

Case Report



Comparative Hospital Prevalence Study of Different Diseases of Dog at Dhaka, Chittagong and Sylhet District of Bangladesh

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Abstract | The study was conducted to estimate the prevalence of clinical conditions in dogs admitted at Central Veterinary Hospital (CVH), SAQ Teaching Veterinary Hospital (CVASU), Chittagong, and District Veterinary Hospital (DVH), Sylhet during the period from 22 September to 18 October 2018 at CVH, 20 October to 18 November 2018 at CVASU and 26 February to 21 March 2019 at DVH. The prevalence was analyzed on the basis of location, age, breed and sex. Among the clinical cases infectious diseases occupied the highest prevalence in CVASU (62.85%), CVH (61.53%) and DVH (61.53%). Prevalence of difference in clinical diseases was not significant ($P>0.05$). In case of parasitic diseases, the highest prevalence was observed in DVH (34.61%) and lowest in CVASU (28.57%). The prevalence of nutritional diseases was lower than in other clinical conditions. The highest prevalence of diseases according to age, breed and sex was observed in younger (<1 year), Local breed and male respectively. Keeping in view these findings, an appropriate control strategy could be designed and applied, which helps to prevent these disease conditions in study area.

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Introduction

Having pet animals brings a lot of benefits such as physiological support, companionship and even good health practices. Even in many countries' pets have become substitutes for childbearing and childcare. In many households, pet animals contribute to physical, social and emotional well-being of their owners, particularly children (Dohoo et al., 1998; Robertson et al., 2000). Dog and cat have significant benefits to our society like companionship, play with children, guard the house and alerts the owner from any adverse condition, gift to special ones and economic purpose (Parvej et al., 2014). Dogs are not only serving as companion but also act as workers (Singh et al.,

2014). They have proven to be an invaluable member of family with different roles including guide dogs for blind person, provide assistance to the disables, sniffers dog used by police and customs and farm dogs used as shepherd. Pet keeping is usually associated with certain responsibilities like housing, disease management and responsible for pet ownership with negative consequences for public health neglected (William et al., 2002). Dogs may be the most frequent household pet around the world (Chomel BB, 1992). Close bond between dogs and humans remain a major threat to public health, with dogs harboring a bewildering number of infective disease causative agents transmissible to man and other domestic animals (Robertson et al., 2000; Molyneux, 2004).

Table 1: Location wise prevalence of diseases of dogs.

Location	Infectious disease Prevalence % (95% CI)	Parasitic disease Prevalence % (95% CI)	Nutritional deficiency disease Prevalence % (95% CI)
CVH	61.53(48.89-74.16)	29.82(17.94-41.69)	8.77(1.38-16.15)
CVASU	62.85(46.84-78.85)	28.57(13.60-43.53)	8.57(0.70-17.84)
DVH	61.53(42.82-80.23)	34.61(16.32-52.89)	3.84(2.26-19.06)
P-value	0.98	0.86	0.71

Although dogs and man have lived together generally to their mutual benefit for thousands of years, since dogs share the same environment with humans, they constitute an important reservoir of zoonotic diseases (Kornblatt and Schantz, 1980). Household pets have been found to play a direct role in transmitting zoonosis (Dada et al., 1979). Several species of dog (e.g. German Shepherd, Doberman, Labrador etc. have been importing from abroad and are selling at Kataban Market at Dhaka city of Bangladesh. Any interested person can bring them from a market situated Katabon, Gulistan, Dhaka; Riaz Uddin Bazar, Chittagong and Zindabazar, Sylhet. Therefore, rearing of pet animals is becoming popular in urban cities of Bangladesh day by day. However, the pet owners do not have sufficient knowledge about the diseases, but pet owners are not aware of the diseases of pet animals, their medication, vaccination etc. However, there had very few studies on dog diseases in Bangladesh. Therefore, the present studies were designed to investigate the prevalence of diseases and influence of age, breed and sex on diseases of pet dogs came for treatment at Central Veterinary Hospital (CVH), Dhaka; S.A Quaderi Teaching Veterinary Hospital, Chittagong Veterinary and Animal Science University (CVASU) and District Veterinary Hospital (DVH), Sylhet.

Objectives

To know the hospital prevalence of dog diseases according to age, sex and breed.

Materials and Methods

Study area and data collection

This study was performed from 22 September to 18 October 2018 at CVH, 20 October to 18 November 2018 at CVASU and 26 February to 21 March 2019 at DVH.

The study was conducted at Central Veterinary Hospital (CVH), Dhaka; S.A. Quaderi Teaching

Veterinary Hospital (CVASU), and District Veterinary Hospital (DVH), Sylhet.

Statistical analysis

All the data obtained from hospitals, were organized, structure and analyzed with the help of Microsoft Corporation, 2007 windows package. The obtained information was loaded and stored on the excel spread sheet. The collected data are analysis through tabular and percentage. In case of infectious, parasitic and nutritional diseases, the Chi-square value expressed as p-value in different location. The p-value is less than 0.05 is considered significant.

Results and Discussion

The different clinical and laboratory methods were used to study the prevalence of diseases of dogs in CVH, CVASU and DVH Sylhet. Table 1 details the location wise prevalence of diseases in dogs. Table 2 details the age wise disease prevalence of dog. Table 3 shows breed specific risks of diseases of dogs, whereas Table 4, details the sex-wise prevalence of diseases of dog.

Table 2: Age wise prevalence (%) of diseases of dogs.

Location	Younger (<1 year) P (95% CI)	Older (>1 year) P (95% CI)
CVH	50.87(37.89-63.84)	49.12(36.14-62.09)
CVASU	62.85(46.84-78.85)	37.14(21.13-53.14)
DVH	69.23(51.48-86.97)	30.76(13.02-48.49)

Table 1, the location wise highest prevalence of infectious diseases observed in CVASU (62.85%) than CVH (61.53%) and DVH (61.53%). The highest prevalence of parasitic diseases observed in DVH (34.61%) than CVH (29.82%) and CVASU (28.57%). In case of nutritional deficiency diseases, the highest prevalence observed in CVH (8.77%) than CVASU (8.57%) and DVH (3.84%). In case of infectious diseases, parasitic disease and nutritional deficiency diseases the p-value is 0.98, 0.86 and 0.71 respectively. So, there is no significance difference

Table 3: Breed-wise prevalence of diseases of dogs.

Location	BulldogP (95% CI)	Cross P (95% CI)	DobermanP (95% CI)	German Shep-herdP (95% CI)	Golden RetrieverP (95% CI)	LabradorP (95% CI)	LocalP (95% CI)
CVH	8.77(1.420-16.11)	21.05(10.46-31.63)	14.03(5.01-23.04)	21.05(10.46-31.6)	-	14.03(5.01-23.0)	21.05(10.46-31.63)
CVASU	-	25.71(11.23-40.18)	14.28(2.68-25.87)	28.57(13.60-43.53)	-	11.42(0.88-21.95)	20(6.74-33.25)
DVH	-	23.07(7.35-40.04)	11.53(0.74-23.80)	15.38(1.51-29.24)	11.53(0.74-23.80)	7.69(2.55-17.93)	30.76(13.02-48.49)

Table 2, the highest disease prevalence observed in younger (<1 year) at DVH (69.23%) than CVH (50.87%) and CVASU (62.85%). The highest disease prevalence observed in older (>1 year) at CVH (49.12%).

Table 3, the highest disease prevalence observed in Local (30.76%) at DVH, German shepherd (28.57%) at CVASU and Cross (21.05%), German shepherd (21.05%), Local (21.05%) at CVH.

Table 4, the highest prevalence of diseases observed in the male (69.23%) at DVH. The disease prevalence of dog was higher in the male in comparison to female.

Table 4: Sex wise disease prevalence (%) of dogs.

Location	Male P (95% CI)	FemaleP (95% CI)
CVH	68.42(56.35-80.48)	31.57(19.50-43.63)
CVASU	62.85(46.84-78.85)	37.14(21.13-53.14)
DVH	69.23(51.48-86.97)	30.76(13.02-48.49)

This study reported the most prevalent dog diseases in CVH, CVASU and DVH Sylhet of Bangladesh as bacterial diseases, viral diseases, parasitic diseases, fungal diseases and nutritional deficiency diseases.

Infectious diseases

The prevalence of infectious diseases almost similar in CVH (61.53%), CVASU (62.85%) and DVH (61.53%) (Table 1). The result of infectious disease prevalence is slightly similar to the earlier work made in Dhaka city of Bangladesh (Runa et al., 2016)

Parasitic diseases

The most frequently encountered disease was parasitic infestation among the three locations CVH (29.82%), CVASU (28.57%) and DVH (34.61%). Overall prevalence of the diseases in dogs showed highest prevalence of parasitic infestation, followed by infectious and nutritional deficiency diseases

(Table 1). Parvez et al. (2014) reported more parasitic cases in dogs (51.54%). This results supported the earlier works made in different areas of Bangladesh (Rahman, 1988) and elsewhere (Hazlett et al., 1983; William et al., 2002; Freeman et al., 2006; Meler et al., 2008). In this study the lowest prevalence recorded in CVASU (28.57%) and the highest in DVH (34.61%). The highest disease prevalence was found may be due to geographical location, lack of awareness about immunization and deworming.

Nutritional deficiency diseases

In case of prevalence of nutritional deficiency diseases, the highest prevalence was observed in CVH (8.77%) than other places (Table 1). The prevalence of nutritional deficiency diseases is lower than infectious diseases and parasitic infestation.

Age

The age wise highest prevalence of diseases in dog was observed in the younger below 12 months (<1 year) than older above 12 months (>1 year) (Table 2). Soumitra et al. (2016) reported that the highest prevalence of dog diseases is higher in more than 18 months of age. Here, the present study dissimilar to this literature. These results also support the earlier works done in Bangladesh (Rahman, 1988, Tarafder and Samad, 2010).

Breed

The highest prevalence of diseases in dog was found in local breed (30.67%) at DVH, German shepherd (28.57%) at CVASU and Cross breed (21.05%) at CVH followed by Doberman, Labrador, Bulldog, Golden Retriever (Table 3) which was supported by Mahmud et al. (2014).

Sex

The sex-wise highest prevalence of diseases observed in the male (69.23%) at DVH (Table 4). The disease prevalence of dog was higher in the male in

comparison to the female. This is due to owners are mainly reared male dog than female.

Conclusions and Recommendations

This study revealed that hospital prevalence (%) of dog diseases in these areas was so high and all identified diseases have potential public health significance. Prevalence of parasitic infestation in dog was high than other diseases. It was increased rapidly and arises the threatening condition in those study areas. The puppies' dogs are mostly susceptible to diseases than an adult due to poor immunization. For minimizing the risk of parasitic diseases, pet owners should have proper knowledge about the causative agent that spreads the diseases. Bacterial and viral diseases can be controlled by maintaining regular vaccination. Parasitic infestation in a dog can be controlled by deworming and destruction of the intermediate host. For the prevention and control of the disease's government should take proper step.

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Authors Contributions

It is clearly stated that all author has contributed significantly to the study.

Conflict of Interest

The authors declare that there is no conflict of interest exists

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