

**Special Issue:**

Emerging and Re-emerging Animal Health Challenges in Low and Middle-Income Countries

# The Control and Preventative Measures for the Health Problems of Pets

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**Abstract** | Over time, the relationship between humans and domestic animals has changed from working animals (home protecting and mice catching) to animals with a social appearance and companionship. The aim of the study was to evaluate the health problems of pet animals and document the disease cases that were exposed during the study period at Baghdad city. The study conducted on 90 (60%) cats and 60 (40%) dogs from April to September 2024. Data were collected during the attendance to the veterinary clinics or hospitals in Baghdad city and its suburbs. The most common health problems of pets reported were parasitic infestation at 25%, tumors and cancerous lesions at 14%, diarrhea and vomiting symptoms at 10% each, the least were dental problems at 2%. Other problems such as obesity, arthritis, ear infections and skin issues were reported. The study recommends more explanation about companion animals including to encourage health practices, arrange breeding, appropriate nutrition and housing. Veterinarians can provide the best advice and awareness to animal owners.

**Keywords** | Pets, Health problems, Prevention**Received** | July 25, 2024; **Accepted** | September 29, 2024; **Published** | November 25, 2024**\*Correspondence** | Huda Hameed Kadhim Alabbody, Center for Market Research and Consumer Protection, University of Baghdad, Baghdad, Iraq; **Email:** [huda@bccru.uobaghdad.edu.iq](mailto:huda@bccru.uobaghdad.edu.iq)**Citation** | Alabbody HHK (2024). The control and preventative measures for the health problems of pets. *J. Anim. Health Prod.* 12(s1): 139-144.**DOI** | <http://dx.doi.org/10.17582/journal.jahp/2024/12.s1.139.144>**ISSN (Online)** | 2308-2801**Copyright:** 2024 by the authors. Licensee ResearchersLinks Ltd, England, UK.This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

## INTRODUCTION

Companion animals can provide vital roles such as guarding, helping in the early detection of food contamination, infectious diseases and biological or chemical terrorism. However, previously, until the 1960s, they were used as useful animals such as pulling, hunting, and surveillance dogs. But now, animals are kept as pets and their owners consider them as a member of the family (Abdalameer, 2016). In recent years, ecosystem change (climate, habitat, invasion, and pollution) and the abundance of food waste in the world have led to an increase in the number of dogs (*Canis familiaris*) and cats (*Felis catus*) in urban environments (Hasso, 2007). Keeping pets without regard to their social and legal responsibilities may increase

the risk of human infectious disease transmission<sup>1</sup>. Cats and dogs are reservoirs for many zoonotic diseases such as rabies, toxoplasmosis, giardiasis, cat scratch disease, Q fever, and ehrlichiosis. In addition, some zoonotic diseases such as plague and some rickettsiae are mechanically or biologically transmitted to humans by some arthropod species, especially blood-sucking lice, fleas and ticks (Awad et al., 2008). Ectoparasites are the most common in human and veterinary medicine. Raising cats and dogs at home requires attention to their hygiene, to prevent diseases that may be transmitted to humans. Therefore, the most important tips must be followed to maintain the health of pets at home and prevent the disease incidence in animals and humans (Abdulla and Al-Gburi, 2024).

The physical examination is an important practical skill for a clinician to develop. A good physical examination can detect minor abnormalities before they become serious problems as well as identify major organ dysfunction without extensive and expensive medical tests (Jekl et al., 2011). Due to the improvement of the economic situation in Iraq and the increase in per capita financial income, citizens tend to own a pet animal and consider it a family member. To evaluate the extent of the owner's care for his pet animal and his adherence to safety regulations, this study was conducted.

## MATERIALS AND METHODS

The study was conducted on a sample of 150 domestic animals' (60 dogs and 90 cats) aged (3-8) yrs. SD±2 arrived at the veterinary hospitals and some veterinary clinics of Baghdad city.

### SETTING OF THE STUDY

The questionnaire was designed and data were collected from 1<sup>st</sup> of April to 30<sup>th</sup> of September 2023. All participating owners no refused to respond. The owners answer the questionnaire often before the animal takes the treatment.

### PHYSICAL EXAMINATION

The process of evaluating objective anatomic findings through the use of:

- Observation
- Palpation
- Percussion
- Auscultation

The animal case history was confirmed, such as species, breed, gender, age and residence. Also were documented the vaccine program, sexual status, the main reason of vet clinic visiting and history of medicines were taken through the year.

An inspection of the behavior and general appearance of the animal like shape, size, movement, hydration status, eyelid mucous membrane and if ectoparasites were present. All the clinical and vital signs were performed like body weight by scale, body temperature by thermometer and pulse with respiratory rate by the stethoscope. The lymph nodes (submandibular, prescapular, inguinal, popliteal and axillary) were examined (Costa et al., 2022). The owner's phone number has been recorded in order to follow up the case. The cases were treated according to the main health problem they were exposed to, which was diagnosed macroscopically or microscopically under a classical light microscope. The cases were also followed up to evaluate the therapeutic efficacy of the preparations used (Tables 1 and 2).

## STATISTICS

Data had been collected, and analyzed in statistical program SPSS version 22 to compare variable's value, and estimate at a significance level of less than 0.05 in the 95% confidence intervals (CIs).

**Table 1:** The procedure of physical examination and description.

Physical examination	
Process	Description
History	Species, breed, age, sex, reproductive status, diet, medical history and immunization status. Description of main complaint.
General appearance	Observe animal from a distance and up close before any handling, symmetry, difference in size or shape, body condition, mentation, posture and gait,
Vital signs	Body weight, temperature, pulse rate, respiratory rate, mucous membrane (color yield), hydration status(skin tent test)
Physical exam (Head to Toe)	Face, head, lymph nodes, trunk and limbs, thorax, abdominal palpation, external Parasites or lesions.

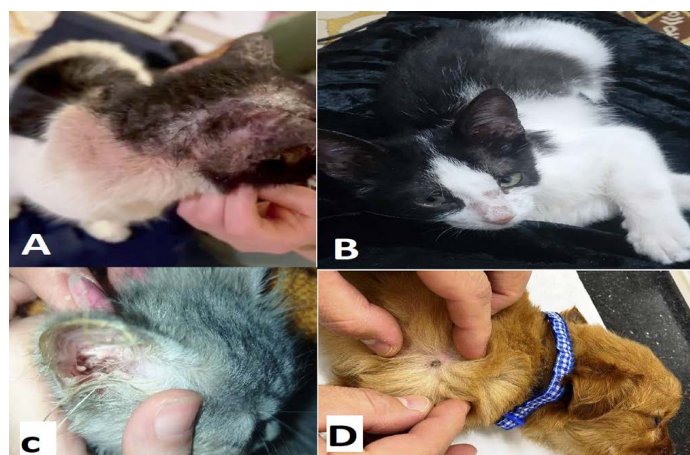
**Table 2:** The case history and clinical findings of pet animals.

Variables	No.	%	Variables	No.	%
<b>Species</b>					
Dogs	60	40	Cats	90	60
<b>Gender</b>			<b>Resident area</b>		
Male	90	60	Popular	48	32
Female	60	40	Upscale	76	52
Total	150	100	Countryside	27	16
Age	Mean 6, SD ±2, (3-8) yrs.		Total	150	100
<b>Breed</b>			<b>Health disorder</b>		
Dogs	Terrier	14 9	Parasites	37	25
	Belgian	12 8	Diarrhea	15	10
	German shepherd	10 7	Vomiting	15	10
	Pointer ( GSP)	8 5	Skin issues	35	23
	Labrador retriever	6 4	Ear infections	12	8
	Mix	10 7			
	Total of dogs	60 40	Arthritis	6	4
Cats	Persian	17 11			
	Himalayan	13 9	Obesity	5	3.5
	Scotch fold	12 8			
	Chinchilla	3 2	Dental disease	4	2.5
	Mix	45 30	Cancer and tumors	21	14
	Total of cats	90 60			
Total		150 100	Total	150	100

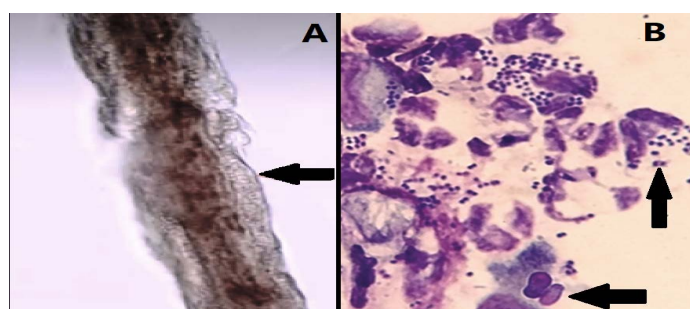
DIRECT MICROSCOPIC EXAMINATION

Samples were collected for laboratory examination and diagnosis through the use of an optical microscope, through hair picking, or skin scraping of suspicious sites. The hair was coated with mineral oil to obtain a hair follicle, and then the sample was cleaned of keratin by placing the sample with 10-20% KOH on the slide and then covering it with a cover so that it was ready for microscopy.

Use cotton swabs that are gently passed over the site of the injury. The swab is then distributed evenly on a slide then steps for cellular staining (Romanowsky stain) are followed (Zendehli et al., 2015).



**Figure 1:** A and B: Two cats with dermatophytosis in *Microsporium* and *Trichophyton* spp. Hair loss single and multiple lesions seen in the face, head and neck regions. D: dog with Tick's infestation *Rhipicephalus* spp., C: cat with bacterial infection *Streptococcus* spp. in the outer ear.



**Figure 2:** A: Infected hair with *Microsporium*. Note the swollen distorted appearance of the hair shaft with masses of ectothrix spores clustered around it, (X 40). Infected hair appear swollen, frayed, irregular and fuzzy in outline, and the normal structure of cuticle, cortex, and medulla is lost, beaded chains of small rounded cells (spores) and hyphae seen uniform in diameter (arrow), septate and variable in length and degree of branching. B: Ear cytology sample from a cat patient with Otitis externa. Numerous Streptococci are present in pairs (upper arrow), also pictured are numerous inflammatory cells exhibiting bacteriophagy (lower arrow) and an epithelial cell. (X100, Romanowsky-type stains).

RESULTS AND DISCUSSION

Table 1 showed that 60% of the treated pets were cats and 40% were dogs, males formed 60%, and 40% were females. The ages (3-8), Mean 6, SD±2 years. The Terrier, Belgian, and German shepherd dogs accounted for 10% each, cat breeds Persian, Himalayan, Scotch fold and Chinchilla constituted mix cats were 30% each. 52% of pets were from upscale 32% from the popular, and 16% from the rural. This shows the diversity in the acquisition of pets in Iraq and especially in Baghdad at this time, due to the improvement of income for the Iraqi citizen, and the acquisition of pets is considered a type of luxury for the individual (Aumran and Al-Thahab, 2020). The clinical cases were discussed with some details according to the incidence and the health importance.

PARASITIC INFESTATION

The parasitic infestation constituted the most elevated value at 25% of the entire number of cases. Ticks infestation was the first parasitic agent 12/35 (34%) of parasitic infestation cases. Ticks are blood-sucking parasites and carriers of many diseases (Fig 1D). Globally ticks are second only to mosquitoes as human vectors, ticks can transmit diseases such as relapsing fever, Lyme disease, Rocky Mountain spotted fever, tularemia, equine encephalitis, Colorado tick fever, and several forms of ehrlichiosis. Additionally, they are responsible for transmitting livestock and pet diseases, including babesiosis, anaplasmosis and cytauxzoonosis (Kalinin et al., 2024). The second important ectoparasites in this study were mites. A total of 10/35 (26%) many types of mites infest dogs, cats, and other animals. Mites are microscopic arthropods, infect the skin or mucous membranes. The most common mites that infect dogs and cats are ear mites, demodex, scabies and cheyletiella. Ear mites are very common on cats and are occasionally seen on dogs. They live primarily in the ear canals and can cause severe irritation. Mites easily transmitted between pets if found in one pet so, all pets in contact should be treated (Nelder and Reeves, 2005). Demodex is a mite that all dogs are exposed to, but only a small ratio of dogs develops skin problems. In young puppies, it usually causes small areas of hair loss especially on the head and front legs. Adult dogs tend to show more generalized symptoms, and usually have more red itchy skin lesions (Cordero et al., 2023).

Fleas are the third ectoparasite diagnosed in this study as 8/35 (23%) of parasitic infestation cases. Fleas has four stages of the life cycle (eggs larvae, adult female flea and pupae). Fleas are the number one allergen of dogs and cats and can cause severe skin disease and itching. Another reason fleas should be treated is due to the fact that they can carry and spread several serious diseases, such as tapeworms, cat scratch disease (Bartonella), murine

typhus, and the bubonic plague (Dobler and Pfeffer, 2011). Control must involve treating the environment as well as the pets (Wismer, 2018).

Helminthes also appeared in both dogs and cats, these groups include different types roundworms, tapeworms, hookworms and whipworms as 5/35 (7%). The pet might have been born with these worms (contracted from their mother), picked them up from the environment or ingested via fleas (which contain tapeworm eggs). Heartworms are also a risk and are spread by mosquitoes. The signs of these parasites can cause severe illness and in some cases are potentially fatal. *Dirofilaria immitis*, the cause of heartworm infestation (HWI) or dirofilariasis, affects members of the Canidae and remains a worldwide clinical problem. In Iraq, dirofilariasis was believed absent until 2009, when the Karbala Governorate was reported as an endemic area for canine dirofilariasis. Heartworms cause coughing due to lung disease, which can lead to sudden death. The symptoms of intestinal parasites which include vomiting, diarrhea, weight loss, anemia and a dry coat, in puppies and kittens can fail to grow, present with a 'pot belly' and the death may be from an intestinal blockage. Also, there was seriously anemic or have serious complications due to low proteins which are lost through the gut. The prevention for all dogs and cats should be regularly taken Antihelminthic medication appropriate to their age, weight and where they live (Ziam et al., 2022).

### DIARRHEA OR VOMITING

Diarrhea or vomiting constituted 10% each from the total number of cases in this study with different causes such as stress, parasites, food allergies, or infections like parvovirus. The signs involved abdominal contractions, retching and forceful expulsion of the stomach contents, which usually had a yellow appearance due to the presence of bile. This was distinct from regurgitation, a more passive expulsion of undigested material from the esophagus and which might be a frothy appearance due to the presence of water and saliva. Generally vomiting and diarrhea can be dangerous because pets can become dehydrated. Visit the vet very necessary if the pet has vomited three times within a 24-hour period or for longer than 24 hours or if other symptoms are present (such as lethargy, loss of appetite, diarrhea, blood in the vomit, weakness, weight loss, changes in urination or any other changes) (Candellone et al., 2020).

### CANCER OR TUMOR LESIONS

Cancer or tumor lesions, in this study were reported 14%, one of the most common health problems of pets, observed were skin tumors, then the mammary gland and gastrointestinal tumors visible in the mouth or rectum of the pet. Sometimes tumor cells diffuse, grow and spread in

same or another organ causing tumor *in-situ* or metastasis. It was more difficult to find at a later stage when it could be very difficult to treat successfully. The previous studies showed a number of factors that influence how fast a cancer may grow or spread such as type of cancer cell, location, genetics and exposure to harmful substances. Samples of any abnormal tissue evaluated by a pathologist (Alabbody and Lafta, 2018; Lafta and Alabbody, 2020).

### EAR INFECTIONS

Also, the other most common health problem of pets reported in this study was ear infections which constituted 8% of the total number of cases (Fig 1C, Fig 2B). Moisture and debris trapped in the ear canal. The infections in the outer ear, caused itchiness, inflammation and pain, sometimes appeared red or scaly skin in the ear canal, swelling, discharge or foul smell. The signs were frequent scratching of the ears or headshaking, which might be associated with whimpering or whining. The previous studies showed if these aren't treated, more serious infections in the middle and inner ear can develop, leading to balance problems, facial paralysis and deafness. Owners can help prevent ear infections by regularly checking their pet's ears, learning to clean them safely, thoroughly drying ears after swimming, treating any underlying allergies (Mohammed, 2013).

### SKIN ISSUES

In this study, the other most common health problem of pets reported was skin issues which constituted 23% of the total cases (Fig 1A, B, D and Fig 2A). In both dogs and cats caused pain, discomfort, and itchiness. The signs or lesion were frequent by biting, licking, or scratching, hair loss, bald patches, red and inflamed skin, thickened skin, unusual lesions of different size and coloring, lumps or swelling, sores, ulceration, flaky or crusty skin, unpleasant odor and abnormal behavior. (Amir et al., 2020) found the causes of skin lesions had parasite infestation, bacterial or fungus infection, seasonal allergies, or sensitivity to some foods or being exposed to an accidental injury that causes wounds or eruptions.

### ARTHRITIS

In this study, the other health problem of pets reported was arthritis which constituted 4% of all the cases with mainly causes such as osteoarthritis which due to wear and tear on joints from overuse, aging, injury, or from an unstable joint occurs with a ruptured as ACL (anterior cruciate ligament) in the knee. The chronic form of this disease is called degenerative joint disease (DJD). It is estimated that 20% of dogs older than one year of age have some form of DJD. One study (Rychel, 2020) showed that 90% of cats over 12 years of age had evidence of DJD on x-rays. Other causes of the inflammation can be infectious as septic arthritis

which caused by a bacterial or fungal infection.

### OBESITY

Obesity cases constituted 3.5%, all of them were cats. This excess weight was a serious health problem for cats. The causes of obesity might be taking a lot of food or doing a little exercise or both of them. The signs were observed as extra weight, lethargy and indolence. The previous studies showed that increasing the risk of heart disease by forcing the heart to work harder, increases the risk of arthritis as extra weight can stress the joints, cause joint pain, and make it harder for the pet to move around comfortably, frequently leads to diabetes, especially in cats (Hazorika et al., 2023).

### DENTAL DISEASE

In this study dental illnesses consisted of 2.5% of all cases. Dogs and cats damage their teeth were caused by chewing on hard objects or trauma. The symptoms included chewing more slowly than usual, dropping food from the mouth while chewing, excessive drooling, pawing at the mouth and resistance to having the face/mouth touched. The previous studies showed that dogs and cats accumulate bacteria, debris and plaque on the surface of their teeth, which over time forms tartar and eventually causes gingivitis and even tooth loss. Every pet must have regular dental checks with the veterinarian (Elseddawy et al., 2023).

## CONCLUSIONS AND RECOMMENDATIONS

The most health problems occurrence in a sample of adopted pet animals attenuated to clinics in the city of Baghdad during the study period were parasites infestation, diarrhea and vomiting, skin issues, ear infections, arthritis, obesity, dental disease and tumors. In Iraq, owning a pet became common after 2003, and the majority of society began to enjoy a degree of luxury. Preventive measures can be taken and management can be improved, thus early detection of diseases is facilitated. Dogs and cats are generally healthy just like humans, if they take healthy food, plenty of fresh air, exercise and clean disinfect rooms. Regular full body checkup and staying up to date on vaccinations and parasite control that ensure together human and animal live a long healthy life.

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## NOVELTY STATEMENT

This study was conducted to determine the incidence of main pathological cases that pets are exposed to in homes of Iraqi populations.

## AUTHOR'S CONTRIBUTION

The researcher put the plan of the study, collected data, diagnosed the cases clinically and in lab., treat and followed the prognosis.

## CONFLICT OF INTEREST

The author declares that she is not affiliated with or involved in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this manuscript.

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