowledge and attitude

towards vaccination in cats among the respondents (p = 0.003). The observed correlation coefficient, spearman's rho is 0.346, which suggest positive relationship and fair correlation. There is a tendency for their attitude to increase with knowledge. For knowledge and practices, there is a significant correlation among the respondents (p < 0.001). The observed correlation coefficient is 0.454, that suggests positive relationship and fair correlation. There is tendency for practices to increase with knowledge. As for attitude and practices, there is no significant correlation between them among the respondents (p = 0.601). The observed correlation coefficient is 0.063, that suggests negative relationship and poor correlation. There is no tendency for their practices to increase with attitude.

Table 4.7: Spearman's rho correlation between knowledge, attitude, and practices

Spearman's rho	**Correlation (p-value)**		
	Knowledge	**Attitude**	**Practices**
Knowledge	1	0.346 (0.003)	0.454 (<0.001)
Attitude	0.346 (0.003)	1	0.063 (0.601)
Practices	0.454 (<0.001)	0.063 (0.601)	1

NOTE: Correlation is significant at the 0.01 level (2-tailed).

CHAPTER 5

DISCUSSION

The knowledge, attitudes, and practices of Sabah's cat owners on feline vaccination were examined in this study. Overall, the results show that although most respondents have a positive opinion of vaccination and a fair grasp of its significance, there are still gaps in their comprehensive comprehension and regular use of suggested immunization regimens. These findings are consistent with patterns documented in international literature, which show that pet owners' positive views may not necessarily convert into the best preventative healthcare practices (Belshaw et al., 2018; Gehrig et al., 2018).

Regarding the importance of vaccination in preventing infectious diseases, majority of respondents showed high general knowledge. This is consistent with other research demonstrating that the majority of cat owners acknowledge vaccination as a crucial part of managing feline health (Bergmann et al., 2017). Nonetheless, some responses showed ambiguity about the suggested booster intervals and the appropriate age for the first immunization. Similar gaps have been reported globally, where owners frequently recognize the value of vaccinations but are ignorant of vaccination procedures or the length of immunity (Day et al., 2016). The sources of vaccine information may be somewhat to blame for these shortcomings. The study's respondents heavily relied on unofficial sources like friends and acquaintances. Research indicates that owners who rely on unreliable sources are more likely to have false beliefs regarding illness risks, side effects, and vaccination schedules (Filipe et al., 2021). On the other hand, expert veterinarian advice has been acknowledged as a critical factor in increasing vaccination compliance and clearing up misconceptions (Bergmann et al.,

2017). Therefore, the results highlight the need for owner education that is more precise, consistent, and easily available.

Respondents' views toward cat vaccination were largely positive, indicating a high level of confidence in the safety of the vaccine and a belief in its preventative efficacy. There have also been reports of high levels of attitude positivity elsewhere. For instance, almost 90% of pet owners in Europe believed that vaccination was essential to preserving animal health (Day et al., 2016). Despite these favorable opinions, issues with perceived vaccine adverse effects, clinic accessibility, and cost were noted. One of the most important elements influencing owner decisions about veterinarian treatment has been repeatedly found to be cost (Belshaw et al., 2018). The study's substantial correlation between attitude and income provides more evidence that financial limitations have an impact on decisions about preventative treatment. Financial constraints are recognized by international recommendations like the WSAVA Vaccination recommendations as obstacles to the best possible vaccination coverage, especially in environments where private veterinary services are the main providers (Day et al., 2016). Interestingly, respondents said that if vaccines were offered at no cost, they would be more inclined to vaccinate their cats. This implies that government-assisted or subsidized programs could greatly increase compliance, particularly for those with lower incomes.

Although respondents' attitudes were favorable and their overall knowledge was sufficient, their vaccination habits were relatively poor. A significant percentage of cats had out-of-date or incomplete vaccination schedules, and over 25% of cats had never received a vaccination. Owners frequently support the idea of vaccination but fail to consistently follow through due to logistical, financial, or behavioral barriers, according to other KAP studies that highlight this gap between knowing, believing, and doing (Gehrig et al., 2018; Filipe et al., 2021). Additionally, the lack of substantial correlations between vaccination practices and the majority of demographic characteristics indicates that practice-related barriers are pervasive

throughout the community. This result is in line with the idea of planned behavior, which holds that regardless of attitudes or background, structural and situational barriers can prevent people from acting on their beliefs (Ajzen, 1991). Compliance may also be impacted by Sabah's reliance on private clinics for immunizations. Regular boosters may be deterred by the greater expenses of private care, particularly in rural and urban outskirts. Similar results have been reported in Southeast Asian contexts, where vaccination uptake was found to be significantly influenced by cost and the distance to veterinary facilities (Lem, 2019). This emphasizes even more the potential advantages of community-based veterinary outreach programs or mobile immunization units.

The study's positive associations between knowledge-practice and knowledge-attitude are in line with results from other areas. Increased knowledge has been demonstrated to enhance proactive behavior in pet health management and vaccine acceptance (Filipe et al., 2021). However, the lack of a substantial association between attitude and practice suggests that timely vaccination is not always motivated by favorable attitudes alone. This result highlights the significance of tackling practical obstacles in addition to educational initiatives, such as accessibility, price, and availability of veterinary services.

Preventing epidemics of highly contagious diseases including calicivirus infection, herpesvirus infection, and feline panleukopenia requires optimal immunization coverage. Widespread vaccination is crucial for both individual protection and population-level immunity, according to the ABCD and WSAVA guidelines (Truyen & Pennisi, 2022; Day et al., 2016). Therefore, vaccination gaps pose a concern for the persistence of disease, particularly in places where the number of stray cats is high. The results also support worries expressed in studies conducted in Malaysia that show rising FeLV and FIV prevalence among unvaccinated, free-roaming cats (Sivagurunathan et al., 2018). Improving owner adherence to vaccination regimens may help lower the burden of disease, enhance animal welfare, and bolster Sabah's

community veterinary health initiatives. All things considered, the findings highlight the need for comprehensive treatments that include owner education, enhanced accessibility, subsidized care, and consistent message from veterinary authorities. Such programs are probably going to improve feline health outcomes in the area and increase vaccine compliance.

CHAPTER 6

CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The knowledge, attitude, and practices (KAP) of cat vaccination among Sabah's pet owners were assessed in this study, and the results showed that most respondents had favorable attitudes and good awareness of vaccination. Majority of owners showed great support for preventive veterinary care by understanding the value of immunization and believing in its efficacy. Consistent vaccination uptake may be impacted by gaps in certain knowledge areas, such as immunization regimens and the recommended age for first vaccination.

Positive sentiments notwithstanding, vaccination practices were not entirely in line because a significant percentage of cat owners either neglected to vaccinate their animals or did not adhere to the recommended schedule. The lack of substantial correlations between the majority of demographic characteristics and KAP levels indicates that these disparities are common among many populations. The only element that was significantly correlated with attitude was income, indicating the impact of economic issues on vaccine acceptability. Improving owner education could further increase compliance, as seen by the beneficial connections between knowledge and both attitude and practices.

Overall, the results show that although Sabah's cat vaccination awareness is encouraging, specific interventions like easily available information, reasonably priced vaccination services, and more outreaches are required to improve actual vaccination behaviors. Improving these areas can help manage feline health more effectively, lower the risk of avoidable diseases, and improve the region's public veterinary health results.

6.2 Recommendations

Future studies on cat vaccination in Sabah should think about enlarging the study population to include a more varied and sizable sample from other districts, particularly rural and isolated areas where access to veterinary care may be restricted. Stronger comparisons between urban and rural contexts and a more representative understanding of vaccination trends would be possible with a larger sampling coverage. Furthermore, using qualitative methods like focus groups or interviews would provide deeper insights into owners' opinions, motives, and obstacles that are difficult to gather through structured surveys.

To find out how well targeted educational interventions, like social media campaigns or community-based awareness programs, improve understanding and vaccination compliance over time, more research might be conducted. Examining how communication tactics, clinic accessibility, and service quality affect vaccine uptake may be beneficial because veterinary clinics and professionals have a significant influence on owner decisions. Given that cost surfaced as a significant worry among respondents, economic factors also merit additional research, especially the relationship between household income, willingness to pay, and the affordability of vaccination.

Finally, in order to determine how vaccination practices affect the occurrence of infectious diseases among cats in Sabah, future study may benefit from connecting clinical data, such as veterinary records or test results, with vaccination histories. Research assessing community or mobile immunization programs may also reveal if these methods increase coverage in underprivileged communities. When taken as a whole, these approaches can boost public veterinarian health programs in Sabah and lead to more all-encompassing and successful measures to improve cat health.

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APPENDIX 1: Question set

Cat Vaccination Awareness. A call for all pet owners in Sabah!

Greetings to all pet owners!

My name is Amirah Nur Faizah binti Tamin, a final year veterinary student from Universiti Malaysia Kelantan.

You are invited to participate in an online survey focusing on cat vaccination as part of my final year project. This study is to assess the knowledge, attitude, and practices of vaccination in cats among pet owners in Sabah. The result of this online survey will help us understand and determine the curren status of pet owners' awareness regarding cat vaccination and their practices towards it, particularly to compare between different districts in Sabah.

The followings are the criteria making you eligible to participate in this study:

- A pet owner owning at least 1 cat
- Age 18 years old and above
- Sabahan residing in Sabah
- Willing to provide informed consent to participate in the study

Your participation are fully voluntary and there is no coercion intended, therefore you may refuse to participate if you do not wish to. All personal information will not be disclosed publicly and only confidential to be used entirely for study purposes. By completing this survey, you are consenting to participate in the study.

Thank you so much for your time and cooperation!

Salam sejahtera kepada semua pemilik haiwan peliharaan!

Saya Amirah Nur Faizah binti Tamin, pelajar veterinar tahun akhir dari Universiti Malaysia Kelantan.

Anda telah dijemput untuk menyertai kaji selidik atas talian memfokuskan kepada vaksinasi kucing sebagai bahagian daripada projek akhir tahun saya. Kajian ini bertujuan untuk menilai tahap pengetahuan, sikap, dan amalan terhadap vaksinasi kucing dalam kalangan pemilik haiwan peliharaar di Sabah. Hasil kajian ini akan membantu kami untuk memahami dan menentukan status semasa pemilik haiwan peliharaan di Sabah terhadap vaksinasi kucing dan amalan mereka, terutamanya untul membuat perbandingan antara daerah-daerah di Sabah.

Kriteria untuk menyertai kajian ini adalah seperti berikut

- Pemilik haiwan peliharaan yang memiliki sekurang-kurangnya seekor kucing
- Berumur 18 tahun dan ke atas
- Warga Sabah yang menetap di Sabah
- Sukarela memberi persetujuan untuk menyertai kajian ini

Penyertaan anda adalah sukarela sepenuhnya dan tiada sebarang paksaan, oleh itu anda boleh memilih untuk tidak mengambil tempat dalam kajian ini. Sebarang informasi peribadi akan dirahsiakan, sepenuhnya untuk kegunaan kajian ini sahaja dan tidak akan didedahkan kepada umum. Dengan melengkapkan dan menghantar kaji selidik ini, anda dianggap telah memberi persetujuan sepenuhnya untuk menyertai kajian ini.

Terima kasih banyak atas masa dan kerjasama anda!

* Indicates required question

1. **CONSENT FORM / BORANG PERSETUJUAN** *
   I do understand the purpose of this survey and agree to participate in this study.

   Saya memahami tujuan kajian ini dan bersetuju untuk mengambil bahagian.

   Mark only one oval.

   - ◯ Yes, I Agree / Ya, saya bersetuju
   - ◯ No, I disagree / Tidak, saya tidak bersetuju

PET OWNERS INFORMATION / MAKLUMAT PEMILIK HAIWAN PELIHARAAN

2. Age / Umur *

   Mark only one oval.

   - ◯ 18 - 25 years old / 18 - 25 tahun
   - ◯ 26 - 35 years old / 26 - 35 tahun
   - ◯ 36 - 45 years old / 35 - 45 tahun
   - ◯ 46 - 55 years old / 46 - 55 tahun
   - ◯ 56 - 60 years old / 56 - 60 tahun
   - ◯ 60 years old and above / 60 tahun dan ke atas

3. Divisions of residency / Bahagian tempat tinggal *

   Mark only one oval.

   - ◯ West Coast divisions / Bahagian Pantai Barat (Kota Kinabalu, Penampang, Putatan, Tuaran, Papar, Kota Belud, Ranau)
   - ◯ Interior divisions / Bahagian Pedalaman (Beaufort, Kuala Penyu, Sipitang, Tenom, Keningau, Tambunan, Nabawan)
   - ◯ Sandakan divisions / Bahagian Sandakan (Sandakan, Beluran, Kinabatangan, Telupid, Tongod
   - ◯ Tawau divisions / Bahagian Tawau (Tawau, Lahad Datu, Kunak, Semporna, Kalabakan)
   - ◯ Kudat divisions / Bahagian Kudat (Kudat, Kota Marudu, Pitas)
   - ◯ Wilayah Persekutuan Labuan

4. Please state your district of residency. / Sila nyatakan daerah tempat tinggal anda. *

5. Number of cats owned / Bilangan kucing yang dimiliki *

   Mark only one oval.

   - ◯ 1-5
   - ◯ 6-10
   - ◯ > 10

6. How long have you been a pet owner? / Sudah berapa lama anda menjadi pemilik haiwan peliharaan?

   Mark only one oval.

   - ◯ Less than 1 year / Kurang daripada 1 tahun
   - ◯ 1 - 5 years / 1 - 5 tahun
   - ◯ More than 5 years / Lebih daripada 5 tahun

7. Employment status / Status pekerjaan *

   Mark only one oval.

   - ◯ Civil cervant / Penjawat awam
   - ◯ Private sector / Sektor swasta
   - ◯ Self-employed / Bekerja sendiri
   - ◯ Housewife / Suri rumah
   - ◯ Retiree / Pesara
   - ◯ Student / Pelajar

8. Monthly salary / Pendapatan bulanan *

   Mark only one oval.

   - ◯ < RM 2000
   - ◯ RM 2000 - RM 5000
   - ◯ RM 5000 - RM 10 000
   - ◯ > RM 10 000
   - ◯ None / Tiada

KNOWLEDGE / PENGETAHUAN

9. Are you aware that cats require vaccinations? / Adakah anda tahu bahawa kucing memerlukan vaksinasi?

   Mark only one oval.

   - ◯ Yes / Ya
   - ◯ No / Tidak

10. Which diseases can be prevented via vaccination? / Penyakit apakah yang boleh dibendung melalui vaksinasi?

Check all that apply.

- [ ] Feline Rhinotracheitis Virus / Virus Kucing Rhinotrakeitis
- [ ] Feline Parvovirus / Penyakit Hawar Kucing
- [ ] Feline Calicivirus / Virus Calici Kucing
- [ ] Chlamydia felis / Klamidia
- [ ] All above / Semua diatas
- [ ] Not sure / Tidak tahu

11. How often should cats be vaccinated / Berapa kerapkah kucing perlu divaksinasi? *

Mark only one oval.

- ◯ Once in a lifetime / Sekali seumur hidup
- ◯ Annually / Setahun sekali
- ◯ Once every month for 3 months, then once a year / Sebulan sekali untuk 3 bulan, kemudian setahun sekali
- ◯ Not sure / Tidak tahu

12. Where do you get information on cat vaccination? / Dari manakah anda mendapat maklumat berkenaan vaksinasi kucing?

Check all that apply.

- [ ] Friends / Kawan-kawan
- [ ] Advertisment / Iklan
- [ ] Family members / Ahli keluarga
- [ ] Reading recources / Bahan bacaan
- [ ] Department of Veterinary Services (DVS) / Jabatan Perkhidmatan Veterinar (JPV)
- [ ] Veterinary clinics / Klinik veterinar

13. Do you know the recommended age for the first vaccination in kittens? / Adakah anda tahu umur anak kucing yang dicadangkan untuk diberi vaksinasi pertama?

Mark only one oval.

- ◯ Yes / Ya
- ◯ Tidak / No

ATTITUDE / SIKAP

14. Do you think vaccination in cat is important? / Pada pendapat anda, adakah vaksinasi penting untuk kucing?

Mark only one oval.

- ◯ Yes / Ya
- ◯ Tidak / No

15. What do you concern regarding vaccination in cat? / Apakah kebimbangan anda terhadap vaksinasi kucing?

Check all that apply.

- [ ] Vaccination cost / Kos vaksinasi
- [ ] The nearest clinic is located far from home / Klinik yang terdekat terletak jauh daripada rumah
- [ ] Vaccination side effect / Kesan sampingan vaksinasi
- [ ] No transportation to bring cat(s) to clinics / Tiada pengangkutan untuk membawa kucing ke klinik
- [ ] Vaccination hesitancy or mistrust / Keraguan atau ketidakpercayaan terhadap vaksinasi
- [ ] Other: _____

16. Would you vaccinate your cat(s) if vaccine was free? / Adakah anda akan memvaksinasi kucing anda jika vaksin adalah percuma?

Mark only one oval.

- ◯ Yes / Ya
- ◯ No / Tidak

17. Do you believe vaccination can protect your cat(s) from diseases? / Adakah anda percaya bahawa vaksinasi boleh melindungi kucing anda daripada beberapa penyakit?

Mark only one oval.

- ◯ Yes / Ya
- ◯ No / Tidak

18. How confident are you about the safety of cat vaccines? / Seberapa yakinkah anda terhadap vaksin kucing?

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Very confident / Sangat yakin

PRACTICES / AMALAN

19. Has your cat(s) ever been vaccinated? / Adakah kucing anda pernah divaksinasi? *

Mark only one oval.

- ◯ Yes / Ya
- ◯ No / Tidak

20. If yes, when was the last vaccination? / Jika ya, bilakah vaksinasi terakhir dilakukan?

_____

21. If no, state why. / Jika tidak, nyatakan kenapa.

_____

22. Where do you usually take your cat(s) for vaccination? / Di manakah biasanya anda membawa kucing anda untuk divaksinasi?

Mark only one oval.

- ◯ Government clinic (DVS) / Klinik kerajaan (JPV)
- ◯ Private clinic / Klinik swasta
- ◯ Never / Tidak pernah

23. Do you always comply with bringing your cat(s) to their vaccination appointment? / Adakah anda sentiasa patuh untuk memvaksinasi kucing anda mengikut temu janji yang ditetapkan?

Mark only one oval.

- ◯ Always / Sentiasa
- ◯ Sometimes / Kadang - kadang
- ◯ Rarely / Jarang
- ◯ Depends on situation / Bergantung kepada keadaan
- ◯ Never / Tidak pernah

24. What motivates you to vaccinate your cat(s)? / Apakah faktor yang mendorong anda untuk memvaksin kucing anda?

Check all that apply.

- [ ] To protect them from diseases / Untuk melindungi mereka daripada penyakit
- [ ] For travel purposes / Untuk tujuan melancong
- [ ] Encouraged by vets or acquintances / Digalakkan oleh veterinar atau kenalan
- [ ] Other: _____

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.865	.720	9

APPENDIX 2: Selected responses from respondents

Cat Vaccination Awareness. A call for all pet owners in Sabah!

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- Willing to provide informed consent to participate in the study

Your participation are fully voluntary and there is no coercion intended, therefore you may refuse to participate if you do not wish to. All personal information will not be disclosed publicly and only confidential to be used entirely for study purposes. By completing this survey, you are consenting to participate in the study.

Thank you so much for your time and cooperation!

Salam sejahtera kepada semua pemilik haiwan peliharaan!

Saya Amirah Nur Faizah binti Tamin, pelajar veterinar tahun akhir dari Universiti Malaysia Kelantan.

Anda telah dijemput untuk menyertai kaji selidik atas talian memfokuskan kepada vaksinasi kucing sebagai bahagian daripada projek akhir tahun saya. Kajian ini bertujuan untuk menilai tahap pengetahuan, sikap, dan amalan terhadap vaksinasi kucing dalam kalangan pemilik haiwan peliharaan di Sabah. Hasil kajian ini akan membantu kami untuk memahami dan menentukan status semasa pemilik haiwan peliharaan di Sabah terhadap vaksinasi kucing dan amalan mereka, terutamanya untuk membuat perbandingan antara daerah-daerah di Sabah.

Kriteria untuk menyertai kajian ini adalah seperti berikut

- Pemilik haiwan peliharaan yang memiliki sekurang-kurangnya seekor kucing
- Berumur 18 tahun dan ke atas
- Warga Sabah yang menetap di Sabah
- Sukarela memberi persetujuan untuk menyertai kajian ini

Penyertaan anda adalah sukarela sepenuhnya dan tiada sebarang paksaan, oleh itu anda boleh memilih untuk tidak mengambil tempat dalam kajian ini. Sebarang informasi peribadi akan dirahsiakan, sepenuhnya untuk kegunaan kajian ini sahaja dan tidak akan didedahkan kepada umum. Dengan melengkapkan dan menghantar kaji selidik ini, anda dianggap telah memberi persetujuan sepenuhnya untuk menyertai kajian ini.

Terima kasih banyak atas masa dan kerjasama anda!

CONSENT FORM / BORANG PERSETUJUAN *

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

Saya memahami tujuan kajian ini dan bersetuju untuk mengambil bahagian.

- (●) Yes, I Agree / Ya, saya bersetuju
- ( ) No, I disagree / Tidak, saya tidak bersetuju

PET OWNERS INFORMATION / MAKLUMAT PEMILIK HAIWAN PELIHARAAN

Age / Umur *

- ( ) 18 - 25 years old / 18 - 25 tahun
- ( ) 26 - 35 years old / 26 - 35 tahun
- (●) 36 - 45 years old / 35 - 45 tahun
- ( ) 46 - 55 years old / 46 - 55 tahun
- ( ) 56 - 60 years old / 56 - 60 tahun
- ( ) 60 years old and above / 60 tahun dan ke atas

Divisions of residency / Bahagian tempat tinggal *

- (●) West Coast divisions / Bahagian Pantai Barat (Kota Kinabalu, Penampang, Putatan, Tuaran, Papar, Kota Belud, Ranau)
- ( ) Interior divisions / Bahagian Pedalaman (Beaufort, Kuala Penyu, Sipitang, Tenom, Keningau, Tambunan, Nabawan)
- ( ) Sandakan divisions / Bahagian Sandakan (Sandakan, Beluran, Kinabatangan, Telupid, Tongod)
- ( ) Tawau divisions / Bahagian Tawau (Tawau, Lahad Datu, Kunak, Semporna, Kalabakan)
- ( ) Kudat divisions / Bahagian Kudat (Kudat, Kota Marudu, Pitas)
- ( ) Wilayah Persekutuan Labuan

Employment status / Status pekerjaan *

- ( ) Civil cervant / Penjawat awam
- (●) Private sector / Sektor swasta
- ( ) Self-employed / Bekerja sendiri
- ( ) Housewife / Suri rumah
- ( ) Retiree / Pesara
- ( ) Student / Pelajar

Please state your district of residency. / Sila nyatakan daerah tempat tinggal anda. *

Menggatal

Monthly salary / Pendapatan bulanan *

- ( ) < RM 2000
- (●) RM 2000 - RM 5000
- ( ) RM 5000 - RM 10 000
- ( ) > RM 10 000
- ( ) None / Tiada

Number of cats owned / Bilangan kucing yang dimiliki *

- (●) 1-5
- ( ) 6-10
- ( ) > 10

KNOWLEDGE / PENGETAHUAN

How long have you been a pet owner? / Sudah berapa lama anda menjadi pemilik haiwan peliharaan? *

- ( ) Less than 1 year / Kurang daripada 1 tahun
- (●) 1 - 5 years / 1 - 5 tahun
- ( ) More than 5 years / Lebih daripada 5 tahun

Are you aware that cats require vaccinations? / Adakah anda tahu bahawa kucing memerlukan vaksinasi? *

- (●) Yes / Ya
- ( ) No / Tidak

Which diseases can be prevented via vaccination? / Penyakit apakah yang boleh dibendung melalui vaksinasi? *

- [ ] Feline Rhinotracheitis Virus / Virus Kucing Rhinotrakeitis
- [ ] Feline Parvovirus / Penyakit Hawar Kucing
- [ ] Feline Calicivirus / Virus Calici Kucing
- [ ] Chlamydia felis / Klamidia
- [x] All above / Semua diatas
- [ ] Not sure / Tidak tahu

How often should cats be vaccinated / Berapa kerapkah kucing perlu divaksinasi? *

- (•) Once in a lifetime / Sekali seumur hidup
- ( ) Annually / Setahun sekali
- ( ) Once every month for 3 months, then once a year / Sebulan sekali untuk 3 bulan, kemudian setahun sekali
- ( ) Not sure / Tidak tahu

Where do you get information on cat vaccination? / Dari manakah anda mendapat maklumat berkenaan vaksinasi kucing? *

- [x] Friends / Kawan-kawan
- [ ] Advertisment / Iklan
- [ ] Family members / Ahli keluarga
- [ ] Reading recources / Bahan bacaan
- [ ] Department of Veterinary Services (DVS) / Jabatan Perkhidmatan Veterinar (JPV)
- [ ] Veterinary clinics / Klinik veterinar

Do you know the recommended age for the first vaccination in kittens? / Adakah anda tahu umur anak kucing yang dicadangkan untuk diberi vaksinasi pertama? *

- ( ) Yes / Ya
- (•) Tidak / No

ATTITUDE / SIKAP

Do you think vaccination in cat is important? / Pada pendapat anda, adakah vaksinasi penting untuk kucing? *

- (•) Yes / Ya
- ( ) Tidak / No

What do you concern regarding vaccination in cat? / Apakah kebimbangan anda terhadap vaksinasi kucing? *

- [x] Vaccination cost / Kos vaksinasi
- [ ] The nearest clinic is located far from home / Klinik yang terdekat terletak jauh daripada rumah
- [ ] Vaccination side effect / Kesan sampingan vaksinasi
- [ ] No transportation to bring cat(s) to clinics / Tiada pengangkutan untuk membawa kucing ke klinik
- [ ] Vaccination hesitancy or mistrust / Keraguan atau ketidakpercayaan terhadap vaksinasi
- [ ] Other: _____

Would you vaccinate your cat(s) if vaccine was free? / Adakah anda akan memvaksinasi kucing anda jika vaksin adalah percuma? *

- (•) Yes / Ya
- ( ) No / Tidak

Do you believe vaccination can protect your cat(s) from diseases? / Adakah anda percaya bahawa vaksinasi boleh melindungi kucing anda daripada beberapa penyakit? *

- (•) Yes / Ya
- ( ) No / Tidak

How confident are you about the safety of cat vaccines? / Seberapa yakinkah anda terhadap vaksin kucing? *

	1	2	3	4	5	
Not confident / Tidak yakin	○	○	○	○	◉	Very confident / Sangat yakin

PRACTICES / AMALAN

Has your cat(s) ever been vaccinated? / Adakah kucing anda pernah divaksinasi? *

- (•) Yes / Ya
- ( ) No / Tidak

If yes, when was the last vaccination? / Jika ya, bilakah vaksinasi terakhir dilakukan?

Belum divaksin

If no, state why. / Jika tidak, nyatakan kenapa.

Masih kecil

Where do you usually take your cat(s) for vaccination? / Di manakah biasanya anda membawa kucing anda untuk divaksinasi? *

- ( ) Government clinic (DVS) / Klinik kerajaan (JPV)
- (•) Private clinic / Klinik swasta
- ( ) Never / Tidak pernah

Do you always comply with bringing your cat(s) to their vaccination appointment? / Adakah anda sentiasa patuh untuk memvaksinasi kucing anda mengikut temu janji yang ditetapkan? *

- ( ) Always / Sentiasa
- (•) Sometimes / Kadang - kadang
- ( ) Rarely / Jarang
- ( ) Depends on situation / Bergantung kepada keadaan
- ( ) Never / Tidak pernah

What motivates you to vaccinate your cat(s)? / Apakah faktor yang mendorong anda untuk memvaksin kucing anda? *

- [x] To protect them from diseases / Untuk melindungi mereka daripada penyakit
- [ ] For travel purposes / Untuk tujuan melancong
- [ ] Encouraged by vets or acquintances / Digalakkan oleh veterinar atau kenalan
- [ ] Other: _____

Cat Vaccination Awareness. A call for all pet owners in Sabah!

Greetings to all pet owners!

My name is Amirah Nur Faizah binti Tamin, a final year veterinary student from Universiti Malaysia Kelantan.

You are invited to participate in an online survey focusing on cat vaccination as part of my final year project. This study is to assess the knowledge, attitude, and practices of vaccination in cats among pet owners in Sabah. The result of this online survey will help us understand and determine the current status of pet owners' awareness regarding cat vaccination and their practices towards it, particularly to compare between different districts in Sabah.

The followings are the criteria making you eligible to participate in this study:

- A pet owner owning at least 1 cat
- Age 18 years old and above
- Sabahan residing in Sabah
- Willing to provide informed consent to participate in the study

Your participation are fully voluntary and there is no coercion intended, therefore you may refuse to participate if you do not wish to. All personal information will not be disclosed publicly and only confidential to be used entirely for study purposes. By completing this survey, you are consenting to participate in the study.

Thank you so much for your time and cooperation!

Salam sejahtera kepada semua pemilik haiwan peliharaan!

Saya Amirah Nur Faizah binti Tamin, pelajar veterinar tahun akhir dari Universiti Malaysia Kelantan.

Anda telah dijemput untuk menyertai kaji selidik atas talian memfokuskan kepada vaksinasi kucing sebagai bahagian daripada projek akhir tahun saya. Kajian ini bertujuan untuk menilai tahap pengetahuan, sikap, dan amalan terhadap vaksinasi kucing dalam kalangan pemilik haiwan peliharaan di Sabah. Hasil kajian ini akan membantu kami untuk memahami dan menentukan status semasa pemilik haiwan peliharaan di Sabah terhadap vaksinasi kucing dan amalan mereka, terutamanya untuk membuat perbandingan antara daerah-daerah di Sabah.

Kriteria untuk menyertai kajian ini adalah seperti berikut

- Pemilik haiwan peliharaan yang memiliki sekurang-kurangnya seekor kucing
- Berumur 18 tahun dan ke atas
- Warga Sabah yang menetap di Sabah
- Sukarela memberi persetujuan untuk menyertai kajian ini

Penyertaan anda adalah sukarela sepenuhnya dan tiada sebarang paksaan, oleh itu anda boleh memilih untuk tidak mengambil tempat dalam kajian ini. Sebarang informasi peribadi akan dirahsiakan, sepenuhnya untuk kegunaan kajian ini sahaja dan tidak akan didedahkan kepada umum. Dengan melengkapkan dan menghantar kaji selidik ini, anda dianggap telah memberi persetujuan sepenuhnya untuk menyertai kajian ini.

Terima kasih banyak atas masa dan kerjasama anda!

CONSENT FORM / BORANG PERSETUJUAN *

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

Saya memahami tujuan kajian ini dan bersetuju untuk mengambil bahagian.

- (●) Yes, I Agree / Ya, saya bersetuju
- ( ) No, I disagree / Tidak, saya tidak bersetuju

PET OWNERS INFORMATION / MAKLUMAT PEMILIK HAIWAN PELIHARAAN

Age / Umur *

- ( ) 18 - 25 years old / 18 - 25 tahun
- ( ) 26 - 35 years old / 26 - 35 tahun
- (●) 36 - 45 years old / 35 - 45 tahun
- ( ) 46 - 55 years old / 46 - 55 tahun
- ( ) 56 - 60 years old / 56 - 60 tahun
- ( ) 60 years old and above / 60 tahun dan ke atas

Divisions of residency / Bahagian tempat tinggal *

- ( ) West Coast divisions / Bahagian Pantai Barat (Kota Kinabalu, Penampang, Putatan, Tuaran, Papar, Kota Belud, Ranau)
- ( ) Interior divisions / Bahagian Pedalaman (Beaufort, Kuala Penyu, Sipitang, Tenom, Keningau, Tambunan, Nabawan)
- ( ) Sandakan divisions / Bahagian Sandakan (Sandakan, Beluran, Kinabatangan, Telupid, Tongod)
- (●) Tawau divisions / Bahagian Tawau (Tawau, Lahad Datu, Kunak, Semporna, Kalabakan)
- ( ) Kudat divisions / Bahagian Kudat (Kudat, Kota Marudu, Pitas)
- ( ) Wilayah Persekutuan Labuan

Employment status / Status pekerjaan *

- ( ) Civil cervant / Penjawat awam
- ( ) Private sector / Sektor swasta
- ( ) Self-employed / Bekerja sendiri
- (●) Housewife / Suri rumah
- ( ) Retiree / Pesara
- ( ) Student / Pelajar

Please state your district of residency. / Sila nyatakan daerah tempat tinggal anda. *

Tawau

Monthly salary / Pendapatan bulanan *

- ( ) < RM 2000
- ( ) RM 2000 - RM 5000
- ( ) RM 5000 - RM 10 000
- ( ) > RM 10 000
- (●) None / Tiada

Number of cats owned / Bilangan kucing yang dimiliki *

- ( ) 1-5
- ( ) 6-10
- (●) > 10

KNOWLEDGE / PENGETAHUAN

How long have you been a pet owner? / Sudah berapa lama anda menjadi pemilik haiwan peliharaan? *

- ( ) Less than 1 year / Kurang daripada 1 tahun
- ( ) 1 - 5 years / 1 - 5 tahun
- (●) More than 5 years / Lebih daripada 5 tahun

Are you aware that cats require vaccinations? / Adakah anda tahu bahawa kucing memerlukan vaksinasi? *

- (●) Yes / Ya
- ( ) No / Tidak

Which diseases can be prevented via vaccination? / Penyakit apakah yang boleh dibendung melalui vaksinasi? *

- [ ] Feline Rhinotracheitis Virus / Virus Kucing Rhinotrakeitis
- [ ] Feline Parvovirus / Penyakit Hawar Kucing
- [ ] Feline Calicivirus / Virus Calici Kucing
- [ ] Chlamydia felis / Klamidia
- [x] All above / Semua diatas
- [ ] Not sure / Tidak tahu

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_____

If no, state why. / Jika tidak, nyatakan kenapa.

Tidak mampu _____

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