

**PROFILE OF THE MAIN DISEASES IN WILD ANIMALS TREATED AT THE  
VETERINARY HOSPITAL OF CENTRO UNIVERSITÁRIO ANHANGUERA IN  
LEME, SÃO PAULO, BRAZIL**

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**ABSTRACT**

The retrospective study addressed the casuistry of wild animals treated at the Veterinary Hospital of Centro Universitário Anhanguera in Leme, São Paulo, Brazil. The research analyzed data from the medical history of all wild animals treated between 2009 and 2019, whether free-living or captive, belonging to Brazilian and exotic fauna species, with the aim of understanding the profile and main occurrences related to these animals. Medical records, medical reports, and information about the treated species were reviewed, including diagnoses, treatments, and clinical outcomes. The study revealed a wide variety of treated species, including 21 mammals (41.1%), 17 birds (33.4%), and 13 reptiles (25.5%), totaling 51 specimens. Dermatological diseases, musculoskeletal conditions, respiratory illnesses, gastrointestinal diseases, intoxications, poisoning, oncological disorders, and theriogenological conditions were observed in all species. Notably, avian species presented musculoskeletal diseases, respiratory illnesses, and other pathologies, while reptiles and mammals showed a higher incidence of dermatological issues. The institution's partnerships with other animal protection organizations facilitated the flow of care and specialized assistance. Additionally, some endangered species were identified, highlighting the veterinary hospital's role in local wildlife conservation, and the university's responsibility to raise awareness among the population to seek professionals who can handle and care for these animals.

**Key Words:** Animal health. Casuistry. Pathology. Wildlife.

**PERFIL DAS PRINCIPAIS ENFERMIDADES EM ANIMAIS SILVESTRES  
ATENDIDOS NO HOSPITAL VETERINÁRIO DO CENTRO UNIVERSITÁRIO  
ANHANGUERA DE LEME, SÃO PAULO, BRASIL**

**RESUMO**

O estudo retrospectivo abordou a casuística de animais silvestres atendidos no Hospital Veterinário do Centro Universitário Anhanguera da cidade de Leme, interior do estado de São Paulo, Brasil. A pesquisa analisou dados do histórico de todos os animais silvestres atendidos do ano de 2009 a 2019, de vida livre ou não, pertencentes às espécies da fauna brasileira e exótica com o objetivo de compreender o perfil e as principais ocorrências relacionadas a esses animais. Foram revisados prontuários, registros médicos e informações sobre as espécies atendidas, além de considerar diagnósticos, tratamentos e desfechos clínicos. O estudo revelou uma ampla variedade de espécies atendidas, incluindo 21 mamíferos (41,1%), 17 aves (33,4%) e 13 répteis (25,5%), totalizando 51 espécimes. Foram constatadas para todas as espécies

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doenças dermatológicas, musculoesqueléticas, enfermidades respiratórias, doenças gastrointestinais, intoxicações e envenenamentos, distúrbios oncológicos e enfermidades teriogenológicas. Para as aves foram marcantes as doenças musculoesqueléticas, as enfermidades respiratórias e outras patologias; enquanto que para répteis e mamíferos as enfermidades dermatológicas foram mais abundantes. Sobre a instituição comenta-se que as parcerias com outras instituições de proteção animal favoreceram o fluxo de atendimentos e busca por ajuda especializada. Além disso, foram identificadas algumas espécies ameaçadas de extinção, ressaltando a importância do papel do hospital veterinário na conservação da fauna local, como também a responsabilidade do centro universitário em conscientizar a população em buscar profissionais que saibam manejar e cuidar desses animais.

**Palavras-Chave:** Saúde animal. Casuística. Patologia. Fauna silvestre.

## **PERFIL DE LAS PRINCIPALES ENFERMEDADES EN ANIMALES SILVESTRES ATENDIDOS EN EL HOSPITAL VETERINARIO DEL CENTRO UNIVERSITARIO ANHANGUERA DE LEME, SÃO PAULO, BRASIL**

### **RESUMEN**

Este estudio retrospectivo abordó la casuística de animales silvestres atendidos en el Hospital Veterinario del Centro Universitario Anhanguera en la ciudad de Leme, en el interior del estado de São Paulo, Brasil. La investigación analizó datos del historial de todos los animales silvestres atendidos desde el año 2009 hasta 2019, ya sea en libertad o no, pertenecientes a especies de la fauna brasileña y exótica, con el objetivo de comprender el perfil y las principales ocurrencias relacionadas con estos animales. Se revisaron expedientes médicos, registros médicos e información sobre las especies atendidas, además de considerar diagnósticos, tratamientos y resultados clínicos. El estudio reveló una amplia variedad de especies atendidas, incluyendo 21 mamíferos (41,1%), 17 aves (33,4%) y 13 reptiles (25,5%), totalizando 51 especímenes. Se observaron enfermedades dermatológicas, musculoesqueléticas, respiratorias, gastrointestinales, intoxicaciones y envenenamientos, trastornos oncológicos y enfermedades teriogenológicas para todas las especies. Para las aves, fueron destacadas las enfermedades musculoesqueléticas, las respiratorias y otras patologías; mientras que, para reptiles y mamíferos, las enfermedades dermatológicas fueron más abundantes. En cuanto a la institución, se destaca que las colaboraciones con otras instituciones de protección animal favorecieron el flujo de atención y la búsqueda de ayuda especializada. Además, se identificaron algunas especies en peligro de extinción, resaltando la importancia del papel del hospital veterinario en la conservación de la fauna local, así como la responsabilidad de la universidad en concientizar a la población sobre la importancia de buscar profesionales capaces de manejar y cuidar de estos animales.

**Palabras Clave:** Salud animal. Casuística. Patología. Fauna silvestre.

### **INTRODUCTION**

Wild animals can be classified according to their geographical distribution, with endemic animals naturally belonging to a specific territory, either migratory or non-migratory, terrestrial or aquatic; and exotic animals that do not naturally occur in a particular region, biome or ecosystem (1, 2, 3). Current research indicates that wild animal populations are declining, mainly due to human interference and ecosystem destruction (4, 5, 6); and this intense pressure

of human activity on nature leads to a high incidence of injured, sick or captured wild animals outside their habitats (7, 8).

The importance of retrospective studies involving this group of animals is underscored by the need to understand the impact of these pressures on wildlife health and conservation, so these studies provide critical insights into the epidemiology of diseases affecting wild populations, helping to identify emerging health threats and informing conservation strategies. They also shed light on patterns of morbidity and mortality, guiding both clinical practices for veterinarians and broader wildlife management policies.

Another aspect to be pointed out is the increasing human desire for interaction and domestication of animals as companions, which stimulates the global growth of keeping wild animals as pets (9, 10). When not for commercial purposes, the breeding of some wild species aims to reproduce them in captivity and reintroduce them to their habitats, providing an alternative for wildlife conservation. However, this remains a delicate issue and should be addressed with severity, as it may stimulate illegal trafficking of these animals. In Brazil, birds are the most sought-after animals for the illegal pet trade, and the extent of illegally kept wild species as pets is still unknown (11, 12). Consequently, there is a growing need for specialized professionals in unconventional pet medicine to provide a better quality of life for these animals and convey essential information to owners, such as the natural behavior of the species, their habits, and diet.

This study aimed to conduct a retrospective analysis of wild animals treated at the Veterinary Hospital of Centro Universitario Anhanguera located in the countryside of São Paulo, Brazil, identifying major diseases, evaluating the distribution of affected species and examining the main therapeutic measures adopted.

## MATERIALS AND METHODS

The Veterinary Hospital of Centro Universitario Anhanguera - UNIFIAN has been providing services to the community in the region of Leme, São Paulo - Brazil, since August 2004, with the main objective of enhancing the theoretical and practical knowledge of Veterinary Medicine students. The institution offers clinical and surgical care primarily for small and large domestic animals and was a pioneer in the city in providing care for wild animals. Each animal treated is registered with an individual record number (R.G.), and all the appointments are documented in individual files and recorded in the hospital's reception minutes.

This research analyzed the history of all wild animals treated from January 2009 to December 2019, whether free-living or not, belonging to Brazilian and exotic wildlife species. A table was created to describe the individual care of the treated specimens, analyzing the following categories: 1 - generic name, instead of scientific name, as not all records contained the specific species name, only the common name, for example, "bird"; 2 - order to which the species belong; 3 - animal's registration number in the hospital's reception; 4 - origin, where the source of the specimens was recorded, whether they were referred by Brazilian environmental agencies, brought in by the community (injured and/or lost animals), or private owners; 5 - reason for the consultation, the reason for being referred for veterinary medical consultation, followed by the disease specialty diagnosed, including the animal's condition as noted in the record, the number of tests used for the diagnosis, therapeutic treatments, and procedures performed by third parties.

## RESULTS AND DISCUSSION

Fifty-one records were analyzed; in these, three classes of animals were treated, with 17 birds (33.4%), 13 reptiles (25.5%), and 21 mammals (41.1%), distributed across their respective orders (Figure 1).

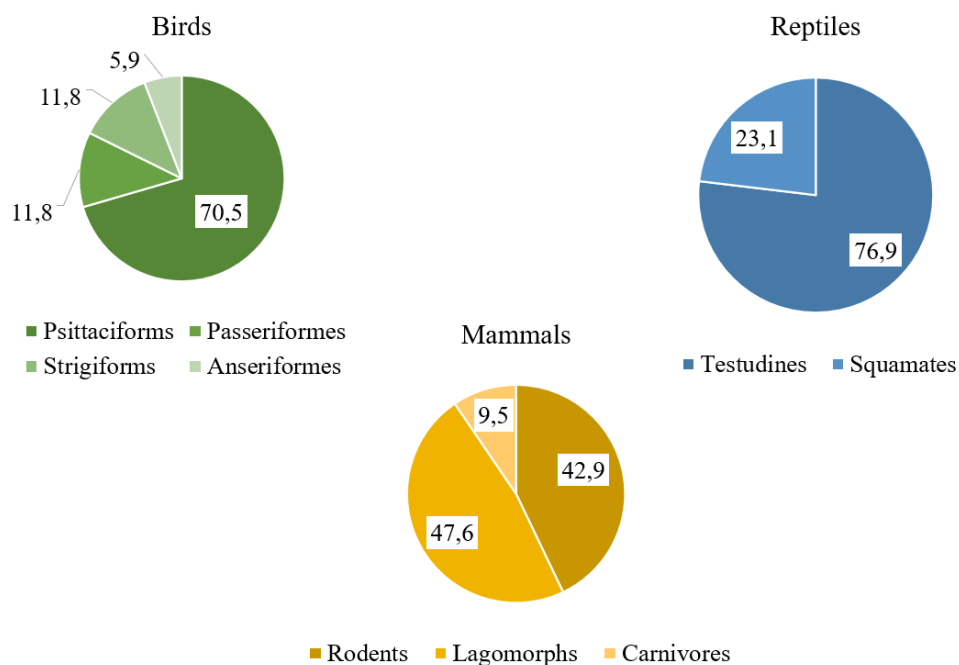


Figure 1. Percentage of orders of wild and exotic birds, reptiles, and mammals attended at the Veterinary Hospital of UNIFIAN, from January 2009 to December 2019.

Among the most attended bird species were, in descending order, 10 cockatiels (*Nymphicus hollandicus*), two blue-fronted parrots (*Amazona aestiva*), two tropical screech owls (*Megascops virgatus*), two canaries (*Serinus canaria*), and one swan (*Cygnus olor*). Among the reptiles with the highest attendance, following a descending order, were nine black-bellied slider (*Trachemys dorbignyi*), three rattlesnakes (*Crotalus durissus*), and one red-footed tortoise (*Chelonoidis carbonaria*). The largest group of attendances consisted of mammals, with nine rabbits (order Lagomorpha), seven guinea pigs (*Cavia porcellus*), two ferrets (*Mustela putorius furo*), two chinchillas (*Chinchilla lanigera*), and one hare (*Lepus europaeus*).

There were fluctuations in the attendance of wild and exotic animals at the Veterinary Hospital during the studied years (Figure 2), with a peak in attendance in the year 2012. This was due to changes in the institution's policies regarding the care of these animals, including the establishment of partnerships with rescue organizations and participation in rehabilitation efforts, which led to an increase in the number of cases attended. Another contributing factor to the demand was that the institution had professionals who worked at the city's zoo, called Parque Ecológico Mourão, which allowed for the exchange of knowledge and experiences between faculty and students. However, with the closure of the zoo in 2014, there was a reallocation of professors and these collaborations were lost. Additionally, the city established a public veterinary hospital in 2017 to primarily serve abandoned animals and pets of people in vulnerable social situations, providing more options for owners of non-conventional pets to seek medical attention.

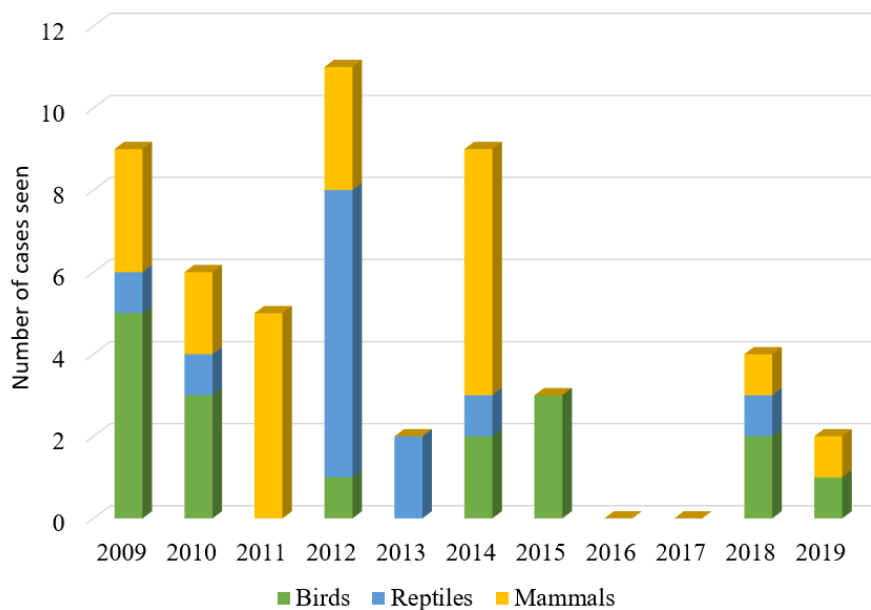


Figure 2. Number of wild and exotic animal classes attended annually from 2009 to 2019 by the Veterinary Hospital of UNIFIAN.

The majority of the attended specimens were from private owners (84.4%), i.e., pets; a small fraction was referred by environmental agencies, the fire department, and the Lemense community, concerned about the clinical condition of the found animals (together totaling 15.6%).

Regarding the identified diseases, the most prevalent issues were musculoskeletal diseases, respiratory diseases, and other disorders for birds; dermatological problems for reptiles and mammals (Figure 3).

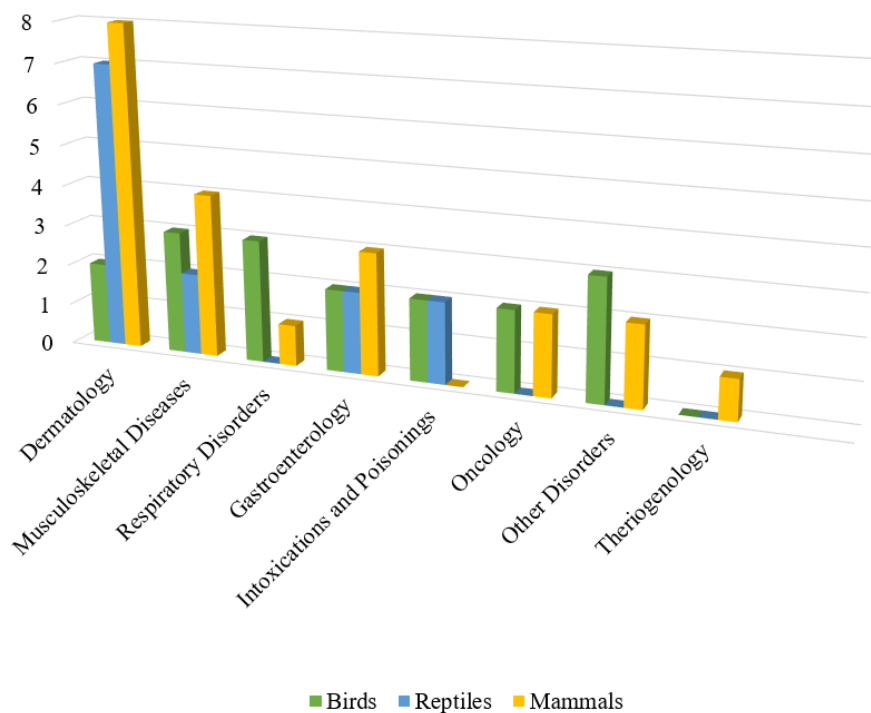


Figure 3. Frequency of disease groups in the records of wild birds, reptiles, and mammals analyzed at the UNIFIAN Veterinary Hospital from January 2009 to December 2019.

The cockatiel, the species with the highest number of patients in this study, is known as an exotic bird in Brazilian territory, originally from Australia, and was introduced in the 1970s. However, they have become common domestic pets due to their low acquisition and maintenance costs, as well as their docile nature (13, 14). The true parrot and canaries, which are endemic birds of Brazil, are kept as pets because the former has the ability to imitate human speech and is an intelligent and gentle species (15), while the latter is a small bird with easy handling and admired for its strong and melodic singing, making them frequently captured and kept in captivity (16). The diseases found in the records of these animals in this study included fractures in their legs due to fights or accidents at home, respiratory disorders, and stress caused by loneliness, as the owners reported spending a maximum of about three hours a day with the birds and confirmed not having toys or tools to enrich the animals' environment.

Fractures in birds are relatively common in certain contexts, including at home, for various reasons, such as: 1 - activities and behaviors: birds in cages often have limited space to exercise properly, thus the lack of adequate physical activity can weaken their bones and make them more prone to fractures, especially if they fall from a height or collide with objects (17, 18); 2 - domestic environment: the home may be filled with objects and hard surfaces that can pose risks to birds, especially if they fly freely indoors, collisions with windows, walls, furniture, or heavy objects are common occurrences (19, 18); 3 - inadequate nutrition: a diet low in calcium and other essential nutrients can weaken birds' bones and make them more susceptible to fractures (20); 4 - improper handling: holding birds incorrectly or with excessive force can result in injuries and fractures (18). Regarding respiratory diseases, one of the main reasons is the confined environment and lack of proper ventilation in spaces where birds are kept. Additionally, the concentration of dust, feces, and airborne particles can irritate the bird's respiratory tract, leading to the development of respiratory infections (21). It is also noted that the presence of other birds in the same space can increase the risk of transmitting respiratory diseases, especially if one bird is infected and the disease spreads to others. Furthermore, the quality of nutrition can also influence birds' respiratory health, as a diet lacking essential nutrients can weaken the immune system, making them more susceptible to respiratory infections (21, 20). Lastly, it is mentioned that another significant factor is stress. Birds kept in captivity can become stressed due to factors such as inadequate space, sudden changes in the environment, the presence of predators or other pets, among others. Chronic stress can compromise the immune system of birds, making them more vulnerable to respiratory diseases and even developing behavioral disorders like feather picking (22, 23).

As spotted owls and the swan were animals brought to the veterinary hospital by individuals concerned about the condition in which they found these animals. The spotted owls were victims of poisoning, possibly from ingesting prey contaminated with the substance commonly known as "chumbinho", a carbamate used in agriculture to combat insects and nematodes, considered one of the most toxic pesticides commercially available (24). The swan originated from a neighboring city and belonged to the municipal lake and it was brought in by the fire department due to a fracture caused by a dog attack. In these recent cases, the issue of public awareness towards animal welfare is highlighted through adoption campaigns, vaccination drives, social responsibility education in schools and colleges, and nature-focused television programs. These factors influence social behavior, leading to increased concern for animal well-being and their role in the environment. This awareness encourages prompt and urgent veterinary care for potential victims of poisoning, illegal capture, or attacks by domesticated animals such as dogs and cats (25, 26).

It is evident that, being the second most attended group of wild animals in this study, losing the first place to mammals, it is believed that this increase in the captive bird population is directly associated with urban expansion into natural habitats. This expansion stimulates the

desire for direct interaction between humans and free-roaming animals. Additionally, birds are frequent victims of the illegal wildlife trade, contributing to the reduction of national biodiversity and exposing the end consumers to a serious risk of contracting zoonotic diseases (27, 28). As a result, a growing demand for specialized medical procedures encourages veterinarians to seek expertise because these professionals need to recognize the anatomical and physiological characteristics of birds, which vary widely, in order to provide high-standard medical treatment (29).

As for reptiles, particular attention is drawn to the number of cases involving black-bellied slider. Distributed throughout South America, these turtles are characterized by their striking coloration, with yellow and orange stripes on a green background, earning them the common name “tartarugas-tigre-d’água” in Portuguese. They inhabit freshwater environments and can even be found for sale in pet shops and aquariums. Although they are not considered endangered, they are facing negative impacts due to human activity, particularly the collection of their hatchlings to supply the pet trade in the country (30, 31, 32). In this study, all of them originated from private owners, including the tortoise, and presented dermatological or gastroenteric problems. These issues arose due to lack of attention or negligence on the part of the owners. Neglect in maintaining the enclosure and providing proper nutrition led to an environment conducive to adversities for these animals, this includes steep declines leading to falls and wounds on the limbs, proliferation of infectious dermatological agents (fungi and opportunistic bacteria) and the consumption of foods that cause intestinal content compaction (excess bread, toast, cookies).

The three snakes encountered in the study were rescued by the Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis - IBAMA and the fire department. Two of them were victims of poisoning after consuming rats that had been killed with strychnine, an alkaloid used as a pesticide to control rodents (33). Another snake had gastrointestinal issues caused by parasitism. It's noteworthy that, as venomous animals, they should not be approached physically without experience, as the risk of being attacked is high (34, 35). However, qualified environmental and security professionals were involved in the capture and handling of these snakes during rescue operations. They showed concern for the well-being of the animals and took them for better treatment with the intention of releasing them back into their natural habitat. These professionals recognize the role of snakes in nature, as they contribute to the local ecosystem balance, particularly in disease control by consuming rodents that may carry zoonotic diseases (36, 37).

Regarding the treated mammals, there was a predominance of the orders Lagomorpha and Rodentia. The demand for rabbits as pets is growing annually, particularly among families living in apartments or those who lack the financial or structural means to keep a dog or cat. This is because maintaining a rabbit is theoretically cheaper and quieter (38, 39, 40). These animals exhibit high levels of charm and can be trained to respond affectionately to their owners. They can be found in pet shops, agricultural supply stores or local breeders who advertise their animals through various channels, primarily using internet platforms (41, 42).

Rabbits share another interest of the population, which is their meat consumption, and the highest rate of rabbit breeding for consumption is found in the southeastern region, precisely where the study location is situated (39). In this study, none of the rabbits were from breeding for meat purposes. Instead, they were privately owned and acquired by individuals who reported purchasing them from pet shops and fairs without being aware of the possibility of inbreeding among the animals or even their genders. Concerns about inbreeding are linked to organ malformation (which might explain cases of musculoskeletal malformation in two rabbits from the same owner), especially in the auricular pavilion or even the eyes, where cases of buphthalmia can be observed, along with excessive hair growth (43, 44).

There were errors in identifying the sex of the animals by the owners, as evident from the records. Owners declared names that seemed male (e.g., Floquinho, Bob), while in the medical history, the veterinarian marked them as female. This is common because some animal vendors cannot accurately determine the sex of the offspring, resulting in the wrong sex being assigned. However, this situation can lead to fights, mutilations (as observed in two cases in the study due to trichophagia caused by stress and dominance), unwanted pregnancies, and, in the worst cases, abandonment of the animals due to not meeting the desired sex criteria of the interested families (45, 46, 47). This occurred in a case where the owner questioned the behavior of the supposed female rabbit with the other rabbits. The study also highlighted the only case of theriogenology involving a hare, where an orchiectomy was required because the animal was male.

Four rabbits, three guinea pigs, and one chinchilla presented dermatological issues, being the most notable condition among the mammals in this study. This can be explained by the fact that these animals have sensitive skin, making them prone to irritations and allergies caused by chemicals, rough materials, or inadequate environments. Additionally, unsanitary conditions and lack of proper hygiene in cages, such as urine and feces buildup, can lead to skin infections (48, 49), making guidance from a veterinary professional essential. It's worth noting that both guinea pigs and chinchillas are social animals and can engage in fights or accidents with other animals, resulting in skin injuries. Furthermore, both species are vulnerable to fluctuations in temperature and humidity. Environments that are overly humid or dry can lead to skin problems (49, 50).

## CONCLUSION

The role of the Veterinarian holds significant importance in the realm of information dissemination and providing optimal animal healthcare. Consequently, the data from this research becomes relevant not only to the general population but also serves as valuable knowledge for future professionals in the field. The findings illustrate that over a ten-year period, the numbers of mammals, birds and reptiles, in that order, were noteworthy in the case load of UNIFIAN's Veterinary Hospital in Leme. Dermatological, musculoskeletal, respiratory diseases, behavioral disorders, intoxications and poisonings remain prominent among these animals, emphasizing the need for specialized attention and care.

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