RESEARCH ARTICLE

F.U. Vet. J. Health Sci.
2026; 40 (2): 142 - 151
http://www.fusabil.org

Retrospective Analysis of Clinical Diagnoses, Distribution of System Disorders, and Frequency of Visits in Geriatric Cats and Dogs Brought to an Animal Hospital

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This study aims to retrospectively evaluate the clinical diagnoses, distributions, and visit frequencies of geriatric cats and dogs brought to the Animal Hospital for examination between 2022 and 2024. A total of 56,702 patient records were reviewed, and 6,776 (11.95%) were classified as geriatric. According to the AAHA–AAFP guidelines, cats≥10 years of age (n=1343) and dogs in the last 25% of their lifespan (usually ≥7 years; n=5433) are considered geriatric. The findings revealed that geriatric visits were concentrated in the 10–13 age range in cats and the 7–11 age range in dogs. When clinical visits were examined by year, it was observed that the geriatric cat and dog population was gradually increasing. In the analysis by systemic disease, the most common diseases in cats were lower urinary tract diseases, oncological diseases, and gastrointestinal diseases, while oncological, dermatological, and urinary tract diseases were predominant in dogs. The reasons for repeat visits were found to be particularly related to urinary, oncological, and dermatological diseases, supporting the need for regular follow-up of chronic geriatric pathologies. In conclusion, the findings of this study emphasize the importance of early diagnosis, a multidisciplinary approach, and regular monitoring programs in geriatric patients. The data presented on the veterinary geriatric patient population in Türkiye will serve as a reference in both clinical practice and academia.

Key Words: *Cat, dog, geriatric diseases, prevalence*

Hayvan Hastanesine Getirilen Geriatrik Kedi ve Köpeklerde Görülen Olguların Klinik Tanıları, Sistem Bazlı Hastalık Dağılımları ve Ziyaret Sıklıklarının Retrospektif İncelenmesi

Bu çalışma, 2022 ile 2024 yılları arasında Hayvan Hastanesine muayene için getirilen yaşlı kedi ve köpeklerin klinik tanıları, dağılımları ve ziyaret sıklıklarını retrospektif olarak değerlendirmeyi amaçlamaktadır. Toplam 56.702 hasta kaydı incelenmiş ve 6.776'sı (%11,95) yaşlı olarak sınıflandırılmıştır. AAHA–AAFP'ye göre, kedilerde ≥10 yaş (n=1343) ve köpeklerde yaşam süresinin son %25'i (genellikle ≥7 yaş; n=5433) geriatrik olarak kabul edilmiştir. Bulgular, geriatrik ziyaretlerin kedilerde 10-13 yaş aralığında ve köpeklerde 7-11 yaş aralığında yoğunlaştığını ortaya koymuştur. Klinik ziyaretler yıllara göre incelendiğinde, geriatrik kedi ve köpek popülasyonunun giderek arttığı gözlemlenmiştir. Sistemik hastalık analizinde, kedilerde en sık görülen hastalıklar alt üriner sistem, onkolojik ve gastrointestinal hastalıklar iken, köpeklerde onkolojik, dermatolojik ve üriner sistem hastalıkları baskındı. Tekrar ziyaretlerin nedenlerinin özellikle üriner, onkolojik ve dermatolojik hastalıklarla ilgili olduğu tespit edildi, bu da kronik geriatrik patolojilerin düzenli olarak takip edilmesi gerektiğini desteklemektedir. Sonuç olarak, bu çalışmanın bulguları geriatrik hastalarda erken tanı, multidisipliner yaklaşım ve düzenli izleme programlarının önemini vurgulamaktadır. Türkiye'deki veteriner geriatrik hasta popülasyonu hakkında sunulan veriler, hem klinik uygulamada hem de akademide referans olarak hizmet edecektir.

Anahtar Kelimeler: *Kedi, köpek, geriatrik hastalıklar, prevelans*

Received : 30.03.2026
Accepted : 07.04.2026

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Introduction

The geriatric period is characterized by the progressive accumulation of physiological, metabolic, and biological changes, while geriatrics focuses on the diagnosis, treatment, and management of multisystemic diseases arising from these changes. In veterinary medicine, geriatric care necessitates a holistic approach that encompasses not only clinical intervention but also the preservation of quality of life (1-3). Advances in veterinary technology, improved care conditions, higher nutritional standards, and the widespread use of novel treatment modalities have contributed to increased life expectancy in geriatric cats and dogs. This improvement is closely associated with strengthened preventive medicine practices and the early detection and effective management of chronic diseases (2-4).

Guidelines published by the American Animal Hospital Association (AAHA) and the American Association of Feline Practitioners (AAFP) are essential for understanding physiological, neurodegenerative, and behavioral changes in geriatric animals, as well as for defining geriatric life stages in cats and dogs (2, 3, 5, 6). Owing to species and breed variability, no fixed age defines the geriatric period; however, in dogs, it generally corresponds to the final 25% of the estimated lifespan, typically 7 years of age or older

(5, 7-9), while cats aged 10 years and above are considered geriatric (6). These definitions are based not only on chronological age but also on a comprehensive framework that includes preventive strategies, pain management, neurodegenerative processes such as frailty, immunosenescence, and inflammaging, as well as mechanical and systemic effects (1, 10).

The prolonged lifespans of domestic animals, particularly cats and dogs, are associated with an increased prevalence of geriatric diseases, in which chronic conditions, multisystem involvement, and geriatric-specific complications markedly influence clinical evaluation and long-term follow-up. With growing concerns for pet health and welfare, improving the understanding and management of geriatric diseases has become increasingly important, as effective management enhances the quality of life of ageing pets and supports one of the primary objectives of geriatric care (2, 3, 11). Accordingly, this study aimed to investigate geriatric cat and dog populations in Samsun and surrounding provinces (Sinop, Ordu, Giresun, Kastamonu, Amasya, Tokat, Çorum) in the Black Sea region of Türkiye, to assess age-related changes, identify common disease causes during ageing, and evaluate the clinical implications of repeat visits by comparing the findings with life-stage guidelines and existing literature on geriatric patient management. It is anticipated that the results will contribute to improved recognition and management of ageing processes in geriatric cats and dogs.

Materials and Methods

This study was approved by the HADYEK- Local Ethics Committee for Animal Experiments, office of Ondokuz Mayıs University, 2025/16 approval number.

The aim of this study was to determine the demographic characteristics, clinical reasons for referral, and distribution of diagnoses in geriatric cats and dogs presented to the Faculty of Veterinary Medicine Animal Hospital for examination. Data were obtained from the software controlling the university's patient record automation system (E-VET Software©). According to data obtained from records, between 2022 and 2024, the total number of cats of all ages visiting outpatient clinics was 41.529, while the total number of dogs was 19.711. The study population consisted of patients who visited the faculty's Internal Medicine, Surgery, Obstetrics and Gynecology, and Emergency outpatient departments for various reasons. The variables evaluated in the analysis included animal species, age, date of outpatient clinic visit, reason for visit, and diagnoses made as a result of the examination. Specific age ranges were selected to define the geriatric patient. These age ranges were determined based on AAHA and AAFP criteria (10 years and older for cats, 7 years and older for dogs). Visiting patients were classified based on their medical history, patient information, diagnosis, symptoms, and additional patient details available in the automation system software. Records classified according to systemic diseases were carried out using specific keywords for each system (Table 1).

Additionally, all geriatric patients who applied were reviewed and recorded, including those with follow-up or repeat visits after the initial application. Ongoing treatment during repeat visits, as well as follow-up/post-operative classifications, were disregarded when presenting the data. Records containing erroneous or incomplete data were excluded from the study. The identification of erroneous records was performed using the filtering feature of the university's automation system software. The following exclusion criteria were applied during the data cleaning process:

Pharmacy requests, Appointment records, Incorrect or erroneous records, Duplicate or redundant records, Records with incomplete medical history or diagnosis information. A total of 3.321 cats and 1.217 dogs that met at least one of the criteria specified in the data cleaning process were excluded from the study. Consequently, a total of 38.208 cats and 18.494 dogs with complete records in the system brought to the hospital between 2022 and 2024 were included in the study.

Artificial intelligence models were utilized during the statistical analysis of the data (OpenAI, Google AI). For data acquisition and mathematics, coding software was utilized (Python Software, version 3.11). Data analysis software and libraries (Pandas) were used for statistics, and data visualization libraries (Matplotlib) were used for graphs and visualizations. Descriptive statistics (percentages, frequency distributions) were calculated, and the results were presented in tables and graphs.

Results

During the study period, a total of 56.702 cats and dogs brought to animal hospital clinics were included in the study. Of these patients, 6.776 were assessed as geriatric. Cats accounted for 1.343 (≥10 years) and dogs for 5.433 (≥7 years) of the total number. The findings obtained were evaluated in four categories: the distribution of geriatric cats and dogs by year, the distribution of geriatric cats and dogs by age group, the distribution of geriatric cats and dogs by systemic disease, and the distribution of geriatric cats and dogs by number of repeat visits.

Distribution of Geriatric Cat and Dog Numbers by Age: According to the study, 9591 cats and 5884 dogs were visited in 2022, 13.809 cats and 6.352 dogs in 2023, and 14.808 cats and 6.258 dogs in 2024 (Figure 1). When examining the age distribution of cats, 3.10% (n=297) of 9.591 cats in 2022, 3.11% (n=429) of 13.809 cats in 2023, and 4.16% (n=617) of 14.808 cats in 2024 were aged 10 years or older and were considered geriatric cats. When examining the age distribution of dogs, 26.10% of 5.884 dogs (n=1.536) in 2022, 28.37% of 6.352 dogs (n=1,802) in 2023, and 33.47% of 6.258 dogs (n=2,095) aged 7 years and older in 2024 were geriatric dogs (Figure 2).

Table 1. Sample of keywords used for the classification of systemic diseases

System	Keywords
Dermatological	Wound, itching, bite, skin, flea, allergy, area, hair, dermatitis, neck, alopecia, lesion, tail, greasiness, redness, scabies, tick, Wood's lamp, fungus
Oral problems	Tooth, mouth, foul odour, food, tartar, gingivitis, calculus, gum, jaw, halitosis, decay, stomatitis, plaque, eosinophilic, calicivirus, tooth extraction, hyporexia, dental
Endocrinology	Diabetes mellitus, insulin, pancreatitis, comorbid, hypothyroidism, hyperthyroidism, glucometer, weight loss, loss of appetite, fat accumulation, obesity, alopecia, Cushing's syndrome, Addison's disease
Gastrointestinal	Vomiting, diarrhea, milk, constipation, gastritis, fatigue, stomach, constipation, pancreatitis, foreign body, obstruction, liver, bile, parvovirus
Ophthalmological	Eye, cataract, dye, keratitis, corneal, vision loss, oedema, cornea, Schirmer, lens, blindness, opacity, discharge, redness, fluorescein, glaucoma, crusting, eyelid, hyphemia, herpesvirus
Hematological	Hematoma, hemograms, leukocytosis, anemia, leukocyte, neutrophilic, leukemia, thrombocytopenia, hematology, leukopenia, panleukopenia, cachexia, hematocrit, blood parasite, anaplasma, babesia, mycoplasma, parvovirus
Cardiovascular	Heart, heart failure, cardiological, echocardiography, congestive, mitral valve, tricuspid valve, aorta, echocardiography, flow, dilatation, ECG, VHS, X-ray, respiratory distress, exercise intolerance, cardiac, cardiomyopathy, leak, atrial dilatation, HCM, ventricular, effusion, systolic, hypertrophic, oedema, dirofilariasis, heartworm
Orthopedic	Lameness, dislocation, fracture, coxofemoral, hip, traffic accident, deformity, osteoarthritis, spondylitis, soft tissue, dysplasia, patella, degenerative, radiography, damage, orthopedic, extremity, dislocation, separation, comminuted fracture, femur, humerus
Check-up/Post-op	Post-operative, check-up, suture status, dressing, bandage change, recovery, healthy, discharge, hemograms, biochemistry, routine, check-up, results, lab, laboratory
Ear problems	Ear, otitis, otitis externa, ear discharge, ear polyps, sedation, itching, head shaking, otitis media, otitis interna, foul-smelling ear discharge, foul odour, acne, otoscope, hearing loss, eardrum, polyps, scabies, ear mites
Metabolic	Obesity, diet, acidosis, alkalosis, hypothermia, hypocalcemia, hypercalcemia, hypophosphatemia, hyperphosphatemia, hypokalemia, hyperkalemia, hypoglycemia, electrolyte, hypovolemia
Neurological	Seizure, status, convulsion, epilepsy, neurological, paralysis, facial, stroke, paresis, nerve, nystagmus, cluster seizures, idiopathic epilepsy, paralysis, FIP, distemper
Oncological	Mass, tumor, swelling, gland, lymph, needle, fine needle aspiration, cancer, pathology, sarcoma, fibrosarcoma, lipoma, calipers, adenocarcinoma, tumoral, metastasis, neoplasia
Reproductive	Discharge, castration, pyometra, vagina, birth, uterus, prostate, sterilization, bleeding, pregnancy, ovary, ovariohysterectomy, hyperplasia, cyst, infertility, breast, milk
Pulmonary	Cough, respiration, bronchitis, X-ray, wheezing, kennel cough, dyspnea, pneumonia, lung, radiography, auscultation, friction, oedema, pleura, diaphragm, interstitial, nasal discharge, upper respiratory tract infection
Urinary	Urine, kidney, bladder, urinary retention, stranguria, pain, stone, cystitis, chronic, hematuria, urethrostomy, urolith, drop, straining, rupture, catheterization, pyelonephritis, polycystic kidney
Ongoing-Treatment	Fluid therapy, ongoing treatment, dt, ongoing treatment, continuation of treatment, fluid administration, injection, medication, medication administered, injection application

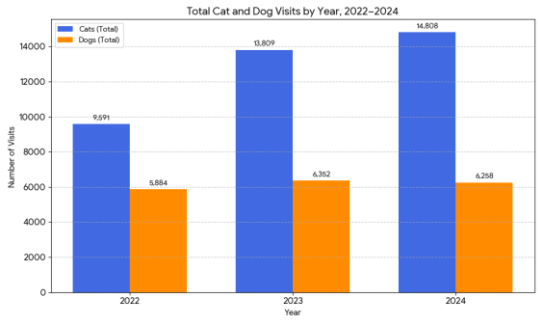


Figure 1. Total number of visits for cats and dogs between 2022 and 2024

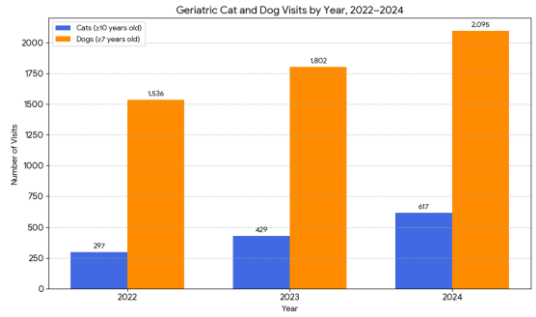


Figure 2. Total number of geriatric cat and dog visits for the years 2022-2024

Distribution of Geriatric Cats and Dogs by Age Group: The most common age groups for cats were 2 years old (n=11.247) at 29.44%, 1 year old (n=10.798) at 28.27%, 14.45% for 3 years old (n=5.520), 8.53% for 4 years old (n=3.259), and 4.55% for 0-12 months old (n=1,740). The lowest number of applications, at a rate of 0.01%, was recorded in the 26 (n=1), 20 (n=2), 19 (n=5), 25 (n=8), and 24 (n=11) age groups. The highest number of applications for dogs were recorded in the 1-year-old group (n=4.042) at 21.86%, the 2-year-old group (n=2.983) at 16.13%, 10.30% in the 3-year-old group (n=1.904), 7.80% in the 4-year-old group (n=1.442), and 6.78% in the 5-year-old group (n=1.253). The lowest numbers of applications were found in the 20 and 22 age groups (n=14) at 0.08%, the 21-year-old age group (n=20) at 0.11%, the 19-year-old age group (n=23) at 0.12%, and the 18-year-old age group (n=34) at 0.18%. According to the data examined, the oldest cat was 26 years old, and the oldest dog was 22 years old (Table 2).

Within the scope of the study, when the distribution of geriatric cats and dogs was examined, the most prevalent age groups in cats were 11 years old (n=265) at 19.73%, 10 years old (n=225) at 16.75%, 13 years old (n=217) at 16.16%, 12.88% at 12 years old (n=173), and 10.57% at 14 years old (n=142). In dogs, the most common age groups were 16.25% at 7 years old

(n=883), 13.33% at 10 years old (n=724), 13.27% for 9 years old (n=721), 12.77% for 8 years old (n=694), and 11.01% for 11 years old (n=598) (Table 3).

Table 2. Distribution of cats and dogs by age (%)

Age	Cat visit count (n)	Cat visit rate (%)	Dog visit count (n)	Dog visit rate (%)
0-12 month	1740	4.55	525	2.84
1	10798	28.27	4042	21.86
2	11247	29.44	2983	16.13
3	5520	14.45	1904	10.30
4	3259	8.53	1442	7.80
5	1716	4.49	1253	6.78
6	1103	2.89	912	4.93
7	687	1.80	883	4.77
8	372	0.97	694	3.75
9	423	1.11	721	3.90
10	225	0.59	724	3.92
11	265	0.69	598	3.23
12	173	0.45	459	2.48
13	217	0.57	448	2.42
14	142	0.37	423	2.29
15	100	0.26	218	1.18
16	65	0.17	98	0.53
17	54	0.14	62	0.34
18	25	0.07	34	0.18
19	5	0.01	23	0.12
20	2	0.01	14	0.08
21	16	0.04	20	0.11
22	12	0.03	14	0.08
23	22	0.06	-	-
24	11	0.03	-	-
25	8	0.02	-	-
26	1	0.01	-	-

Table 3. Distribution of geriatric cats and dogs by age (%)

Age	Geriatric cat visit (n)	Geriatric cat visit rate (%)	Geriatric dog visit (n)	Geriatric dog visit rate (%)
7	-	-	883	16.25
8	-	-	694	12.77
9	-	-	721	13.27
10	225	16.75	724	13.33
11	265	19.73	598	11.01
12	173	12.88	459	8.45
13	217	16.16	448	8.25
14	142	10.57	423	7.79
15	100	7.45	218	4.01
16	65	4.84	98	1.80
17	54	4.02	62	1.14
18	25	1.86	34	0.63
19	5	0.37	23	0.42
20	2	0.15	14	0.26
21	16	1.19	20	0.37
22	12	0.89	14	0.26
23	22	1.64	-	-
24	11	0.82	-	-
25	8	0.60	-	-
26	1	0.07	-	-

Distribution of Geriatric Cats and Dogs According to Systemic Diseases: The most frequently recorded systemic diseases in cats were urinary system diseases (n=169) at 12.58%, oncological diseases (n=140) at 10.42%, gastrointestinal diseases (n=122) at 9.08%, dermatological diseases (n=61) at 4.54%, 3.50% dental and oral diseases (n=47), 2.23% hematological disorders (n=30), 2.01% for orthopedic diseases (n=27), 1.94% for ophthalmological diseases (n=26), 1.86% for cardiovascular diseases (n=25), 1.41% for pulmonary diseases (n=19), 1.19% for reproductive system diseases (n=16), 0.52% for neurological diseases (n=7), 0.45% for endocrine diseases (n=6), 0.15% for metabolic diseases (n=2), and 0.07% for ear diseases (n=1). In dogs, the most frequently recorded systemic diseases were oncological diseases (n=994) at 18.30%, dermatological diseases (n=514) at 9.46%, 7.25% urinary system diseases (n=394), 6.42% gastrointestinal diseases (n=349), 4.82% ophthalmological diseases (n=262), 4.51% cardiovascular diseases (n=245), 4.21% orthopedic diseases (n=229), 2.91% neurological diseases (n=158), 2.36% hematological disorders (n=128), 2.12% for reproductive system diseases (n=115), 1.95% for pulmonary diseases (n=106), 1.01% for ear diseases (n=55), 0.70% for dental and oral diseases (n=38), endocrine diseases (n=15) at 0.28%, and metabolic diseases (n=2) at 0.04% (Table 4).

Table 4. Systematic disease distribution and percentages (%) in geriatric cats and dogs

Group	Geriatric cat visit (n)	Geriatric cat visit rate (%)	Geriatric dog visit (n)	Geriatric dog visit rate (%)
Ongoing Treatment	322	23.98	343	6.31
Check-up / Post-op.	241	17.94	1204	22.16
Urinary	169	12.58	394	7.25
Oncological	140	10.42	994	18.30
Gastrointestinal	122	9.08	349	6.42
Dermatological	61	4.54	514	9.46
Dental and Oral	47	3.50	38	0.70
Hematological	30	2.23	128	2.36
Orthopedic	27	2.01	229	4.21
Ophthalmological	26	1.94	262	4.82
Cardiovascular	25	1.86	245	4.51
Pulmonary	19	1.41	106	1.95
Reproductive	16	1.19	115	2.12
Neurological	7	0.52	158	2.91
Endocrine	6	0.45	15	0.28
Metabolic	2	0.15	2	0.04
Ear	1	0.07	55	1.01
Other / Healthy	82	6.11	282	5.19

Distribution of Geriatric Cats and Dogs According to the Number of Repeat Visits: In geriatric cats, recurrent clinical visits were most frequently recorded at 20.03% for 11 years of age (n=236), 16.55% for 13 years of age (n=195), 15.62% for 10 years of age (n=184), 13.15% at 12 years (n=155), and 10.95% at 14 years (n=129). When examining repeated clinical visits in geriatric dogs, the highest rates were observed at 15.37% at 7 years (n=711), 14% in the 10-year-old group (n=648), 12.71% in the 9-year-old group (n=588), 12.51% in the 8-year-old group (n=579), and 10.98% in the 11-year-old group (n=508) (Table 5).

The most frequently recorded systemic diseases in cats during repeat visits were urinary system diseases (n=142) at 25.49%, oncological diseases (n=125) at 22.44%, gastrointestinal diseases (n=98) at 17.59%, dermatological diseases (n=55) at 9.87%, and dental and oral diseases (n=40) at 7.18%. In dogs, the most common recurrent systemic diseases were oncological diseases at 34.74% (n=919), urinary system diseases at

13.35% (n=353), dermatological diseases at 12.17% (n=322), cardiovascular diseases at 7.60% (n=201), and orthopedic diseases at 7.19% (n=190) (Table 6).

Table 5. Distribution and percentage rates (%) of geriatric cats and dogs' repeated clinical visits according to age

Age	Geriatric cat visit (n)	Geriatric cat visit rate (%)	Geriatric dog visit (n)	Geriatric dog visit rate (%)
7	-	-	711	15.37
8	-	-	579	12.51
9	-	-	588	12.71
10	184	15.62	648	14.00
11	236	20.03	508	10.98
12	155	13.15	402	8.69
13	195	16.55	396	8.56
14	129	10.95	379	8.19
15	91	7.72	183	3.96
16	59	5.01	88	1.90
17	50	4.24	54	1.17
18	22	1.87	31	0.67
19	3	0.25	20	0.43
20	2	0.17	10	0.22
21	11	0.93	16	0.35
22	7	0.59	14	0.30
23	18	1.53	-	-
24	8	0.68	-	-
25	8	0.68	-	-

Table 6. Systematic disease distribution and percentage rates (%) of repeat clinical visits for geriatric cats and dogs

Group	Geriatric cat visit (n)	Geriatric cat visit rate (%)	Geriatric dog visit (n)	Geriatric dog visit rate (%)
Urinary	142	25.49	353	13.35
Oncological	125	22.44	919	34.74
Gastrointestinal	98	17.59	155	5.86
Dermatological	55	9.87	322	12.17
Dental and Oral	40	7.18	30	1.13
Hematological	10	1.79	34	1.28
Orthopedic	12	2.16	190	7.19
Ophthalmological	20	3.59	163	6.16
Cardiovascular	22	3.95	201	7.60
Pulmonary	11	1.97	82	3.10
Reproductive	9	1.62	76	2.87
Neurological	3	0.54	82	3.10
Endocrine	2	0.36	7	0.26
Metabolic	1	0.18	1	0.04
Ear	1	0.18	23	0.87
Other	6	1.08	8	0.30

Discussion

Using the classification criteria of ≥10 years for cats and ≥7 years for dogs in the study population, it was determined that geriatric individuals constituted 11.95% of the total number of cats and dogs visiting the Veterinary Faculty Animal Hospital outpatient clinics between 2022 and 2024. The data obtained from Samsun province and its surroundings in the Black Sea region were found to be consistent with similar studies reported in Afyonkarahisar and Istanbul. The data from this study contribute to the understanding of the prevalence of geriatric patients in Türkiye (12, 13).

Inter-species Distribution: The highest number of geriatric referrals in cats occurs in the 10–14 age range (76.09%), while in dogs it occurs in the 7–11 age range (66.63%), which is consistent with the life stage guidelines defined in the literature (2, 3, 5, 6). The oldest recorded cat was 26 years old and the oldest dog was 22 years old, suggesting that individual differences in lifespan are related to environmental factors, care conditions, and genetic characteristics (3, 4, 11). The impact of individual differences highlights the importance of follow-up and routine check-ups in geriatric patients.

Assessment based on systemic diseases: The most common pathologies encountered in geriatric cats are urinary system diseases (12.58%). This is consistent with studies reporting that chronic kidney disease (CKD) has a high prevalence (15-30%) and is a leading cause of morbidity in geriatric cats (14-18). Furthermore, numerous lower urinary tract diseases, such as urethral obstruction and cystitis, have been frequently observed in geriatric cats. However, as reported in other studies, bladder problems tend to emerge at a younger age, and geriatric data primarily pertain to repeat visit records for the primary complaint, exhibiting a lower prevalence compared to the younger population (19, 20). In geriatric dogs, the prevalence of urinary tract diseases was determined to be 7.25%. This rate is lower than the prevalence observed in cats (12.58%). The most common problem in geriatric dogs in the literature is CKD, and it has been reported that its prevalence increases with age and is reported at a rate of 0.5–3% in the clinical population (17, 21). In addition, recurrent urinary tract infections, benign prostatic hyperplasia, and urolithiasis are among the common diseases in geriatric dogs (22, 23). The frequent occurrence of urinary tract diseases in this study suggests that these diseases have a chronic course in geriatric cats and dogs. The data obtained in the study are consistent with those found in the literature.

The second most common pathologies in cats are reported to be oncological diseases (10.42%). Among oncological cases seen in geriatric cats, lymphoma stands out as the most common oncological disease; intestinal lymphoma is frequently reported, especially in older cats that are FeLV negative. In addition, neoplasms originating from the mammary gland (mammary tumours) and soft tissue tumours (e.g., squamous cell carcinoma, fibrosarcoma) are significant, particularly in unspayed females (24, 26). In a study published by Seung et al. in 2024 (27), the average age of cats diagnosed with malignant tumours was 9.33, while the average age of cats diagnosed with benign tumours was reported as 6.60. In the study, the prevalence of oncological diseases in geriatric dogs was recorded at 18.30% (n=994) and ranked first in the distribution of systemic diseases. This rate is consistent with findings reported in the literature. A large-scale epidemiological analysis reported that skin and subcutaneous neoplasms in dogs become more prevalent with advancing age, and that mast cell tumors, lipomas, and melanomas are among the most common tumors in geriatric individuals (28, 29). This finding is

explained by the weakening of immune mechanisms that accompany aging, a decline in DNA repair capacity, and chronic inflammation (inflammaging). It has been reported that oxidative stress and chronic inflammatory processes in elderly dogs and cats contribute to tumour development along with neurodegenerative changes (10). Studies conducted on dogs in the literature have demonstrated that oncological cases increase with age, with neoplasia observed in 14.70% of dogs aged 7 years and older (28-30). The high prevalence of oncological cases in this study underscores the importance of routine screening and early diagnosis strategies in geriatric dogs and cats. Our findings are consistent with the literature.

Gastrointestinal symptoms are also frequently observed in geriatric cats (9.08%). This condition is largely associated with decreased digestive system motility, neoplasms, and chronic enteropathies in geriatric animals (31). It has been reported that these symptoms in geriatric cats, unlike in young cats, are not primarily due to a gastrointestinal disease but are associated with systemic diseases (particularly chronic renal failure, chronic pancreatitis, cholangitis, or hyperthyroidism). Furthermore, triaditis is common in the geriatric population (17–39%), suggesting that gastrointestinal symptoms may indicate multi-organ dysfunction rather than a single system disorder (32). Gastrointestinal pathologies have been observed in 6.42% of geriatric dogs. As in cats, pathologies developing in the digestive system with age are frequently observed in geriatric dogs (31). Gastrointestinal pathologies in dogs have been reported at a rate of 2.70% in the literature (33). Our data reveal an increase in expected gastrointestinal pathologies in the geriatric patient population, which is largely consistent with the existing literature.

In this study, the prevalence of dermatological diseases in geriatric cats was found to be 4.54% (n=61), and in dogs, 9.46% (n=514). In the literature, allergic and atopic dermatitis are among the primary dermatological issues affecting dogs during the geriatric period. Atopic dermatitis, in particular, is one of the most frequently encountered dermatological pathologies (34). In a study conducted by Villamil et al. in 2011 (30), it was reported that neoplasms originating from the skin and subcutaneous tissues increased significantly with age in dogs, and that mast cell tumours were particularly common in older age groups. In cats, dermatological conditions are more commonly associated with parasitically induced allergic dermatitis, fungal infections, and skin diseases secondary to endocrine/metabolic disorders (35). The lower incidence in cats compared to dogs in this study may be attributed to the fact that skin diseases in cats typically present as systemic or secondary clinical signs.

The prevalence of cardiovascular diseases was found to be 1.86% (n=25) in cats and 4.51% (n=245) in dogs. The most common cardiac disease in geriatric cats is hypertrophic cardiomyopathy (HCM), the prevalence of which increases with age. Studies have reported that HCM in cats occurs at an average age of 7.54 years (36, 37). In dogs, mitral valve degeneration is common in older animals (38). It is known that the prevalence of heart disease increases with age (36). A study published by da Costa et al. (39) found that the average age of dogs with heart disease was 11.6±3.2 years. Our findings support the rates reported in the literature.

When examined in terms of orthopedic diseases, 2.01% (n=27) of geriatric cats and 4.21% (n=229) of dogs in the study were found to have orthopedic problems. To the authors' knowledge, there is no data in the literature regarding the prevalence of orthopedic diseases in geriatric cats and dogs. However, specific prevalence rates for certain orthopedic diseases are available. While the prevalence of osteoarthritis in geriatric cats is reported as 61% in the literature, this rate was lower in the study (40). According to a study conducted by Roitner et al. (41), degenerative joint diseases and osteoarthritis are known to be common in geriatric dogs (40.3%). Our findings are inconsistent with the existing literature, suggesting that orthopedic diagnoses are often underreported in clinical records. This discrepancy is thought to stem from the lack of routine check-ups in geriatric cats and dogs, highlighting the importance of routine check-ups.

When evaluated in terms of ophthalmological diseases, the prevalence was found to be 1.94% (n=26) in cats and 4.82% (n=262) in dogs. While ocular lesions associated with hypertension are frequently reported in geriatric cats, cataracts and retinal degeneration are more prevalent in dogs (42-45). Studies conducted by O'Neill et al. (46) and Dan et al. (47) reported the incidence of ophthalmic diseases as 6.7% in cats and 11.5% in dogs. Our findings are not consistent with the data in the literature. The discrepancy between the data reported in the literature and the data obtained in this study is attributed to the underreporting of ophthalmic diseases in clinical records.

Hematological diseases were observed in 2.23% (n=30) of cats and 2.36% (n=128) of dogs. Anemia associated with chronic kidney disease is common in geriatric cats (15). In dogs, hematological conditions are typically associated with lymphoproliferative diseases or chronic inflammation (48-50). Our findings are consistent with the prevalence reported in the literature, which is 2.3% in cats and 0.7% in dogs.

The study found that dental and oral diseases were detected in 3.5% (n=47) of cats and 0.7% (n=38) of dogs. Although chronic gingivostomatitis is reported to be common in cats in the literature (26.6%), our records indicate a lower prevalence; this suggests limitations in clinical records (51, 52). In dogs, the prevalence of oral diseases has been reported to range from 9.3% to 18.2% (53). This finding also differs from our clinical data, suggesting underreporting.

Reproductive system diseases were observed in 1.19% (n=16) of cats and 2.12% (n=115) of dogs. In dogs, benign prostatic hyperplasia (BPH) has a high prevalence in intact males during the geriatric period (16-50%) (22). In cats, mammary tumors have been

reported to have a high prevalence in the literature (17.30%) (24, 25). The findings of this study are not consistent with the data in the literature. It is thought that this situation may be due to reproductive diseases being classified as oncological diseases in the automation system software.

Neurological diseases were recorded in 0.52% (n=7) of cats and 2.91% (n=158) of dogs. Cognitive dysfunction syndrome and epileptic seizures are common in geriatric cats and dogs (54-56). Studies have reported the prevalence of cognitive dysfunction syndrome in geriatric cats and dogs to be between 28% and 50% in cats and between 28% and 68% in dogs (54, 55, 57). The literature differs from our clinical data, suggesting underreporting and underdiagnosis.

The prevalence of ear diseases was recorded as 0.07% (n=1) in cats and 1.01% (n=55) in dogs. In dogs, ear diseases have been most frequently observed in the 1-4 age range in the literature (39.78%), and it has been reported that this rate decreases with age, falling to 5.2% in dogs aged 12 years and older (58, 59). The prevalence of otitis externa in geriatric cats has been reported as 1.4% in the literature (59, 60). The literature differs from our clinical data, suggesting underreporting and underdiagnosis.

Pulmonary diseases were detected in 1.41% (n=19) of cats and 1.95% (n=106) of dogs. Chronic asthma (1-5%) is frequently reported in geriatric cats, while chronic bronchitis (24.3%) and tracheal collapse (30.7%) are more commonly reported in geriatric dogs with chronic cough (61-65%). The low incidence of respiratory diseases, especially those of infectious origin, is related to reduced exposure in this age group, the coding of chronic cases under other system headings in our automation system, or the reduced frequency of typical clinical symptoms due to immunosenescence (10, 62). Our findings are consistent with the data on respiratory diseases in geriatric cats reported in the literature; however, differences were observed in geriatric dogs. It is thought that this situation may be due to pulmonary diseases being classified as cardiac diseases in the automation system software.

Endocrine diseases were recorded with a prevalence of 0.45% (n=6) in cats and 0.28% (n=15) in dogs, while metabolic diseases were recorded with a low prevalence of 0.15% (n=2) in cats and 0.04% (n=2) in dogs. The most common endocrine disease in geriatric cats is hyperthyroidism (5.2%), while the most common metabolic disease is obesity (13.1%). In geriatric dogs, especially those aged 13 years and older, hypothyroidism (5.68%) is the predominant endocrine disease. Obesity (28.57%) is the predominant metabolic disorder in dogs aged 7-9 years (11, 60, 66-68). The low incidence of diseases affecting these two systems in our findings suggests inadequacies in disease diagnosis, deficiencies in record-keeping, and insufficient routine check-ups.

Evaluating Repeat Visits: Repeated visits for geriatric cats and dogs are concentrated in urinary (25.49%), oncological (22.44%), and gastrointestinal (17.59%) diseases in cats; while in dogs, they are predominantly oncological (34.74%), urinary (13.35%), and dermatological (12.17%) diseases, indicating that these groups mostly consist of chronic pathologies requiring long-term management. This table highlights that, beyond the diagnostic approach accompanying the initial consultation in geriatric patients, multidisciplinary follow-up protocols involving regular check-ups, optimized drug treatment, nutrition and hydration strategies, and comprehensive monitoring of comorbidities are crucial for clinical outcomes (2, 3, 5, 6). In particular, the high oncological burden in dogs and the severity of chronic kidney cases in cats necessitate the prioritization of case discussion councils, palliative care, and the systematization of pain management plans (18, 67).

Age distributions also support this need: the clustering of repeat visits in the 10–14 age range (76.30%) in cats and the 7–11 age range (65.57%) in dogs is consistent with age-related patterns of progressive chronic disease (1, 5, 6, 10, 63). This finding supports the identification of age-based thresholds for routine and regular follow-up in clinical practice (e.g., renal function tests, blood pressure measurement, urine analysis every 3–6 months; re-evaluations parallel to treatment cycles in oncology patients; care plans targeting flare-up periods in dermatology cases) and defining early intervention thresholds, owner education, and resource planning (laboratory, imaging, consultation) in clinical practice (2, 3). Similarly, AAHA and AAFP guidelines also emphasize that early diagnosis and regular follow-up are fundamental strategies in clinical management for geriatric individuals (2, 3, 5, 6).

Due to retrospective design, deficiencies in medical history and diagnosis records have led to the exclusion of some data, constituting a limiting factor of the study. Furthermore, because the automation software system used at the animal hospital did not record information such as breed, sex, and weight of the animals, these data could not be included in the study. The age limits used in the geriatric period definitions for cats and dogs should be considered a methodological limitation, as they do not fully reflect breed and individual differences. Due to an agreement between the animal hospital where the study was conducted and the municipal shelter, a large number of stray animals are brought to our hospital and transferred to the shelter after initial treatment. These patients generally represent the puppy and young population and do not revisit the hospital, which significantly affects the data in the study, particularly the rate of geriatric patients.

As a result of the study, the data obtained contribute to the epidemiological data on veterinary geriatrics in Türkiye. The findings reveal that urinary and gastrointestinal diseases in cats, as well as oncological and dermatological diseases in dogs, are the primary concerns during the geriatric period. The high rate of oncological diseases suggests that routine screening programs (abdominal ultrasonography, blood tests, radiography) should be added to protocols from certain

ages onwards. The prevalence of cardiovascular, urinary, gastrointestinal, and dermatological diseases necessitates the development of geriatric animal nutrition products and supportive treatment options, as well as the establishment of specific follow-up protocols for these systems in veterinary clinics. The inadequacy in diagnosing endocrine and metabolic diseases highlights the importance of routine check-ups. Furthermore, this study and similar studies have reported an increasing geriatric cat and dog population in Türkiye. Population growth, new technological developments in veterinary medicine, the implementation of nutrition and care protocols that extend lifespan, the high frequency of repeat visits, and the chronic nature of geriatric diseases all support the need for regular follow-up. Early diagnosis, a multidisciplinary approach, and regular check-ups form the cornerstones of clinical success in the management of geriatric cats and dogs. The increase in data on the geriatric patient population in Türkiye will greatly contribute to the development of geriatric diseases in veterinary practice, both in clinical practice and in the academic field.

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