

FACTORS INFLUENCING CLINICAL CASES OF CATS AT CENTRAL VETERINARY HOSPITAL (CVH), BANGLADESH

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ABSTRACT

Cats are becoming more common as pets in Bangladesh, yet they may get infected with various pathogens and can harbour zoonotic infections. This study aimed to look into the prevalence of clinical cases and management practice of pet cats at the Central Veterinary Hospital (CVH) in Bangladesh. From July to December of 2022, a six-month cross-sectional prospective study was conducted on 153 pet cats that were brought to the CVH. Clinical ailments were identified by the patient owners' complaints, disease histories, and clinical examinations. According to the survey, feline panleukopenia (FP) was the most prevalent clinical case in cats (30.06%), followed by accidental injuries (17.64%), dermatitis (15.03%), laminitis (11.76%), parasitic (8.49%), feline calicivirus infection (6.53%), myiasis (5.88%), and urolithiasis (4.57%). Cross-breed cats had the lowest incidence of clinical cases (7.84%), whereas local cats had the highest prevalence (38.56%). The age group of ">24 months" had the highest prevalence of clinical cases compared to others. Male and female cats had comparable rates of clinical cases (43.79% vs. 56.20%). Furthermore, the prevalence of FP was significantly higher in local cats, in cats of "6-24 months" of age, and female cats compared to others. About half of the pets did not receive an anthelmintic or vaccination. Local breeds had a significantly larger percentage of unvaccinated cats; however, parsian and exotic breeds had the opposite scenarios. The study's findings provide significant new information regarding the most prevalent clinical cases in cats and their vaccination and deworming status needed to keep cats from becoming sick.

Keywords: Clinical cases, deworming, pet cats, prevalence, risk factors, vaccination

INTRODUCTION

Cats are popular pets worldwide and significant members of many civilizations (Hall *et al.*, 2016; Dawson *et al.*, 2019). They are valued family members who support their owners' well-being and the physical, social, and mental development of their children in many homes (Dohoo *et al.*, 1998; Robertson *et al.*, 2000). Having a pet typically entails specific responsibilities, such as providing housing, managing illnesses, and being accountable for pet ownership, which can have detrimental effects on public health if neglected (William *et al.*, 2002). Since cats are raised in environments similar to those of people, there is a chance that they could spread a variety of zoonotic illnesses. The most prevalent health risks are cat bites and allergies to pets, but domesticated cats can also spread a wide range of ailments, including bacterial, fungal, parasitic, and viral illnesses (Plant *et al.*, 1996; Geffray, 1999). In order to guarantee that our pets enjoy comfortable and healthy lives, the animal health industry is at the forefront of pet health care and is always creating innovative products. This covers immunization, deworming, treatments for fleas and ticks, dental care, and skin care. If we choose to live with a cat in our house, we must practice good hygiene and make sure they are free of ticks, worms, and fleas. It will guarantee not only the health of our cat but also our own well-being and the absence of parasites in our home. Despite the fact that Bangladesh has been connected to the existence of multiple serious zoonotic diseases contracted from cats, inland reports on this topic are rather scarce. As a result, research on feline illnesses is required, especially in Dhaka, the city with the highest pet population. Although research on clinical diseases in pets has been carried out across Bangladesh (Tarafder and Samad, 2010; Mahmud *et al.*, 2014; Parvez *et al.*, 2014; Yadav *et al.*, 2017), relatively little is known about the prevalence of these conditions in cats in Dhaka city and the risk factors that are associated with them. Therefore, the current study's objective was to determine the

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prevalence of clinical illnesses and the risk factors that go along with them in cats that were taken to the Central Veterinary Hospital (CVH) in Dhaka to obtain medical assistance.

MATERIALS AND METHODS

Research area and duration

153 pet cats that were taken to the Central Veterinary Hospital (CVH) in Dhaka from July to December of 2022 were used in the study. Every cat, together with its breed, age, sex, and owners' complaints, was entered into the patient registration book.

Methods of diagnosis of diseases

An assessment of the health status of the pet animals, the amount of feed supplied, the feeding habits, the rearing of the pet animals, and the difficulties with the pet animals was used in a retrospective study to determine the illness prevalence and management practices in cats. When patients came to the hospital, their pet owners provided pertinent information about their animal using a pre-structured questionnaire survey. Based on categories, a closed-ended questionnaire was created.

Following a visual examination of the patient, palpation, percussion, auscultation, needle puncture, and an analysis of the animal's gait and posture were used to check various body parts and systems of each sick animal. The general clinical examination was carried out based on the merits of each case, taking into account the owner's complaint, the disease history, the symptoms, and common laboratory procedures and techniques such as microscopic examination (Rosenberger, 1979). Consequently, each of these sick animals' temperature, pulse, and respiration rate were noted.

A close investigation was necessary to correctly observe the presenting evidence of a viral disease, which included respiratory distress, diarrhoea, oculonasal discharge, and a sudden rise in temperature of 102°F to 104°F. In each instance, the rectal temperature was measured using a thermometer. The stethoscope was used to identify respiratory distress and to record and observe lung and tracheal sounds. Presumptive diagnosis for some parasite infections was made using the patient's medical history, clinical signs and symptoms, and stool analysis (Blood and Radostits, 1989). To identify any live or dead worms or tapeworm segments, a thorough inspection of the faeces was conducted. We looked over the animal's body to see whether any ectoparasites were apparent. Ectoparasites were identified using Wall and Shearer's (1997) keys and descriptions.

Statistical analysis

The information pertaining to every patient was collected and input into Microsoft Excel (Microsoft Office Excel-2013, USA). All of the study's data were assessed using the Pearson's Chi-square test using the Minitab17 program (Minitab Ltd., UK). For differences, a significance threshold of $p \leq 0.05$ was used.

RESULTS AND DISCUSSION

Prevalence of clinical cases of pet cats at CVH

From July to December of 2022, a total of 153 clinical cases involving cats were documented at CVH in Dhaka, Bangladesh. The survey found that the prevalence of Feline Panleukopenia (FP) was highest in cat 46 (30.06%) ($p < 0.001$). As illustrated in Fig.1, the subsequent most common disease in cats was accidental injury 27 (17.64%), followed by dermatitis 23 (15.03%), laminitis 18 (11.76%), parasitic 13 (8.49%), feline calicivirus infection 10 (6.53%), myiasis 9 (5.88%), and urolithiasis 7 (4.57%). Similar studies were conducted in Bangladesh by Parvez *et al.* (2014), Sarker *et al.* (2015), Sultana *et al.* (2016), Yadav *et al.* (2017), and Chisty *et al.* (2020); however, the prevalence varied among studies. Sultana *et al.* (2016) and Chisty *et al.* (2020) reported the prevalence of FP of about 7.5% in Bangladesh, which was around 22.5% lower than the present study. The variation might be due to study period and carelessness of the pet's owner regarding vaccination. Accidental injuries was the second highest prevalent clinical cases in this study, which might be due to unconscious movement of the cats. Parasitic diseases also very common in cats. The present study is in agreement with the Sarker *et al.* (2015) who reported the prevalence of parasitic diseases in cats was 13.33%.

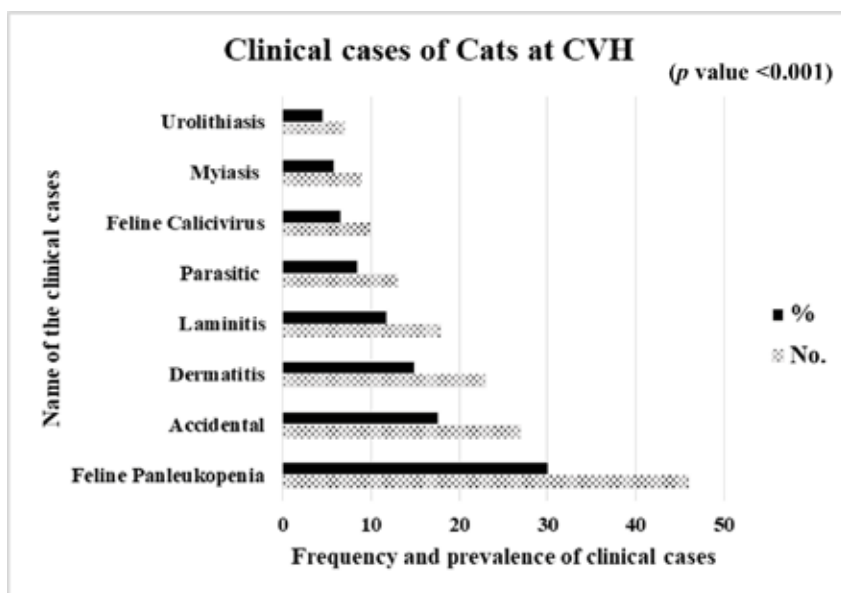


Fig. 1. Prevalence of clinical cases of cats according to diseases types at CVH.

Association of cases with breed, age, and sex of pet cats

The prevalence of clinical cases was highest in Local cats (38.56%) followed by Persian cats (26.14%), non-descriptive cats (15.03%), Exotic cats (12.41%) and lowest in Cross-breed cats (7.84%) as shown in Table 1 ($p < 0.001$). Likewise, Yadav *et al.* (2017) reported local breed (79.70%) were more prone to clinical cases. Furthermore, the prevalence of FP, dermatitis, and myiasis were significantly higher in Local cats compared to other breeds ($p \leq 0.05$). This finding indicates that breed has significant influence on the occurrence of clinical cases of pet cats.

Table 1. Association of clinical diseases of cats between disease types and breed.

Name of the clinical cases	Breed					Chi square p value
	Local	Exotic	Persian	Cross-breed	Non-descriptive	
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	
Feline Panleukopenia	18 (11.76)	7 (4.57)	12 (7.84)	5 (3.26)	4 (2.61)	0.054*
Accidental	9 (5.88)	3 (1.96)	6 (3.92)	3 (1.96)	6 (3.92)	0.32
Dermatitis	14 (9.15)	1 (0.65)	5 (3.26)	1 (0.65)	2 (1.30)	<0.001*
Laminitis	4 (2.61)	2 (1.30)	7 (4.57)	2 (1.30)	3 (1.96)	0.31
Parasitic	3 (1.96)	4 (2.61)	3 (1.96)	1 (0.65)	2 (1.30)	0.73
Felin Calicivirus	3 (1.96)	2 (1.30)	3 (1.96)	0	2 (1.30)	0.55
Myiasis	5 (3.26)	0	2 (1.30)	0	2 (1.30)	0.05*
Urolithiasis	3 (1.96)	0	2 (1.30)	0	2 (1.30)	0.27
Total	59 (38.56)	19 (12.41)	40 (26.14)	12 (7.84)	23 (15.03)	<0.001*

*Significant $p \leq 0.05$

The prevalence of clinical cases of cats was highest in age group of “>24 months” (50.98%) followed by “6-24 months” (35.94%) and “<6months” (13.07%) as shown in Table 2 ($p < 0.001$). Furthermore, the prevalence of FP was higher in cats of “6-24 months” while accidental injuries, dermatitis, laminitis, and myiasis were higher in cats of “>24 months” ($p \leq 0.05$). The prevalence of clinical cases

of cats was similar between male and female (43.79% vs 56.20%) as shown in Table 3 ($p = 0.125$). Furthermore, the prevalence of FP was higher in female compared to male cats ($p \leq 0.05$). In contrast, previous study reported that clinical cases were more prevalent in male cats (58.65%), and in cats less than 6 months of age (51.13%) (Yadav *et al.*, 2017). The findings of this study further corroborate the significant influence of age and sex on the occurrence of individual clinical cases of pet cats especially FP.

Table 2. Association of clinical diseases of dogs between disease types and age.

Name of the clinical cases	Age			Chi square <i>p</i> value
	<6 months	6-24 months	>24 months	
	No. (%)	No. (%)	No. (%)	
Feline Panleukopenia	7 (4.57)	21 (13.72)	18 (11.76)	0.02*
Accidental	4 (2.61)	7 (4.57)	16 (10.45)	0.01*
Dermatitis	1 (0.65)	6 (3.92)	16 (10.45)	<0.001*
Laminitis	1 (0.65)	7 (4.57)	10 (6.53)	0.03*
Parasitic	4 (2.61)	4 (2.61)	5 (3.26)	0.92
Felin Calicivirus	3 (1.96)	5 (3.26)	2 (1.30)	0.49
Myiasis	0 (0)	3 (1.96)	6 (3.92)	0.049*
Urolithiasis	0 (0)	2 (1.30)	5 (3.26)	0.066
Total	20 (13.07)	55 (35.94)	78 (50.98)	<0.001*

*Significant $p \leq 0.05$

Table 3. Association of clinical diseases of dogs between disease types and sex.

Name of the clinical cases	Sex		Chi square <i>p</i> value
	Male	Female	
	No. (%)	No. (%)	
Feline Panleukopenia	16 (10.45)	30 (19.60)	0.03*
Accidental	9 (5.88)	18 (11.76)	0.083
Dermatitis	16 (10.45)	7 (4.57)	0.060
Laminitis	7 (4.57)	11 (7.18)	0.34
Parasitic	5 (3.26)	8 (5.22)	0.40
Felin Calicivirus	3 (1.96)	7 (4.57)	0.20
Myiasis	4 (2.61)	5 (3.26)	0.73
Urolithiasis	7 (4.57)	-	ND
Total	67 (43.79)	86 (56.20)	0.125

*Significant $p \leq 0.05$, ND: Not done

Management practices of pet cats

In this survey, various management practices were studied like vaccination and deworming status of cats. In this survey, out of 153 cats, 77 (50.33%) cats were vaccinated and 76 (49.67%) were unvaccinated (Table 4) ($p = 0.936$). Among breeds, the percentage of non-vaccinated cats was higher in local breeds while vaccination was more practiced in Parsian and Exotic breeds compared to others ($p < 0.05$). Deworming is less practice in cat as compared to vaccination. In the present study, approximately 44% cats were dewormed regularly as shown in Fig. 2 ($p = 0.125$). Vaccination and deworming are the key to prevent viral and parasitic diseases, respectively (Bergmann *et al.*, 2018; Roussel *et al.*, 2019). Though the prevalence of vaccination and deworming were not differed significantly compared to their counter parts, non-vaccinated and non-dewormed cats were remaining in danger.

Table 4. Vaccination status of cat according to breed.

Breed	Vaccine status		Chi square p value
	Vaccinated	Non-vaccinated	
	No. (%)	No. (%)	
Local	13 (8.50)	46 (30.07)	<0.001*
Exotic	14 (9.15)	5 (3.27)	0.038
Persian	32 (20.92)	8 (5.23)	<0.001*
Cross-breed	8 (5.23)	4 (2.61)	0.25
Non- descriptive	10 (6.54)	13 (8.50)	0.53
Total	77 (50.33)	76(49.67)	0.936

*Significant $p \leq 0.05$

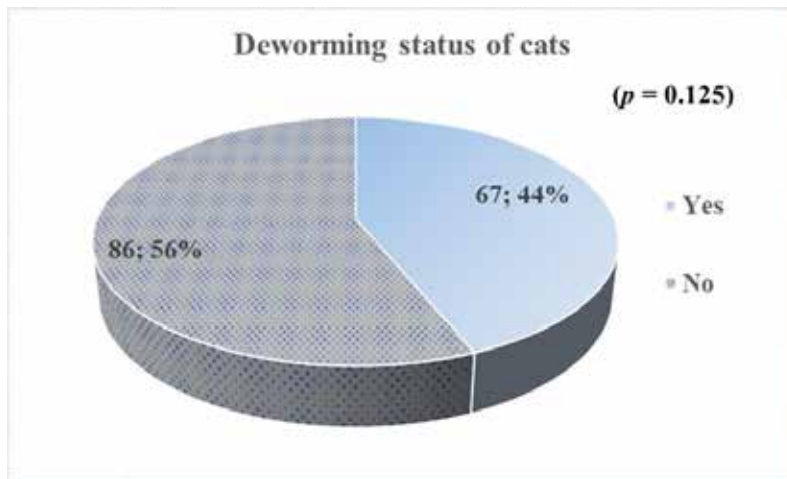


Fig. 2. Deworming status of cats of this study.

CONCLUSION

In conclusion, feline panleukopenia was the most prevalent clinical case in pet cats at CVH, Bangladesh. Breed, age, and sex influenced the prevalence of FP. Around half of the cat's owners were unaware of the vaccination and deworming of their cats. Therefore, proper vaccination, deworming, and hygienic management of pet cats are recommended to reduce clinical illness.

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