PREVALENCE OF CLINICAL DISEASES FOUND AT CENTRAL VETERINARY HOSPITAL (CVH), DHAKA

ABSTRACT

A period of five months cross sectional retrospective study was conducted at Central Veterinary Hospital (CVH), Dhaka to estimate the prevalence of clinical conditions in pet animals and birds from 15 March to 21 August 2021. A total of 450 clinical cases, 90 (20%) dogs, 204 (45.33%) cats, goats 78 (17.33%), rabbits 13 (2.89%), calf 5 (1.11%), sheep 2 (0.44%), horse 2 (0.44%) and birds 56 (12.45%) were examined with different clinical conditions. Prevalence of clinical conditions was analyzed on the basis of age, sex and breed. It was revealed that highest number of dogs 66 (73.33%), cats 126 (61.76%) and goats 56 (71.8%) occupied in medicinal cases followed by surgical cases 13 (14.44%) in dogs, 41 (20.11%) in cats and 6 (7.69%) goats. Vaccination, deworming and health checkup was observed 11 (12.22%) in dogs, 37 (18.14%) in cats and 12 (15.38%) goats. Among of the medicinal cases parasitic diseases occupied highest prevalence 18 (20%) in dogs and 25 (12.25%) in cats. Viral disease (PPR) prevalence was highest in goats 15 (19.23%).Male dogs, cats and goats was higher in number than female. People prefer to rear male animals. Disease prevalence was higher in local breeds in both dogs and cats. In dogs, adult animals of 7-24 months were more diseased. But in cats, young aged 0-6 months were more susceptible to different clinical diseases and conditions.

Key words: Prevalence, Animals, Diseases, Capital city.

INTRODUCTION

Central Veterinary Hospital (CVH) is the only government veterinary Hospital in Dhaka. It provides all types of veterinary services to all types of animals and birds. Mostly pet animals like dogs and cats are reared by people of Dhaka city. Most of the patients are dogs and cats in CVH. Besides many clinical cases in goats come which are reared by the people of old Dhaka in their rooftop on a small scale. Various infectious and noninfectious diseases are frequently occurring in goats which considered as a great threat to these animals' survival in Dhaka. A few cases come of calf, rabbit, pigeon, macaw, hen, cock, mayna with clinical conditions.

Modern society is becoming more urbanized now a days. The tradition of keeping animal as pet is increasing day by day or even exotic creatures. Pets have become an integral part of the family and often considered to be extended family. The pet animals are kept by a significant percentage of people all over Dhaka city irrespective of their social status. Dogs and cats play an important role in the societies of Dhaka in Bangladesh. In many households, contributing to the physical, social and mental development of children and the well-being of their owners, they act as important companions (Dohoo et al., 1998; Robertson et al., 2000). Dogs and cats have significant benefits to our society like companionship, play with children, guard the house and from any adverse condition alert the owner, used as gift to special one and economic purpose (Parvez et al., 2014). Pet keeping is usually connected with certain responsibilities like housing, control of disease and responsible for pet ownership with consequences for public health when mistreated (William et al., 2002). Pet animals make up an important reservoir of zoonotic diseases as they share the same environment with humans (Kornblatt and Schantz 1980). Household pets have been found to play a direct role in transmitting zoonosis (Dada et al., 1979; Kornblatt and Schantz 1980). Animal bites and allergy from pets are the commonest health

hazards, however a diverse range of infections, including parasitic, bacterial, fungal and viral diseases are transmitted to humans from domestic pets (Plant et al., 1996; Geffray 1999).

Rearing of pet animals are becoming popular in urban cities of Bangladesh day by day. However, the pet owners do not have sufficient knowledge about the diseases of pet animals and about the zoonoses. Pet animals suffer from many diseases but pet owners are not aware of the diseases of pet animals, their medication, vaccination etc.

The prevalence of infectious diseases and conditions of domestic animals and birds has already been performed in various regions of Bangladesh (Tarafder and Samad, 2010; Mahmud et al., 2014). But very few studies have been reported on the prevalence of clinical diseases and conditions in pet animals ((Parvez et al., 2014). Hossain and Kayesh (2014) reported the overall prevalence of clinical diseases at Dhaka city area in dog, cat and rabbit as 2.39%, 3.72% and6.66%, respectively. It has been reported that ectoparasitic infestation (tick infestation 11.88%, flea infestation 9.84% and mange 3.76%) cases were highest among the all reported clinical diseases in pet dog (Tarafder and Samad, 2010). So, this study was undertaken with the following objective: To determine the overall prevalence of clinical diseases and conditions, especially pet animals (dogs and cats), goats, pet birds and other animals at CVH.

MATERIALS and METHODS

Research area and period

The study was conducted at Central Veterinary Hospital (CVH), Dhaka during the period of 15 March to 21 August 2021. A total of 450 cases of pet animals (dog, cat, goat, rabbit, calf, sheep, chicken, macaw, parrot, love birds, mayna) were admitted in hospital. The clinical examination of diseased animal was performed on basis of owner's complaints, anamnesis, clinical examinations, physical examinations and laboratory diagnosis of patients.

Study Design

An analytical study was carried out to investigate the prevalence of clinical diseases found at Central Veterinary Hospital (CVH). A pre-structured questionnaire was prepared and used to collect needed information about pet animals directly from the owner of the patients while they came to the hospital. The questionnaire contained all the important information which was very much useful to do the research work.

Data collection

Data was collected from the owners of pet animals by face-to-face interaction with the owners. Questioning the owners and observing the animals closely made it easy to collect the correct data about the animal. Data was collected about species of the animal, breed, age, sex, vaccination, deworming, anamnesis etc.

Owner's complaints

Complaints of owner of patients were considered and marked during animal examination.

Anamnesis

The history of clinical diseases and conditions of patients were collected from owners to identify the predisposing factors of diseases.

Clinical examination of patient

a) Distant Inspection: Firstly, the general attitude of the patient (alertness/breathing/ dullness/ depression) was carefully inspected. In addition, posture and gait (normal or defective) were examined according to the conditions of pet animals.

b) Close Inspection: Following distant inspection, the patient was closely examined by visual examination. Parting of hair/fleece, light palpation, percussion and close direct inspection were performed to detect hair, coat and skin abnormalities. Skin lesions, nature of lesions (foul odorous discharge, crusts, scale and dandruff), location and distribution of those lesions were also studied. In addition, external parasites (tick, lice, flea, flies and larvae of flies) were individually identified during examination.

Physical examination

Wounds were identified by inspection and further examined for more precise diagnosis to categorize the nature of the wound whether it might be septic, lacerated, incised, punctured, perforating, abrasions, avulsion or hematoma. Needle puncture was also performed if required. Temperature, pulse, respiratory rates were taken through clinical method. General anesthesia was also used for restraining of the pet animals. In case of fracture, extension and flexion method were performed for pet animals.

Laboratory diagnosis

X-Ray or imaging was performed to diagnose the musculo-skeletal and chest diseases and fracture. X-Ray was also used to diagnose pregnancy in some cases. Ultrasonography was used to diagnose pregnancy and related diseases.

Statistical analysis

The data collected from each patient were entered into MS excel (Microsoft office excel-2016, USA). Data management and descriptive analysis was done in Excel.

RESULTS and DISCUSSION

A total of 450 cases of different clinical conditions were encountered during the study period (Table 1). This study revealed the most prevalent dog diseases in Central Veterinary Hospital, Dhaka, Bangladesh as diseases of digestive system, respiratory system, bacterial disease, viral disease, nutritional, parasitic and others. The current study was designed to fill a critical data gap relating to disorder prevalence information that has been identified as a constraint to improving dog welfare (Bateson, 2010; Rooney et al., 2008; APGAW, 2009). Dogs and cats were 20% and 45.33% respectively in the study.

Table 1: Percentage of animals and birds species presented at CVH

Species of animals	No of animal	Percentage (%)	Avian species	No of birds	Percentage (%)
Dog	90	20	Poultry	18	4
Cat	204	45.33	Pigeon	22	4.89
Goat	78	17.33	Parrot	3	0.67

Rabbit	13	2.89	Macaw	5	1.11
Calf	5	1.11	Love birds	3	0.67
Horse	2	0.44	Mayna	5	1.11
Sheep	2	0.44			
Total	394	87.54	Total	56	12.45

Overall prevalence of the different diseases in dogs showed highest prevalence of parasitic infestation (20%), followed by nutritional diseases (8.89%), viral disease (7.78%), skin disease (7.78%), bacterial disease (6.67%), digestive disorder (5.56%) and others (Table 2). Overall prevalence of the different diseases in cats showed highest prevalence of parasitic disease (12.25%), followed by viral disease (9.32%), skin disease (6.86%), bacterial disease (6.37%), nutritional disease (5.88%), pneumonia (5.39%) and others (Table 2). Additionally, we found highest percentage of medicinal cases (dogs 73.33% and cats 61.76%) in compare to surgical cases (dogs 14.44% and cats 20.11%) and vaccination, deworming and health checkup (dogs 12.22% and cats 18.14%) (Table 2).

Table 2. Prevalence of clinical conditions in dogs and cats admitted to Central Veterinary Hospital (CVH), Dhaka

Parameters of clinical conditions	**No of dogs**	**Prevalence (%)**	**No of cats**	**Prevalence (%)**
Digestive disorder	5	5.56	6	2.94
Loss of appetite	3	3.33	9	4.41
Digestive systems	8	8.89	15	7.35
Upper respiratory tract infection	3	3.33	7	3.43
Pneumonia	4	4.44	11	5.39
Respiratory system	7	7.78	18	8.82

Ectoparasite	13	14.44	18	8.82
Endoparasite	5	5.56	7	3.43
Parasitic disease	18	20	25	12.25
Infectious disease	13	14.45	32	15.69
Viral disease	7	7.78	19	9.32
Bacterial disease	6	6.67	13	6.37
Nutritional disease	8	8.89	12	5.88
Eye disorders	3	3.33	8	3.92
Ear infections	2	2.22	2	0.98
Skin diseases	7	7.78	14	6.86
Special sense organ	12	13.33	24	11.76
Total medical cases	66	73.33	126	61.76
Surgical cases	13	14.44	41	20.11
Vaccination, deworming and health check-up	11	12.22	37	18.14
Total	**90**	**100**	**204**	**100**

Among medicinal cases, the most frequently encountered disease was parasitic diseases both in dogs (20%) and cats (12.25%). Parvez et al. (2014) reported more parasitic cases in dogs (51.54%) and cats (54%). Sarker et al. (2015) reported that prevalence of parasitic diseases were 14.77% in dogs and 13.33% in cats. The occurrence of clinical diseases of digestive system was 8.89% in dogs and 7.35% in cats. We observed relatively lower prevalence of digestive disorder in dogs (8.89%) which was similar with the results of Chaudhari and Atsanda, (2002) who reported only 6.73%. Parvez et al. (2014) recorded 12.64% digestive disorder in dogs. Prevalence of loss of appetite 3.33% in dogs was similar with the result recorded by Chaudhari and Atsanda (2002) where it was only 2.69%. However, Sarkeret al. (2015) reported relatively higher level of loss of appetite (5.11%) in dogs. The prevalence of skin diseases were 7.78% in dog and 6.86% in cats. Similar finding in dogs was also reported by Tarafder and Samad, (2010) but other authors reported lower prevalence of skin disease (Freeman et al., 2006; Chaudhari and Atsanda 2002) in dogs. The prevalence of disease in eyes and ear in dog and cat were 5.55%,

4.9%, respectively and the result were agreed with Freeman et al., (2006) and Tarafder and Samad (2010). The prevalence of bacterial diseases was 6.67% in dogs and 6.37% in cats. The prevalence of viral diseases was 7.78% in dogs and 9.32% in cats. Our results were not in agreement with the result of Tarafder and Samad (2010) who reported lower prevalence (0.08%) indog and 1.96% in cat). This variation of the result might be due to different geographical locations and periods of study. The prevalence of nutritional diseases of this study were 8.89% and 5.88% in dog and cat, respectively which agreed with the results of Tarafder and Samad (2010) who reported higher prevalence of nutritional diseases (3.13%) in pet dog. The prevalence of diseases of the respiratory system was 7.78% in dog and 8.82% in cat. Out results were similar with the findings of other authors who observed relatively higher prevalence in both dogs and cats (Tarafder and Samad, 2010; Chaudhari and Atsanda, 2002; Parvez et al., 2014). Respiratory tract infections can be caused by viruses, bacteria and less often by fungi and sometimes from faulty medication. Prevalence of upper respiratory tract infections in dog and cat was 3.33% and 3.43%, respectively. Clinical conditions of dogs and cats are shown in Table 2.

Among 90 dogs 48 (53.33%) were male and 42(46.67%) were female (Fig. 1). So no of male dogs is higher than female dogs. The result is contrary with the result of (Soumitra et al., 2016). According to her result, female dogs were higher in number.In case of cats, there were 110 (58%) male cats and 78 (42%) female cats (Fig. 1). This result is similar with result of (Parvez et al., 2014). According to his result, 60% were male cats and 40% were female cats.

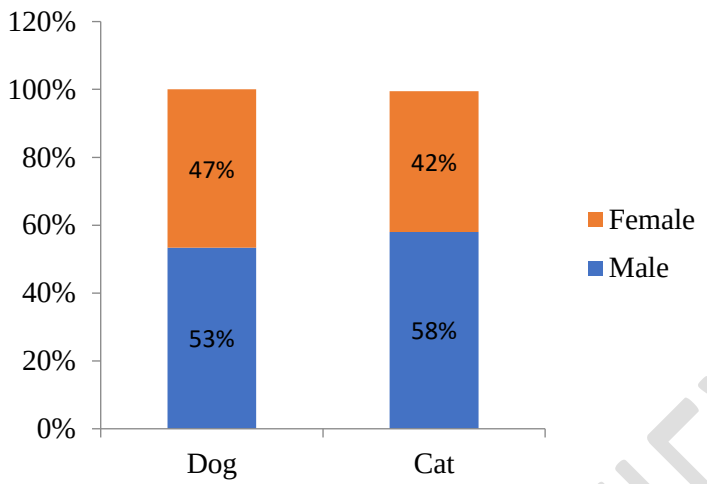

Figure 1: Percentage of male and female dogs and cats presented at CVH

Dogs and cats were divided into 3 age groups according to their age. These groups are 0-6 months, 6-24 months and above 24 months. Disease prevalence according to age are given in Table 3.

Table 3 : Disease prevalence according to age in dogs and cats

Age groups	**No of dogs**	**Prevalence (%)**	**No of cats**	**Prevalence (%)**
0 -6 months	30	33.33	87	42.65
7-24 months	41	45.56	68	33.33
>24 months	19	21.11	49	24.02
Total	90	100	204	100

In dog breeds, prevalence of diseases is higher in local breeds 47(52.22%), followed by German Shepherd (31.11%), Labrador (7.78%), Lhasa (6.67%) and Doberman (2.22%). Prevalence of clinical disease conditions in dogs according to breeds are shown in Figure 2. In cats, disease

prevalence is also higher in local breeds 101(49.5%) than Persian breeds 72(35.29%) and mixed breed 31(15.21%) (Table 4). May be the lack of health care in care in local breeds both in dogs and cats are the reason of highest disease prevalence. In both dog and cat, disease prevalence was higher in local breed, 52.22% & 49.5% respectively. Disease prevalence was lower in Doberman breed (2.22%) in dog and mixed breed (15.21%) (Table 4).

Table 4 : Disease prevalence according to breeds in dogs and cats

Breeds	**No of dogs**	**Prevalence (%)**	**Breeds**	**No of cats**	**Prevalence (%)**
Local	47	52.22	Local	101	49.5
German Shepard	28	31.11	Persian	72	35.29
Labrador	7	7.78	Mixed	31	15.21
Lhasa	6	6.67			
Doberman	2	2.22			
Total	90	100		204	100

The highest prevalence of disease was observed in PPR (19.23%). Prevalence of other diseases like pneumonia, tetanus, mastitis, parasitic disease, enteritis, dermatitis, bloat, urolithiasis and repeat breeding were 7,69%, 2.56%, 5.13%, 16.67%, 2.56%, 3.85%, 6.41%, 3.85% and 3.85% respectively (Table 5). Goat is easily reared, prolific in climate especially in arid zones (Banerjee, 2004). The goat suffers with various diseases, which are caused by viruses, bacteria, parasites and other non-infectious agents (Taylor, 1984).

Among the viral diseases of goat, the present study showed 19.23% prevalence of PPR in goat which is concurrent with other investigations (Poddar et al., 2018) who recorded 13.74%

prevalence of PPR at Upazila Veterinary Hospital, Pirojpur, Bangladesh. But in North east India, the prevalence of PPR was detected as 45.2%. This variation may be due to different geographical location and management system (Balamurugan et al., 2014). Among the bacterial diseases, respiratory infections, or pneumonia, are a common and serious disease in goats. In our study, among the bacterial diseases, pneumonia was recorded to prevalent in 7.69% goats.

Table 5. Prevalence of diseases in goats at CVH

Category	**Diseases**	**NO of goats**	**Prevalence**
Viral	PPR	15	19.23
Bacterial	Pneumonia	6	7.69
	Tetanus	2	2.56
	Mastitis	4	5.13
Parasitic		13	16.67
Non-specific	Enteritis	2	2.56
	Dermatitis	3	3.85
	Bloat	5	6.41
	Urolithiasis	3	3.85
	Repeat breeding	3	3.85
1. Medical cases		56	71.8
2. Surgical cases		6	7.69
3. Managemental cases		4	5.13
4. Vaccination, Deworming & health check up		12	15.38
Total		**78**	**100**

Findings of other studies showed similar prevalence (9.6% and 8.28%) of pneumonia in goats in Magura and Sylhet respectively (Karim et al., 2014; Lucky et al., 2016). Prevalence of mastitis

was 5.13%. These findings contrast with the report of other studies who reported lower prevalence 1.6% mastitis in goat (Karim et al., 2014).The present study showed that the prevalence of parasitic infestation was recorded to be second highest with 16.67%.The present study recorded 6.41% prevalence of bloat which supports the findings of earlier studies (Rahman et al., 2012; Karim et al., 2014). Prevalence of Urolithiasis was 3.85%. Other study reported similar prevalence of urolithiasis in goat (44.4%) in Magura, Bangladesh (Karim et al., 2014).

CONCLUSIONS

The study gives a general overview of the current state and the percentage of disease prevalence in pet animals, small ruminants particularly goats, pet birds and other animals in Bangladesh's capital city. Researchers may find this to be extremely valuable for their next research. Researchers and veterinarians alike should be concerned about these recently stated the prevalence of diseases at capital city. We discovered during our study that the majority of pet owners knew very little about pet care and were also unfamiliar with these diseases. It is essential to educate pet owners about proper housing, feeding, and preventing animal contamination in order to promote good pet care. But more research is needed, so more studies are needed.

REFERENCES

1. Chaudhari AWSUR, Atsanda NN (2002). Prevalence of some disease of dogs and cats atthe state government veterinary clinic in Maidugury (Nigeria). Pak Vet J, 22, 2.

2. Dada BJO, Adegboye DS, Mohammaed ANA (1979). A survey of gastrointestinal parasites of stray dogs in Zaria Nigeria. Vet Rec, 104, 145-146.

3. Dohoo IR, McDonell WN, Rhodes CS, Elazhary YL (1998). Veterinary research and human health. Can Vet J, 39, 549-556.

4. Edosomwan EU, Chinweuba CR (2012). A survey on helminth parasites of dogs in Benin city, Edo State, Nigeria. J Vet Med Anim Health, 4,4, 56– 60.

5. Freeman LM, Abood SK, Fascetti AJ, Fleeman LM, Michel KE, Laflamme DP, Bauer C, Kemp BL, Van Doren JR, Willoughby KN (2006). Prevalence among dogs and cats in the United States and Australia and proportions of dogs and cats that receive therapeutic diets or dietary supplements. J Am Vet Med Assoc, 229, 4,

6. Geffray L (1999). Infections associated with pets. Rev Med Interne, 20, 888 -901.

7. Kornblatt AN, Schantz PM (1980). Veterinary and public health considerations in canine roundworm control. A survey of practicing veterinarians. J Am Vet Med Assoc, 195, 1212-1215.

8.Parvez MA, Md. Prodhan MAM, Das BC, Khatun R (2014). Prevalence of clinical conditions in dogs and cats at teaching veterinary hospital (TVH) in Chittagong Veterinary and Animal Sciences University, Bangladesh. Res J Vet Prac, 2,6, 99-104.

9. Plant M, Zimmerman EM, Goldstein RA (1996). Health hazards to humans associated with domestic pets. Annu Rev Public Health, 17,221- 245.

10. Robertson ID, Irwin PJ, Lymberg AJ, Thompson RCA (2000). The role of companion animals in the emergence of parasitic disease. Int J Parasitol, 30,1369–1377.

11.Samad MA (2008). Animal Husbandry and Veterinary Science. Volume 2, LEP Pub. No. 11, BAU Campus, Mymensingh.

12. Subhagata DAS, Alim MA, Sikder S, Gupta AD, Masuduzzaman M (2012). Prevalence and Worm Load of Enteric Helminthiasis in Stray Dogs of Chittagong Metropolitan, Bangladesh. YYU Vet Fak. Derg, 23, 3, 141–145.

13. Tarafder M, Samad MA (2010). Prevalence of clinical diseases of pet dogs and risk perception of zoonotic infection by dog owners in Bangladesh. Bangladesh J Vet Med, 8,2, 163 – 174.

14.William A, Chaudharti SUR, Atsanda NN (2002). Prevalence of some diseases of dogs and cats at the State Government Veterinary Clinic in Maiduguri-Nigeria. Int J AgrBiol, 4, 568-569.

15. Soumitra S, Rahman MS, Minakshi N, Rahman MM, Sarker RR and Kabir SML (2016). Prevalence of canine parvovirus and canine influenza virus infection in dogs in Dhaka, Mymensingh, Feni and Chittagong districts of Bangladesh. Asian Journal of Medical Biology Research, 2:138-142.

16. APGAW (2009). A healthier future for pedigree dogs. London: The Associate Parliamentary Group for Animal Welfare.

17. Bateson P (2010). Independent inquiry into dog breeding. Cambridge: University of Cambridge.

18. Rooney N, D Sargan (2008). Pedigree dog breeding in the UK: a major welfare concern? Horsham, West Sussex: RSPCA.

19. Banergee, GC 2004. A text Book of Animal Husbandry oxford and IBH Publishing Co. Pvt. Ltd. New Delhi. 8th edition, pp: 933-961.

20.Balamurugan V, Das S, Raju DSN et al. Prevalence of peste des petits ruminants in goats in North-East India. Virus disease, 2014, 25(4): 488-492.

21.Poddar S, Dey T, Sultana J, Akter S, Alauddin M. Prevalence of Peste des Petits Ruminants in Goat at Upizalla Veterinary Hospital, PirojpurSadar, Bangladesh. Turk J Vet Res, 2018; 2 (1): 5-8.

22. Taylor WP. The distribution and epidemiology of peste des petits ruminants in the sultanate of oman. Vet Microbiol, 1984; 22:341–352.

23.Karim MR, Parvin MS, Hossain MZ, Islam MT, Hussain MT. A report on clinical prevalence of diseases and disorders in cattle and goats at the upazilla veterinary hospital, Mohammadpur, Magura. Bangladesh J Vet Med, 2014; 12:47-53.

24.Lucky NS, Hossain MK, Roy AC, Haque MM, Uddin AHMM, Howlader MMR. A longitudinal study on clinical diseases and disorders of cattle and goats in Sylhet, Bangladesh. J AdvVet Ani Res, 2016; 3(1):24-37.

25.Rahman MA, Islam MA, Rahman MA, Talukder AK, Parvin MS, Islam MT. Clinical diseases of ruminants recorded at Patuakhali Science andTechnology University Veterinary Clinic. Bangladesh J Vet Med, 2012; 10:63-73.