

DEMOGRAPHY OF SMALL ANIMAL CASES IN ASSIUT BETWEEN YEARS 2007-2010: A RETROSPECTIVE STUDY OF 312 CASES

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ABSTRACT

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The aim of this study was to analyze the demography of presented cases and owner's attitudes towards veterinary care in the area. Records of cases admitted to the Small Animal Clinic (SAC), Veterinary Teaching Hospital (VTH) at Assiut University, between 2007 and 2009 were analyzed for the following: total number of feline and canine cases in each year, sex, age and breed. Case fatalities / year and most common presenting causes were also analyzed. Compared to the very limited number of cases presented in 2007 (n=14), there was a triple and double increase in the number of both feline and canine cases in the following two years (n=48 & 138, n=40 & 72) respectively. Case fatalities were higher in the first year compared to the following two years (7.14%, 5.68 % and 2.02% respectively). The most popular cat breed was the Persian and the Angora (80%, 63% and 62%) and that for canines was the Griffon (75%, 28% and 24%) over the study period. The most common cause for presentation was general health check (GHC) for cats (21.43% - 29.55%) followed by gastrointestinal problems (19%-21%) and dermatological problems (7%-32%). The most common cause for presenting dogs at the clinic was similar, however in the first year, 67% of cases were presented with dermatological problems and 33% for reproductive problems and in the following two years, the third most common cause for presentation was trauma (9%-13%). The age range over the three years for cats was 1-132 months (average= 16, median = 10), that for dogs was 0.5-132 months (average = 41, median = 8). The increase in number of cats and dogs presented for GHC indicates an increase of owner-awareness of the importance of GHC and routine vaccinations to the health of their pets. The frequency of cases presented with gastrointestinal and dermatological causes prompted us to invest in developing investigative tools and equipment in these two specialties. Analyzing the case records yearly will help make important decisions to develop clinics across the country.

Keywords: Demography, Cats, Retrospective study, Small Animal Clinic (SAC).

INTRODUCTION

The ongoing, systematic collection, analysis, and interpretation of disease-related data is essential to the planning, implementation and evaluation of small animal practice. Publications that documents the demography of small animal medicine in western countries is limited to specific disease studies as opposed to a complete analysis of the demography of cats and dogs presented at clinics (Bland, Guthrie-Jones *et al.*, 2009; Lederer, Rand *et al.*, 2009; Toribio, Norris *et al.*, 2009; Aptekmann and Schwartz, 2011; Gunn-Moore, McFarland *et al.*, 2011). The availability of such data is a valuable

source that directs investments in veterinary care products and medications equally. Because of the close proximity in which both small animals and humans live, case surveys and studies is an important resource for public health practices (Moore and Lund, 2009). Availability of similar studies makes it feasible to justify specialized clinics whether for a single species (e.g. feline-only practices) or referral clinics (e.g. cardiology clinics) and should be a component of feasibility studies. Such uses and functions include the facilitation of planning for appropriate interventions and evaluating the effectiveness of diagnosis and treatment measures. All uses, however, are influenced by the quality and

quantity of information collected (Moore and Lund, 2009). This information is currently unavailable for small animal practices in Egypt or the middle-east although in certain countries and in major cities (e.g. Cairo and Alexandria), small animal clinics have been present for over 30 years.

In this study, we report the demography of small animal cases examined at the Small Animal Clinic at the Faculty of Veterinary Medicine, Assiut University in Egypt.

MATERIALS and METHODS

Collection of Data

Data for this study were obtained by reviewing records of cases examined at the Small Animal Clinic, Faculty of Veterinary Medicine, Assiut University, Egypt between years 2007 and 2009. Both canine and feline case records were included. Aspects of analysis included: total number of cases, species, breed, age, sex, cause for admission and diagnostic outcome. Only cases with complete data sets were included in this study (n= 312), with total traffic reading 545 cases.

Statistical analysis

All data except total number of cases were presented as percentage of the total for each species. For age, simple statistical analysis was carried out to present results as range, mean and median for each species / year. Microsoft office 2007 excel was used to generate these data.

RESULTS

The total number of feline and canine cases, percentage of male versus female and total case traffic (total number including repeat visits) is summarized in Table 1. Over the first reviewed year (2007) the number of cases was very small totalling ten feline cases and only four canine cases with a total traffic of 20 cases. The number of cases tripled in the following two years. Feline male/ female ratio remained the same over the analysis period (1:1) whereas that of canine cases was 100% females in the first studied year which then turned into the expected 1:1 male/female ratio in the following two years with the increase of total number of cases seen.

The age of feline cases seen ranged from 1 to 132 months old over the three reported years, with an average age of 16.4 and a median of 10 months old. The age range for dogs seen at the clinic over the

three year period ranged from 0.5 to 132 months old with an average of 40.6 and a median of eight months. The detailed set of results for each reported year is summarized in Table 2.

The most popular feline breeds to the owners were longhaired cats (Persian, Turkish Angora and European Longhair) which occupied 80% of the total in the first year and 61-63% in the following two years (Table 3, Fig 1). For dog owners, the most popular dog breed was the Griffon. More canine breeds were represented in the following two years with an obvious increase of the number of Rottweiler breed (15 %). Details of breed percentages over the three-year period are summarized in Table 4 and Fig. 2.

In this study, the reason for presenting cases was split according to the owner's complaint combined with the outcome of examination into general health check and/or routine vaccination (GHC), Urinary, Dermatological, Gastroenterological (GI), Respiratory, Reproductive, Traumatic, Ophthalmological, and Neurological. For feline cases in the first year, the most common cause for presentation was GHC, GI and reproductive problems (21%) each. In the following two years, cases with dermatological problems increased (16% and 32%) respectively. A large % of cases were still seen for GHC reaching 29.6% in the third year. Detailed results of all other causes for presentation is summarized in Table 5 and examples of cases seen at the clinic is presented in Plate 1.

Dogs were presented to the clinic in year 2007 with dermatological problems (66.6%) and for reproductive consultation (33.3%). However, these percentages changed dramatically over the following two years with GHC being the primary cause for presentation (24% and 44% respectively). The second most common cause for presentation was GI disturbance and trauma came in third. Detailed percentages of all causes of presentation are summarized in table 5. Percentage of cases coming in for routine vaccination only was small, ranging from 17.7% to 33.3% for cats over the three studied years, and limited to 0% to 20 % for dogs (data not shown).

The percentage of animals that died on presentation or soon thereafter was small and causes of these fatalities were intestinal obstruction, organophosphate toxicity, liver disease, rabies, FLUTD and an untreated case of mega-colon in cats whereas causes of death in dogs were intestinal obstruction, post-surgical and pneumonia (Table 6).

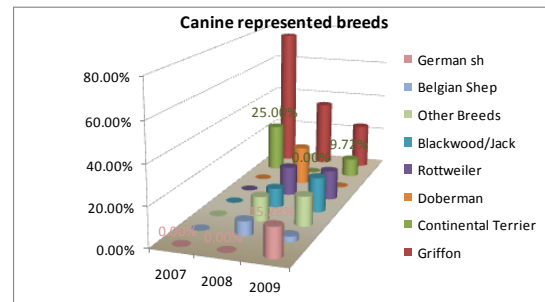
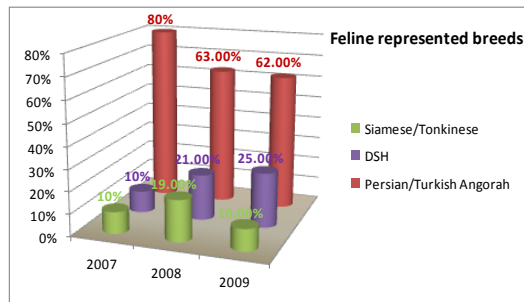


Figure 1: Percentage of feline breeds over the three year study period

Figure 2: Percentage of canine breeds over the three year study period



(a)



(b)



(c)

Plate 1: Examples of feline and canine cases presented at the Small Animal Clinic, Assiut University. a) Catheterised cat suffering from feline lower urinary tract disease, b) A German Shepherd puppy with kennel cough; c) a kitten with severe dehydration.

Table 1: Logistics of feline and canine cases submitted to the Small Animal Clinic 2007-2009

Year	Total Feline Cases	Total Canine Cases	Total Feline Traffic	Total Canine Traffic	Total Traffic	FC	MC	CF	CM
2007	10	4	14	6	20	50	50	100	0
2008	48	40	88	55	129	50	50	50	50
2009	138	72	247	135	348	51.4	48.6	47.2	52.8

Total feline or canine cases represents the total number of cases submitted to the clinic, total feline or canine traffic represents the number of cases including repeat visits of the same case. FC, female cats; MC, male cats; CF, canine females; CM, canine males.

Table 2: Statistical analysis of age of cases submitted to Small Animal Clinic.

	Year	Min	Max	Mean	Median
Feline	2007	2.5	60	17.5	16.5
	2008	2	132	13.8	9
	2009	1	120	17.8	10
Canine	2007	29	108	74.5	68.5
	2008	1	125	26.3	8
	2009	0.5	132	21.1	6

Min, minimum age, Max, maximum age of cases submitted to the clinic.

Table 3: Percentage of breeds of cats submitted to the Small Animal Clinic over the three studied years.

Feline Breeds	2007	2008	2009
Persian/ Turkish Angora	80.0%	62.50%	61.59%
Siamese/ Tonkinese	10.0%	18.75%	10.14%
DSH	10.0%	20.83%	25.36%

Percentage of each breed calculated from the total number of cases submitted each year.

Table 4: Percentage of breeds of dogs submitted to the Small Animal Clinic over the three studied years.

Canine Breed %	2007	2008	2009
Total	4	40	72
Griffon	75.0%	35.0%	23.6%
Continental Terrier	25.0%	0.0%	9.7%
Pekingese	0.0%	2.5%	4.2%
Boxer	0.0%	0.0%	1.4%
German Shepherd	0.0%	0.0%	15.3%
Belgian Shepherd	0.0%	7.5%	2.8%
Rottweiler	0.0%	15.0%	15.3%
Native	0.0%	0.0%	1.4%
Blackwood/Jack	0.0%	10.0%	18.1%
Great Dane	0.0%	0.0%	1.4%
Japanese Spitzer	0.0%	2.5%	0.0%
bull mastiff	0.0%	5.0%	0.0%
American Pit-bull	0.0%	2.5%	0.0%
Doberman	0.0%	20.0%	0.0%
Unknown	0.0%	2.5%	6.9%

Percentage of each breed calculated from the total number of cases submitted each year.

Table 6: Percentage of fatalities and survival rates of cases submitted to the Small Animal Clinic over the three studied years.

Species	Year	% Fatalities	% Survival
Feline	2007	7.14%	92.86%
	2008	5.68%	75.00%
	2009	2.02%	87.85%
Canine	2007	0.00%	100.00%
	2008	1.82%	98.18%
	2009	1.48%	98.52%

Percentage is calculated of the total traffic of cases for each year.

DISCUSSION

In this study, records of cases presented at the Small Animal Clinic, Faculty of Veterinary Medicine at Assiut University between years 2007-2009 were reviewed and data analyzed for demography of small animals in the area as well as owner’s attitudes towards small animal veterinary care. Owner’s attitudes were not questionnaire-based but were deduced from the number of cases over the three year period as well as feedback and follow up data availability.

The dramatic increase in number of cases in the second and third year suggests that there is a small animal owner community that is connected through word-of-mouth as the opening of the clinic was not advertised.

Except for dogs in the first studied year, the male/female ratio was 1:1 in both dogs and cats. Although there was no similar demographic studies to compare our finding to, similar results were reported in studies of risk factor to behavioral problems in dogs (Angela González Martínez, Fco. Javier Dieguez Casalta *et al.*, 2011). The sex bias occurring in the first year was due to the very small number of presented cases so it cannot be considered as a sign for owner-preference to one sex of the other. The cats and dogs included in this study can be considered a random sample of the pet population and in Egypt, the majority of people who keep pets, prefer cats over dogs due to both religious reasons and ease of keeping indoor cats as most people live in apartments rather than houses with gardens. Some of our clients are breeders and they often favor one sex over the other but the number of dogs included in this study did not specifically come from breeders. These findings are different from a previous report studying the demography of the cat population in Sydney, Australia where there was significantly more females than males and the majority was neutered (Toribio, Norris *et al.*, 2009). Our records also show that none of these cats or dogs was neutered. Discussing the

issue with the owners revealed that it was either because they were too worried about their pet being put under anesthesia, they kept the animals for breeding or they just thought it was unfair on the animal to deprive them of their God-given right to procreate. We noticed that this attitude is starting to change as owners can’t keep all the offspring and they are finding it hard to find homes for all of them.

The cases visiting the clinic in this study represent a random sample of the pet population in Assiut governorate. In both dogs and cats, although the age range was wide, the mean and median indicate a shift to the younger age in the population. This could be due to the increase in number of people acquiring new pets in Assiut as suggested by the increase in case number as well as cases coming for a GHC over the three year period or it could be due to the lack of extensive veterinary care geared to older aged pets as the teaching clinic was the first clinic to deal with small animals in the governorate. This hypothesis will be resolved by the continued analysis and study of change in demography of the submitted cases in following years.

There was a very poor representation of pure breeds among the cat population and the ratio was 3:1 to the DSH cats unlike reports of cat population in Sydney, Australia (Toribio, Norris *et al.*, 2009). Discussing why the owner picked a certain breed indicated that the majority just liked cats but no specific breed. Also most owners were not aware of availability of other pure and eccentric breeds in Egypt. A considerable number reported that ever since they were children they acquired cats and that to them each cat is different and has its own charm but they were not really interested in how the cat looked in terms of specific breed details. In general, longhaired cats were most favorable, and most owners called any longhaired cat a Persian. Owners also referred to pure bred Persian as “PeckyFace” and the non-pure bred as “MoonFace” Persian. This terminology is known among Egyptian breeders and the authors are not

aware of the origin of such terminology but it is agreed-on by most longhaired cat-owners.

Unlike cat owners, dog owners are very breed-oriented. The majority owned a specific pure breed and knew the characteristics it should have to belong to that specific breed. The Petit Basset Griffon Vendéen, referred to by owners as "Griffon", was the most popular breed among clinic visitors. All Griffon dogs were indoor-only pets. The second most popular was the Rottweiler and Egyptian BlackWood/Jack, a breed known only among Egyptian dog breeders but not designated as a breed by any international breed association. This breed is a mix between the German shepherd and the Egyptian Mountain dog. Other breeds were also represented in the study such as the Belgian Shepherd, Doberman, Pekingese, Great Dane, Bull Mastiff and the Japanese Spitzer. The interest in pure-bred dogs is really on the increase and the number of dog breeders is also increasing. Dog breeders are either considers it as a lucrative business or they are real dog-lovers and have a genuine interest in how pure the breed is.

To our knowledge, no previous analyses were published documenting the percentage of each diagnostic outcome (specialty) to the overall case load of a certain clinic or institute. Therefore it was difficult to compare our data to previous studies. Several publications exist, however, documenting similar demographic analysis of a single problem (Nodtvedt, Bergvall *et al.*, 2006; Nodtvedt, Egenvall *et al.*, 2006; Nodtvedt, Guitian *et al.*, 2007; Osborne, Lulich *et al.*, 2009; Toribio, Norris *et al.*, 2009; Borge, Tonnessen *et al.*, 2011). The majority of both canine and feline patients were presented for a GHC, followed by those presented with dermatological problems and gastrointestinal problems for cats and traumatic injuries for dogs. Pet shops are not monitored for hygienic standards for the sold pets in Egypt, which explains the prevalence of dermatological problems in presented cats (ear mite infestation, dermatophytosis and mange). Dogs on the other hand are not sold in pet shops; they are distributed by breeders who maintain higher standards for the bred puppies to match the cost of acquiring one by the owner. On average, people pay 3000-8000 L.E. for a Blackwood, and a higher price for foreign breeds which compels the breeders to maintain these high hygienic and health standards for their dogs.

The increase in number of cats and dogs presented for GHC indicates the increase of owner-awareness of the importance of routine checks and vaccinations to the health of their pets.

In this study, it was noticeable that there were no canine cases presented with urinary tract disorders for the whole of the three-year period. It is possible to

correlate that to the age range of dogs we were seeing as the demography of the sample is shifted to the younger age. It has been reported that canine urinary tract disturbance (e.g. urolithiasis) is more prevalent in the 5-11 year age range (Keith D. Rogers, 2011; Vrabelova, Silvestrini *et al.*, 2011).

Understanding patterns of disease in animal populations is required to efficient control of disease and animal health maintenance. Keeping track of morbidity and mortality rates of cases treated in small animal clinics is also important for quality control purposes. A sudden surge of mortality rates of cases diagnosed with treatable disease may point to problems in practice. Unfortunately, studies or records of population-based information on incidence of disease and death in companion animals have been scarce. In western countries, the availability of data from animal insurance companies and computer-based database systems makes it feasible to acquire such information (Bonnett, Egenvall *et al.*, 1997; Bonnett, Egenvall *et al.*, 2005; Egenvall, Bonnett *et al.*, 2005; Egenvall, Bonnett *et al.*, 2006; Bonnett and Egenvall 2010). In our study, the overall mortality of cats and dogs seen at the SAC was very low. Analysis of case records for more recent years is underway and comparing the results of this report to the following ones will be very informative regarding increase or decrease of complexity of cases we see as well as our standard of practice.

CONCLUSION

Maintaining similar analyses and publications is important as it can identify the sudden elevation in disease frequency and link it to a specific event in time. Availability of electronic records and software should make this constant monitoring process simple and straight forward.

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دراسة ديموجرافية الحيوانات الاليفة في أسبوط في الفترة من 2007 إلى 2009: دراسة راجعة لعدد 312 حالة

نشوى عصمت والى ، رحاب كامل سيد

كان الهدف من الدراسة هو التحليل الديموجرافي للحالات المقدمة وسلوك اصحابها تجاه الرعاية البيطرية في المنطقة. هذا وقد تم تحليل سجلات الحالات الواردة لعيادة الحيوانات الاليفة بالمستشفى التعليمي بكلية الطب البيطري بجامعة اسبوط في الفترة من 2007 الي 2009 وذلك في مجالات: اجمالي عدد القطط والكلاب في كل سنة والجنس والسن والفصيلة. كما تم تحليل عدد الوفيات بكل سنة واكثر الشكاوى المقدمة. مقارنة بالعدد المحدود جدا من الحالات في 2007، فقد حدثت زيادة بلغت ضعفين وثلاثة أضعاف عدد حالات القطط والكلاب في السنتين التاليتين تباعا. كان عدد حالات الوفيات أعلى في السنة الأولى مقارنة بالسنتين التاليتين (7.14%، 5.68%، 2.02%). كان أكثر فصائل القطط ورودا هو الفارسي والتركي (الرومي الأبيض)، (62%، 63%، 80%) وبالنسبة للكلاب كان الجريفون (75%، 28%، 24%). كان أكثر الأسباب للحضور بالنسبة للقطط هو الفحص الصحي العام (21.43% - 29.55%) وتبعه مشاكل الجهاز الهضمي (19% - 21%) والأمراض الجلدية (7% - 32%). كان هذا هو نفس الحال بالنسبة للكلاب، في السنة الأولى ، 67% من الحالات حضرت لاسباب جلدية، و 33% من الحالات لاسباب تناسلية، وفي السنتين التاليتين كان أكثر أسباب الحضور هو الإصابات (9% - 13%). كان متوسط الأعمار بالنسبة للقطط 1-132 شهر وبالنسبة للكلاب كان 0.5-132 شهر. ان ازدياد اعداد القطط والكلاب التي حضرت بغرض الفحص الصحي العام يدل علي زيادة الوعي لدي اصحابها فيما يتعلق باهمية الفحص الصحي العام والتطعيمات الدورية. ان ازدياد تردد حالات أمراض الجهاز الهضمي والأمراض الجلدية يتطلب منا البحث عن وسائل تشخيصية ومعدات متقدمة في هذين المجالين. ان التحليل السنوي لسجلات الحالات سيساعدنا علي اتخاذ قرارات مهمة من اجل انشاء العيادات علي مستوى القطر. يساهم ويشكل هذا التخصص منحى اقتصادي مهم سوف يساهم في زيادة فرص العمل للأطباء البيطريين في المنطقة.