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Health care management practices of pet dogs by pet dog owners in Bengaluru city

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Abstract

India has a vast and diverse dog population, comprising around 10.2 million pet dogs and approximately 62 million stray dogs as of 2024. Proper dog management significantly influences their physical and mental well-being, encompassing basic needs like food, water, and shelter, as well as higher needs such as exercise, companionship, and mental stimulation. In urban areas, pet dogs face unique welfare challenges, yet they also offer valuable emotional support, especially in the post-COVID era where loneliness and social isolation have increased. This study focused on pet dog management practices in Bengaluru city and the challenges faced by pet dog owners. A structured questionnaire was administered to 400 pet dog owners at Veterinary College Bangalore to gather data on healthcare practices, categorized by breed type (purebred vs. non-descript) and purebred size (toy, medium, large). The study found to significantly influence pet dog healthcare practices. Purebred owners more often use private vets, keep health records, and incur higher costs, Purebreds had more respiratory, urogenital, dermatological, and cardiovascular issues; mixed breeds had more gastrointestinal and nervous disorders. Purebreds received regular vaccinations, deworming, and ectoparasite control. Bengaluru owners rated clinics followed by home-visiting vets, breeders, pet stores, online consultations, friends, then internet as advice sources

Keywords: Healthcare management, Bengaluru, breed type, breed size

Introduction

India has a large and diverse dog population, with millions of both pet and stray (Indian Pariah) dogs. As of 2024, the country has approximately 10.2 million pet dogs, while the stray dog population is around 62 million (World Population Review, 2024) [13]. While there is no definitive statistic on pet dog ownership in Karnataka, a systematic estimation survey by the Bruhat Bengaluru Mahanagara Palike (BBMP) in 2023 found that the city has nearly 2.8 lakh stray dogs, a reduction of 31,000 from the figures in 2019 (India Today, 2023) [5]. In Karnataka, like many states in India, the stray dog population poses various public health and safety challenges. Additionally, pet adoption drives and awareness campaigns are on the rise, reflecting a growing community of responsible pet owners committed to providing the best care for their canine companions (PETA India, 2023) [8]. This research aimed to explore the varying approaches to pet dog management practices in Bengaluru city, focusing on differences between purebred and non-descript dogs, as well as the unique considerations for different sizes of purebred dogs. Understanding these differences are crucial for investigating how different approaches impact the welfare of dogs considering health factor and overall quality of life; formulating public policies regarding pet breeding, adoption and ownership regulations; providing insights to pet owners, breeders and animal welfare organizations on responsible dog ownership practices tailored to different breeds and backgrounds; and exploring how societal attitudes and cultural norms influence preferences for specific breeds or types of dogs and their treatment. By

addressing these aspects, this research contributes to promoting the welfare of dogs, fostering informed decision-making among stakeholders and advancing the understanding of human-dog relationships in diverse contexts. Thus, the study was undertaken with the following objectives to study the pet dog management practices in Bengaluru city and identify the constraints faced by pet dog owners in Bengaluru city.

Materials and Methods

The study was conducted at the Veterinary College Clinic in Bengaluru, Karnataka. Four hundred pet dog owners were interviewed using a structured questionnaire after pre-testing and refinement. Owners of dogs at least one-year-old were included to ensure detailed information. Data was classified by breed type (purebred vs non-descript) and purebred breed size (toy, medium, large) based on American Kennel Club guidelines. In total, information was collected from 295 purebred dog owners (89 toy, 149 medium, 57 large breeds) and 105 non-descript dog owners. The study collected detailed information on various aspects of pet dog management in Bengaluru. Owner demographics included age, occupation, education, family type, and pet keeping experience. Pet information included breed, age, weight, registration details, temperament, and how the pet was acquired. Frequency and summary statistics were calculated to identify the predominant management practices. Comparison of numerical data was done using ANOVA and that of ordinal data was done using the chi square test.

Results and Discussion

The pet health care and management by pet dog owners and Reliability of information sources for pet care in Bengaluru city according to breed type and purebred breed size is given in Table 1 and 2, respectively.

General healthcare

As per the data, breed type was found to significantly influence pet dog healthcare practices. Purebred owners were more likely to use private veterinary clinics (40.2%) compared to government hospitals favoured by non-descript pet dog owners (82.5%). They were also more likely to maintain pet health records. Contrastingly, Roopa *et al.* (2018) ^[10] found that most pet owners (72.5%) do not keep health records for their pets. Purebred owners more often opted for regular check-ups (66.1%) compared to non-descript pet dog owners who primarily used need-based check-ups (85.7%). However, within purebreds, medium and large breeds had higher rates of regular check-ups compared to toy breeds. The annual veterinary expenses were significantly higher for purebred dogs (Rs. 11,186.18) compared to mixed-breed dogs (Rs. 3,623.81). Breed size did not significantly impact expenditure. While purebred dogs had a higher incidence of respiratory, urogenital, dermatological, and cardiovascular diseases, gastrointestinal and nervous disorders were more common in mixed-breed dogs, and dermatological issues were especially prevalent in toy breeds.

These findings suggest that owners of purebred dogs might be more invested in preventive healthcare through private clinics, regular check-ups and record keeping. This could be due to factors like better socio-economic status, breed-specific health concerns, higher acquisition costs prompting better care, or easier access to information on preventive healthcare. Breed size might also influence check-up frequency and disease prevalence. Owners of toy breeds might have a lower threshold for seeking veterinary care due to their smaller size and potential for more delicate health.

Vaccination

This study investigated vaccination practices in pet dogs and found breed type to be a major factor. Purebred dogs were significantly more likely to receive regular vaccinations (87.9%) compared to non-descript dogs (60.4%). The majority of purebred dogs received the recommended DHPPI+L and Rabies shots in both initial and booster vaccinations (around 75%). In contrast, only 46.8% and 26.8% of non-descript dogs received these vaccinations in the initial and booster shots, respectively. Breed size did not significantly impact vaccination regularity and type. These findings suggest that owners of purebred dogs might be more diligent about following recommended vaccination protocols, potentially due to better access to information, higher veterinary care engagement, or a stronger focus on preventive healthcare for their pets. Regular vaccination (50-85%) was observed in most previous studies (Sakshi, 2015; Ramyasri, 2019; Chowdhury *et al.*, 2021; Selvakkumar, 2021) ^[11, 9, 3, 12]. However, Roopa *et al.* (2018) ^[10] (30%) and Balakrishnan (2018) ^[2] (14%) reported very low rates of regular vaccination.

Deworming

Breed type was found to have a strong influence on the deworming practices in pet dogs. Purebred dogs were significantly more likely to be dewormed regularly (86.6%) compared to non-descript dogs (43.3%). Purebred dogs were dewormed more frequently, with most (66.2%) receiving deworming every three months compared to only 30.4% of mixed-breed dogs. Similar findings have been reported by Selvakkumar (2021) ^[12], Roopa *et al.* (2018) ^[10] and Chowdhury *et al.* (2021) ^[3]. Purebred breed size did not significantly impact deworming regularity and frequency among purebreds. These findings suggest that owners of purebred dogs might be more invested in preventive deworming practices, potentially due to factors like better access to information, more frequent veterinary care, or a general emphasis on preventative healthcare for their pets. However, there is still a significant portion of the dog-owning population that needs to improve in maintaining consistent deworming practices.

Ectoparasite control

Purebred dog owners were more likely to practice regular ectoparasite control (52.0%) compared to non-descript dog owners, with a large portion not practicing it at all (37.3%). They also undertook ectoparasite control more frequently, with most (63.2%) applying them every three months. In contrast, non-descript dog owners primarily applied treatments every six months (62.1%) While these findings are consistent with those of Selvakkumar (2021) ^[12], Chowdhury *et al.* (2021) ^[3] reported much higher values with 90% of pet owners practicing ectoparasite control. Breed size did not significantly impact ectoparasite control regularity and frequency among purebreds. These findings suggest that owners of purebred dogs might be more invested in consistent ectoparasite control for their pets. This could be due to several factors, such as awareness of parasite risks, more frequent veterinary visits which could lead to better recommendations and adherence to ectoparasite control schedules, and a focus on preventive healthcare in general. Overall, breed type appears to be a significant factor influencing both the regularity and frequency of ectoparasite control in pet dogs.

Reliability of information sources for pet care

A survey of pet owners in Bengaluru assessed the reliability of various pet care information sources using the Likert's Scale technique. As per the data veterinary clinic was ranked as the most reliable source, followed by veterinarian home visit, breeder, pet store, online veterinary consultation, friends and the internet. Home visits by veterinarians were seen as reliable due to direct interaction with the veterinarian, but ranked lower than clinics which might offer additional resources and equipment. While online veterinary consultation was convenient, it might be viewed as less reliable due to the lack of a physical examination and potential for impersonal interactions. Breeders and pet stores were seen as moderately reliable; however, they might be viewed as biased towards their focus on selling pets or pet products, leading to scepticism about their objectivity in providing pet care information. Pet owners

might trust recommendations from friends, especially those who are successful pet owners, but their reliability in terms of expert information is low. The internet's vast and sometimes unverified information might lead to concerns about accuracy and source credibility; people might be unsure how to distinguish reliable sources from misinformation online, as well as conflicting information

sources. This lack of reliable information (Leppänen *et al.*, 2000; Duhan *et al.*, 1997) ^[7, 4] among pet dog owners and increased expectations from veterinary professionals (Irwin and Traub, 2006) ^[6] has been highlighted by previous studies. Overall, pet owners in Bengaluru seem to prioritize information from qualified professionals when making pet care decisions.

Table 1: Healthcare management of pet dogs according to breed type in Bengaluru (% , unless mentioned)

Parameter	Breed type			P-Value
	Purebred (n=295)	Non-Descript (n=105)	Overall (n=400)	
Health care provider				
Govt. hospital	37.2	82.5	49.1	<0.001
Private Vet clinic	40.2	16.9	34.1	
App -based home visit	2.3	0.6	16.6	
Health records				
Heath check-up				
Regular	92.5	68.3	86.1	<0.001
Need based	66.1	14.3	52.5	<0.001
	33.9	85.7	47.5	
Annual vet. expenditure (Rs.)				
Commonly occurring diseases	11186.18 ± 578.671	3623.81 ± 111.142	9201.06 ± 331.902	<0.001
Gastrointestinal	56.0	37.2	51.1	0.131
Respiratory	38.1	19.5	33.2	0.015
Urogenital	49.7	31.1	44.8	0.095
Dermatological	72.8	5.4	55.1	<0.001
Cardiovascular	17.9	0.9	13.5	<0.001
Nervous	20.2	18.5	19.8	0.612
Vaccination				
Regular	87.9	60.4	80.7	<0.001
Occasional	11.4	33.5	17.2	
Not practiced	0.7	6.1	2.1	
Initial vaccination				<0.001
Rabies	4.3	26.6	10.2	
DHPPI+L	3.8	24.4	9.2	
DHPPI+L, Rabies	74.5	46.8	67.2	
DHPPI+L, Rabies, KC	15.1	0	11.1	
DHPPI+L, Rabies, KC, CCV	2.9	0	2.1	
Booster vaccination				<0.001
Rabies	6.3	56.6	19.5	
DHPPI+L	2.8	14.4	5.9	
DHPPI+L, Rabies	78.5	26.8	64.9	
DHPPI+L, Rabies & KC	12.1	0	8.9	
DHPPI+L, Rabies, KC & CCV	2.8	0	2.1	

Deworming frequency				<0.001
3 months	66.2	30.4	56.8	
6 months	32.2	31.4	32.0	
12 months		1.9	32.3	9.9
Ectoparasite control				0.023
Regular	52.0	31.3	46.6	
Occasional	42.8	36.4	41.1	
Not practiced		6.1	37.3	14.3
Ectoparasite control freq.				<0.001
3 months	62.6	37.9	56.1	
6 months	37.4	62.1	43.9	

Table 2: Healthcare management of pet dogs according to purebred breed size in Bengaluru (% , unless mentioned)

Parameter	Breed size			Overall (n=295)	P-value
	Toy (n=89)	Medium (n=149)	Large (n=57)		
Health care provider					0.216
Govt. hospital	37.3	39.3	31.4	37.2	
Private Vet clinic	46.1	38.1	36.4	40.2	
App-based home visit	15.6	22.6	32.2	22.3	
Health records	94.4	91.8	91.2	92.5	0.886
Heath check-up					0.048

Regular	56.2	71.8	66.7	66.1	
Need based	43.8	28.2	33.3	33.9	
Commonly occurring diseases					
Gastrointestinal	50.5	59.0	56.8	56.0	0.542
Respiratory	43.3	35.7	36.4	38.1	0.487
Urogenital	45.3	52.3	49.8	49.7	0.138
Dermatological	78.2	72.5	65.2	72.8	0.037
Cardiovascular	15.2	19.5	18.3	17.9	0.208
Nervous	18.2	20.5	22.5	20.2	0.721
Vaccination					0.633
Regular	88.4	86.5	91.2	88.0	
Occasional	10.7	12.8	8.6	11.4	
Not practiced	0.9	0.7	0.2	0.7	
Initial vaccination					0.678
Rabies	4.5	4.7	3.5	4.3	
DHPPI+L	6.8	2.6	2.3	3.8	
DHPPI+L, Rabies	71.8	72.9	82.2	74.5	
DHPPI+L, Rabies, KC	16.8	15.9	10.3	15.1	
DHPPI+L, Rabies, KC, CCV	0.1	4.9	1.8	2.9	

Parameter	Breed size			Overall (n=295)	P-value
	Toy (n=89)	Medium (n=149)	Large (n=57)		
Booster vaccination					0.459
Rabies	6.5	6.7	5.3	6.3	
DHPPI+L	5.8	1.6	1.3	2.8	
DHPPI+L, Rabies	75.8	76.9	86.4	78.5	
DHPPI+L, Rabies & KC	11.8	14.9	5.3	12.1	
DHPPI+L, Rabies, KC & CCV	0.1	4.9	1.8	2.8	
Deworming					0.122
Regular	80.7	89.5	91.2	86.6	
Occasional	18.2	10.1	7.1	11.9	
Not practiced	1.1	0.5	1.8	0.9	
Deworming frequency					0.306
3 months	61.9	7.	62.4	66.2	
6 months	34.2	29.1	37.1	32.2	
12 months	4.7	0.7	0.5	1.9	
Ectoparasite control					0.549
Regular	53.4	50.3	54.4	52.0	
Occasional	41.8	42.6	44.9	42.8	
Not practiced	5.9	7.1	3.8	6.1	
Ectoparasite control freq.					0.277
3 months	66.7	57.7	68.4	62.6	
6 months	33.3	42.3	31.6	37.4	

Distribution of responses, modal values and ranks of the reliability of information sources for pet care in Bengaluru (as per Likert's Scale technique)

Information	Responses (%)			Rank
	High	Moderate	Low	
Veterinary clinic	66.75	26.25	7.00	1
Veterinarian – home visit	43.50	44.25	12.25	2
Breeder/Kennel	31.75	45.25	23.00	3
Pet store	29.50	47.50	23.00	4
Veterinary consultation (online)	22.25	56.50	21.25	5
Friend	22.25	48.50	29.25	6
Internet	27.75	31.00	41.25	7

Note: Modal values are in bold font

Conclusion

Owners of purebred dogs were more likely to use private veterinary clinics, maintain health records, and have regular checkups compared to owners of non-descript dogs. Purebred dogs also had higher annual veterinary expenses. Skin, respiratory, urogenital, and cardiovascular diseases were more common in purebred dogs, while gastrointestinal

and nervous disorders were more frequent in non-descript dogs. Vaccination, deworming, and ectoparasite control were more frequent for purebred dogs as well. Overall, owners of purebred dogs seemed to be more invested in preventive healthcare measures for their pets. Veterinary clinics were ranked as the most reliable source of pet care information, followed by consultations with veterinarians

(both in-clinic and at-home visits), breeders/kennels, pet stores, online veterinary consultations, and friends. The least reliable source, according to the study, was the internet.

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