

Prevalence and prevention of parasite-borne disease in pet animals at Grace Veterinary Clinic, Pulau Penang, Malaysia on June-August 2021

Prevalensi dan Pencegahan Penyakit Parasit Hewan Kesayangan di Grace Veterinary Clinic, Pulau Penang, Malaysia pada Juni-Agustus 2021

Eng Chien Ling¹, Loh Hooi Meng², Sri Rahmatul Laila³

¹Student of Faculty of Veterinary Medicine, IPB University, Dramaga campus, Bogor, 16680, Indonesia

²Grace Veterinary Clinic, Pulau Penang, Malaysia

³Departement of Anatomy, Physiology and Pharmacology, Faculty of Veterinary Medicine, IPB University, Dramaga campus, Bogor, 16680, Indonesia, email:srirlaila@apps.ipb.ac.id

ABSTRAK

Penyakit parasitik selalu menjadi masalah di negara beriklim tropis termasuk di Pulau Pinang, Malaysia, karena kondisi lingkungan yang mendukung bagi berkembangnya agen parasit. Pengendalian agen parasit untuk hewan kesayangan harus dilaksanakan secara menyeluruh untuk mencegah maupun mengobati penyakit parasitik ini. Studi ini bertujuan untuk melihat prevalensi infeksi parasit pada hewan kesayangan di Grace Veterinary Clinic, Pulau Penang, Malaysia dan meningkatkan kesadaran pemilik hewan agar mempraktekkan pengendalian parasit untuk hewan kesayangan secara rutin. Metode yang digunakan adalah kuisisioner pendataan penyakit parasit dan pengetahuan pemilik hewan tentang penyakit parasitik pada hewan kesayangannya, data rekam medis, dan infografis edukasi tentang pemelihara hewan yang baik dan pencegahan infeksi parasit pada hewan kesayangan. Hasil studi menunjukkan bahwa penyakit parasit yang paling banyak terekam selama waktu studi adalah investasi ektoparasit diikuti anaplasmosis. Dari survei yang dilakukan melalui kuisisioner, pemilik hewan sebagian besar sudah mengetahui pencegahan penyakit parasit pada hewan kesayangannya, namun belum semua menerapkannya dengan baik karena kendala waktu dan biaya. Dengan pemberian edukasi kepada pemilik hewan, pengetahuan dan kepedulian pemilik terhadap pencegahan dan pengobatan parasite di hewan kesayangannya semakin meningkat. Melalui hal tersebut, diharapkan penyakit parasit pada hewan kesayangan dapat dicegahi dan dikurangi.

Kata kunci: edukasi, hewan kesayangan, parasit, pencegahan, prevalensi

INTRODUCTION

Ectoparasites are arthropods that spend most of their lives outside the host either by inhabiting the skin or outgrowth of skin for various periods to survive. (Kamaruddin *et al* 2020). Ectoparasites are a common and important cause of skin diseases in dogs and cats. They have a worldwide distribution and are capable of disease transmission. Ectoparasites can cause life-threatening anemia and occasionally hypersensitivity disorders in young and debilitated animals. In general, ectoparasites from companion pets can be classified into four main groups, namely, Mesostigmata (mites), Acarina (ticks), Phthiraptera (lice) and Siphonaptera (fleas). *Demodex sp*, *Sarcoptes scabiei*, *Rhipicephalus sanguineus*, *Otodectes cynotis* are typical endoparasites in dogs and cats. Endoparasites are parasites that live inside of their host and infect their internal organs. Depending on the parasite involved, the severity of the clinical conditions associated with infection may vary from slight gastrointestinal signs to life-threatening situations. (Roussel *et al* 2019). According to Erwanas *et al* 2014, canine and feline endoparasites consist of heartworms, tapeworms, hookworms, whipworms, roundworms, coccidia, giardia and flukes. Among the endoparasites above, *Toxocara sp.* and *Dirofilaria sp.* are commonly found in the companion pets in Malaysia. Parasite problem will not only affect animal's health but will also influence their life quality and welfare.

The parasitic-zoonotic disease could be high risk transmitted by companion dog and cat. In addition to the hazard parasites pose to the animal community, humans can be infected as well. Environmental factors and habits of human lifestyle become one of the factors that caused the existence and sustainability of ectoparasites and endoparasites lifecycle better. (Nasution *et al.* 2018). Attaining a better understanding of current deworming practices and potential risk factors for deviation from an appropriate protocol will enable targeted education of the veterinary community and aid in the identification of further areas of research. (Stull *et al* 2007).

The purposes of this study were to increase owner's awareness of parasite control in pet animals, to provide pet owners and community with the proper and accurate information about parasite control in pet animals, to reduce the cases of vector borne diseases in the community, and to record the number of cases of infected animal by ectoparasite in patients. The benefit of this program is to provide pet owners and community with accurate information about parasite control in their pets. This will help to reduce the occurrence of parasite-borne diseases in pet animals and indirectly reduce transmission to community. With a good health condition, the life quality of pet animals will be improved as well.

IMPLEMENTATION METHOD

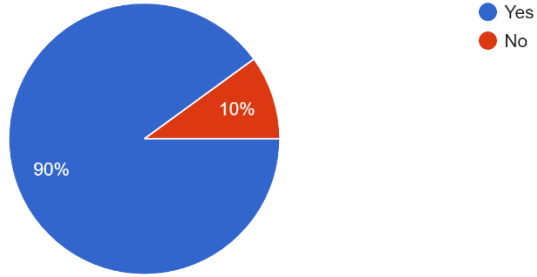
The program was conducted in Grace Veterinary Clinic, Pulau Pinang. In order to raise the awareness of public, poster designed in English. The poster is showed to the pet owner when they visit Grace Veterinary Clinic for their pets' regular checkup. The content of poster consist of importance of parasite control, how to practice parasite control in pet animals, and how parasite will affect the health condition and life quality in pet animals. Poster about parasite control also displayed in the waiting lobby of clinic. Explanation was given to the clients to provide proper knowledge of pets' parasite control to the public in order to raise awareness among the public. Client's education also aims to encourage pet owners to implement parasite control in their pets to reduce the occurrence of parasite-borne diseases.

Throughout the program, survey (Google form) was distributed to the clients that visited Grace Veterinary Centre, Penang. The goal of the survey is to analyze the understanding of pet owners of Grace Veterinary Centre regarding parasite control in their pets. We also record the parasite-borne disease of the Grace Veterinary Centre patients during the study.

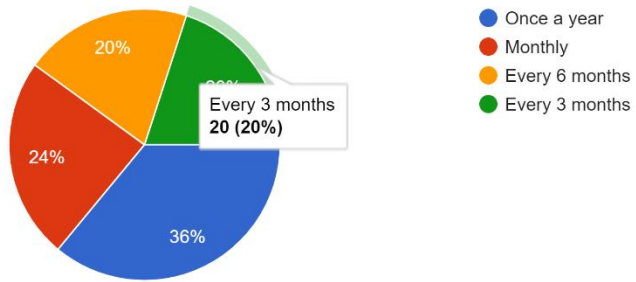
RESULT AND DISCUSSION

A total of 100 responses were received within the period of one month. 6 simple questions were designed in this survey, which is "Do you know what is deworming/ deflea/ detick?", "How often do you deworm/ deflea/ detick your pets?", "Have your pets been infected by any parasites before?", "Do you know why shall we implement parasite control in our pets?", "Which is your preferred method of parasite control for your pets?", "In your opinion, how significant is parasite control in your pets?". 90% of pet owners understand what is parasite control, while 10% of pet owners don't. As for the frequency of parasite control, 36% of pet owners practice parasite control once a year, 24% practice monthly, 20% every 6 months and every 3 months. 33% of the pets never been infected by parasites, 34% infected once, 25% infected 2-4 times, and only 8% infected 5 times and above. 81% of pet owners understand why shall we implement parasite control, 19 % don't. 36% of pet owners preferred oral parasite control products, 35% of them preferred spot-on products, 29% of them preferred spraying products. 53 % of pet owners think that parasite control is very important, 23% of them chose important, 19% of them think that is fairly important, while 5% of them think that is slight important to practice parasite control in their pets. The results are shown in Figure 1-6.

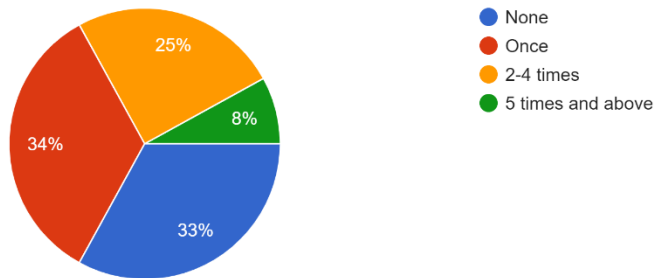
1) Do you know what is deworming/ deflea/ detick?
100 responses



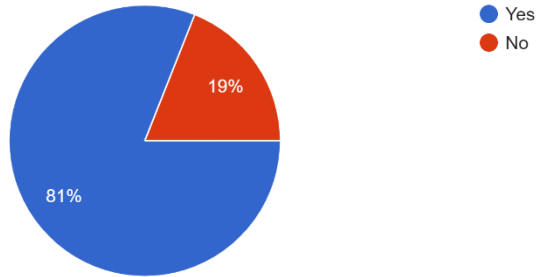
2) How often do you deworm/ deflea/ detick your pets?
100 responses



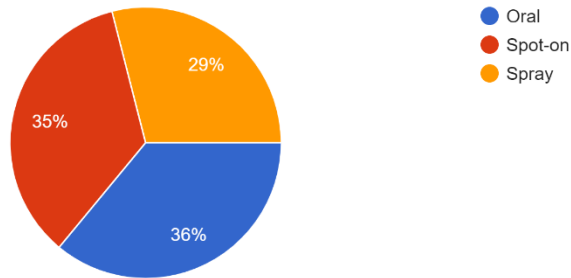
3) Have your pets been infected by any parasites before?
100 responses



4) Do you know why shall we implement parasite control in our pets?
100 responses



5) Which is your preferred method of parasite control for your pets?
100 responses



6) In your opinion, how significant is parasite control in your pets?
100 responses

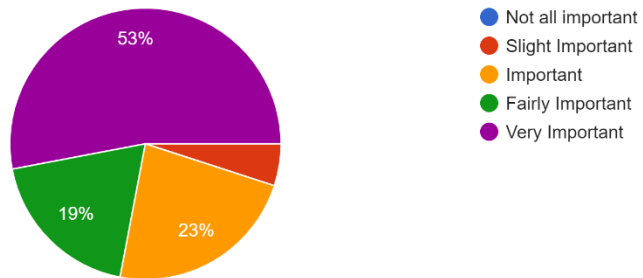


Figure 1-6: Results of Questionnaire

Throughout the program, the cases of parasitic diseases were recorded. Ectoparasite infection, Anaplasmosis in dogs, Mycoplasmosis in cats and Heartworm are parasitic diseases that commonly diagnosed in this clinic. Cases of parasitic infestation in Grace Veterinary Centre were recorded from 28 June 2021 till 8 August 2021. In this period of time, 124 cases of parasitic disease with an average of 3-4 cases per day were recorded: 55 cases (44.4%) of ectoparasites infestation (fleas, tick, mites, lice), 27 cases (21.8%) anaplasmosis in dogs, 22 cases (17.7%) mycoplasmosis in cats, and 20 cases (16.1%) of heartworm infection.

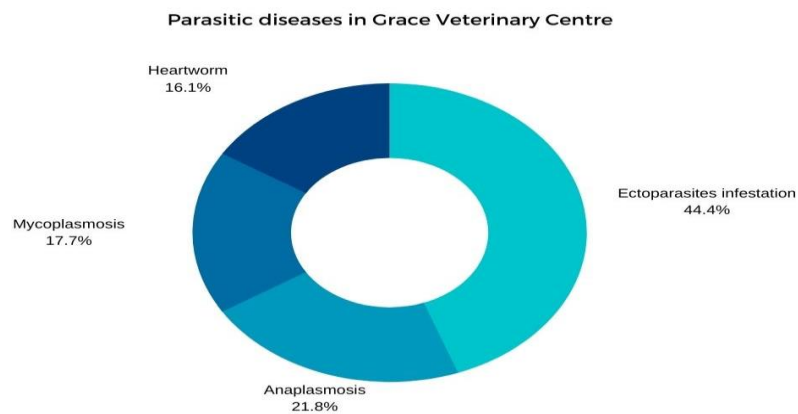


Figure 7: Parasitic diseases in Grace Veterinary Centre

Two posters were displayed in the waiting lobby (Lobby 2 and Lobby 3) in Grace Veterinary Clinic, which considered as a strategic location in the clinic as it can be discovered by those pet owners easily when they visited the clinic. The poster consists of why should pet owners implement parasite control in their pets and how to practice parasite control. With the explanation of poster, this will encourage pet owners to consider about parasite control in their pets. Feedbacks and enquiries were often received after the posters were displayed. Some pet owners will take initiative to apply parasite control products for their pets such as deworming tablet, flea and tick protection, heartworm prevention, or spot on products, Spray. Some of them will even discuss with their veterinarian for their pet's parasite control plan including animal hygiene to prevent the transmission of parasite to human. Approximately 500 animals were treated with parasite control products in Grace Veterinary Centre in one month time. Problems faced during this activity are pet owners often considered about the price of the products. As some of the product's price will be slightly higher and

products like Nexgard required monthly commitment, pet owners that are cost constraint will be reluctant to purchase parasite control products

CONCLUSION

Parasite control in pet animals is crucial in providing animals with a better welfare and good health condition, and also prevent the transmission of parasitic-borne diseases. However, during this study, the awareness of public and community still relatively low as they often neglect the importance of parasite control in their pets. Perhaps with the aid of infographic and client's education, the public will have better knowledge and awareness regarding parasite control and in the future will reduce the number of infection animals.

ACKNOWLEDGEMENT

I would also like to thank Veterinarians from Grace Veterinary Centre, Dr Amelia Choong Khai Lin, DVM, Dr Ooi Geok Heok, DVM, Dr Soong Yii Ern, DVM for their patience support and giving me the opportunities to complete my program 'Parasite Control for Your Pets'.

REFERENCE

- Daud ZM, Mohamed N, Abas N. 2015. Public knowledge of climate change: Malaysia's perspective. *In The 2nd International Conference on Human Capital and Knowledge Management*.
- Dennis J, Mark F, Lynda G, Carlos H. 2016. *Principles of Veterinary Parasitology*. United Kingdom (UK): Wiley Blackwell.
- Erwanas AI, Chandrawathani P, Premaalatha B, Zaini CM, Lily RM, Jamnah O, Kumutha M, Norashikin MS, Norazura AH, Niny FJ, Rajandran K. 2014. Parasitic infections found in pet and stray dogs in Ipoh, Malaysia. *Malaysian Journal of Veterinary Research*. 5(1):27-34.
- Kamaruddin NC, Adrus M, Ismail WN. 2020. Prevalence of ectoparasites on a stray cat population from "Town of Knowledge" Kota Samarahan, Sarawak, Malaysian Borneo. *Turkish Journal of Veterinary and Animal Sciences*. 44(6):1212-1221.
- Short EE, Caminade C, Thomas BN. 2017. Climate Change Contribution to the

Emergence or Re-Emergence of Parasitic Diseases. *Infect Dis (Auckl)*. 10(1): 124-130.

Roussel C, Drake J, Ariza JM. 2019. French national survey of dog and cat owners on the deworming behaviour and lifestyle of pets associated with the risk of endoparasites. *Parasites & vectors*. 12(1):1-3.

Stull JW, Carr AP, Chomel BB, Berghaus RD, Hird DW. 2007. Small animal deworming protocols, client education, and veterinarian perception of zoonotic parasites in western Canada. *Can Vet J*. 48(3):269-76.