

*Research article*

## Food, nutrition and health status of the pet animals in Dhaka and Chattogram city of Bangladesh

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### ARTICLE INFO

Article history:  
Received: 13/09/2020  
Accepted: 30/12/2020

#### Keywords:

Cat, deworming, dog, health, nutrition, pet food, vaccination

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### ABSTRACT

The study aimed to investigate the socio-economic status of the pet owners and the traditional feeding, immunization and health practices of the pet animals in Bangladesh. During, August 2019 to January 2020, 100 pet owners were face to face interviewed who came to the Central Veterinary Hospital, Teaching and Training Pet Hospital and Research Center and SAQ Teaching Veterinary Hospital, Chattogram Veterinary and Animal Sciences University. Results indicated that, the cats were reared mostly by the female while most of the dogs were reared by the male owners. The highest number of cat owners (50.0%) was student while majority of the government officers and businessmen used to rear dog. The local breed was the most dominant cat breed (60.5%) followed by the Persian breed (35.5%). Accordingly, the most dominant category of dog breed was local (50.0%) followed by the Spitz breed (29.2%). The cat population was mostly female (52.6%) unlike the majority was male in case of dog (66.7%). The 'Lara' and 'Drools' were the most frequently used commercial foods for the cats and dogs, respectively. The majority of the dogs and cats (were fed thrice a day. Trade name of the vaccines used and the incidence of skin diseases were different ( $p < 0.05$ ) whereas the pattern of deworming, vaccination, anthelmintics, digestive disorder and disease occurrence were similar ( $p > 0.05$ ) in cats and dogs. About 50.0% of the dogs and 48.7% of the cats were dewormed. Among the anthelmintics, 'Delentin' were used most frequently both in the cats and dogs. Vaccination was given in 57.9% and 62.5% in cats and dogs, respectively. It was concluded that the ownership of pet, occupation of the pet owners, sex, breed, nutrition, and immunization pattern of cats and dogs in Chattogram and Dhaka cities of Bangladesh are different.

**To cite this paper:** P. Bhowmik, H. K Mimi, A. Datta, K. Adhikary, N. Akter, K. Barua and M. E. Hossain. 2020. Food, nutrition and health status of the pet animals in Dhaka and Chattogram city of Bangladesh. *Bangladesh Journal of Veterinary and Animal Sciences*, 8(2):171-179.

## 1. INTRODUCTION

During the last four decades, the rapid growth of the urban population has taken place in Bangladesh (Helal and Hossain, 2013). From 1974 to 2011, the urbanization level, i.e., the percentage of the population living in urban areas has been increased from 8.78 to 27.66% percent

(Dewan and Yamaguchi, 2009). Dhaka is the most urbanized district (93%) with a population of 11.20 million next to Chattogram (55%). These rapid urbanizations provide people a varied range of opportunity to work on plenty of areas which assist them to increase their income (Rana, 2011). Since 1971, the real per capita

income of Bangladesh has increased more than 130 percent which helps to uplift the standard for living of people (Helal and Hossain, 2013). Nowadays, people are becoming gradually interested in the rearing of pet animal because urban society has mostly nuclear families where most of the family members are busy with their activities. To avoid loneliness, they frequently rear pet animals specially dog and cat (Kuzniar, 2006; Beck, 2011, 2014; Irvine, 2013; Bradshaw, 2017). People feel less lonely and possess psychologically better spending time with companion animals (Antonacopoulos and Pychyl, 2010). It was reported that the pet owners have greater satisfaction and happiness in life than the non-owners (Bao and Schreer, 2016).

Dog and cat rearing has some advantages such as companionship, playing, guarding with children and house, and economic purposes (Parvez et al., 2014). Proper pet keeping is further allied with some definite duties like housing, feeding, deworming, vaccination, grooming, exercise etc. Since pet dogs and human remain quite close and share the same environment, there exists higher possibility to transmit zoonotic diseases which are the major public health concern (Robertson and Irwin, 2000). Proper vaccination can protect the dogs and cats from these infectious diseases. Likewise, nutritionally balanced diet contributes in better health and supports protection in prevention of some chronic diseases (Case et al., 1995). Imbalanced diets and inappropriate food items may result obesity, chronic kidney diseases, deforming cervical spondylosis, vitamin deficiencies and skin disorders like dermatosis and dietary hypersensitivity (Case et al., 1995). Hence, the pet owners need to provide balanced diet either through homemade or commercially available readymade foods. Most of the pet owners have limited knowledge about pet food and nutrition (Michel, 2006; Michel et al., 2008; Schleicher et al., 2019). We therefore, aimed to investigate the socio-economic status of pet owners in Bangladesh in addition to the traditional feeding practices of dogs and cats which may assist the veterinarian to provide balanced dietary therapy for improving health and welfare of the pet animals of Bangladesh.

## 2. MATERIALS AND METHODS

### Preparation of questionnaire

An organized, structured questionnaire was prepared to collect data from pet owners of the two main urban cities, i.e., Dhaka and Chattogram. The questionnaire included both open and close ended questions related to age, gender, profession and educational qualification of the pet owner, and breed, gender, age, weight, food type, feeding practices, deworming, vaccination, disease control and health status of the pet animals.

### Pet owner's interview

Pet owners were interviewed face to face in the hospital premise using questionnaire. During, august 2019 to January 2020, pet owners were interviewed and data were collected from Central Veterinary Hospital, Teaching and Training Pet Hospital and Research Center and SAQ Teaching Veterinary Hospital, Chattogram Veterinary and Animal Sciences University. Total 100 pet owners' who came to the hospital either for treatment or regular health checkup purposes for their dogs and cats were responded in this study. In order to get in depth, one interviewer interviewed only two owners per day. It took around one hour to interview a respondent. A break of 30 minutes was taken between two subsequent interviews.

### Data analysis

After collection, data were compiled in MS excel professional 2016. Data were sorted and compiled for further analysis. Raw data were tested for the outliers and multicollinearity by inter quartile range test and variance inflation factors. Pearson's Chi-square ( $\chi^2$ ) test was performed to find the associations of age, gender, profession and educational qualification of the pet owner, and breed, gender, age, weight, food type, feeding practices, deworming, vaccination, disease control and health status of the pet animals by using Stata 14.1 SE (Stata Corp LP, College Station, Texas, USA). Statistical significance was accepted at  $p < 0.05$  for all the test statistics.

## 3. RESULTS

### Socio-economic status of the pet owner

Socio-economic rank of the pet owners is depicted in the Table 1. The cats were reared mostly by the female (63.2%) than the male (36.8%) owners. Contrastingly, most of the dogs were reared by the male owners (58.3%) than the female (41.7%). Similarly, the category of the

pet owners' age (p<0.01) and profession (p<0.05) was substantially different in case of Table 1. Socio-economic status of the pet owners in Bangladesh

Variable	Category	No. of pet owners % (n)			Pearson's $\chi^2$	Sig <sup>1</sup> .
		Cat	Dog	Total		
Gender	Female	63.2 (48)	41.7 (10)	58.0 (58)	3.46 (1)	NS
	Male	36.8 (28)	58.3 (14)	42.0 (42)		
Age	10-20	1.3 (1)	0.0 (0)	1.0 (1)	17.96 (5)	**
	>20-30	13.2 (10)	4.2 (1)	11.0 (11)		
	>30-40	54.0 (41)	25.0 (6)	47.0 (47)		
	>40-50	21.1(16)	41.7 (10)	26.0 (26)		
	>50-60	10.5 (8)	16.7 (4)	12.0 (12)		
	>60-70	0.0 (0)	12.5 (3)	3.0 (3)		
Profession	Student	50.0 (38)	16.7 (4)	42.0 (42)	14.73 (6)	*
	Businessman	19.7 (15)	29.2 (7)	22.0 (22)		
	Private job	9.2 (7)	8.2 (2)	9.0 (9)		
	Govt. officer	7.9 (6)	29.2 (7)	13.0 (13)		
	Doctor	6.6 (5)	12.5 (3)	8.0 (8)		
	Housewife	5.3 (4)	0.0 (0)	4.0 (4)		
	Army major	1.3 (1)	4.2 (1)	2.0 (2)		
Educational qualification	Graduate	71.1 (54)	75.0 (18)	72.0 (72)	1.77 (4)	NS
	Higher secondary	18.4 (14)	8.3 (2)	16.0 (16)		
	MBBS	5.3 (4)	8.3 (2)	6.0 (6)		
	Secondary	2.6 (2)	4.2 (1)	3.0 (3)		
	Primary	2.6 (2)	4.2 (1)	3.0 (3)		

<sup>1</sup>NS = Non-significant (p>0.05); \* = Significant (p<0.05); \*\* = Significant (p<0.01).

dog and cat. Most of the cat owners (54.0%) age ranged between 30-40 years whereas the highest number of dog owners (41.7%) was in between 40-50 years. The highest number of cat owners (50.0%) was student while most of the government officers (29.2%) and businessmen (29.2%) used to rear dog.

### Type of the pet animals

The category of the breed, age and body weight substantially differed between cats and dogs (Table 2). The local breed was the most dominant cat breed (60.5%) followed by the Persian breed (35.5%). Accordingly, the most

Table 2. Breed, gender, age and body weight type of the pet animals

Variables	Category	No. of pet owners % (n)			Pearson's $\chi^2$	Sig <sup>1</sup> .
		Cat	Dog	Total		
Breed	Local	60.5 (46)	50.0 (12)	58.0 (58)	43.71 (7)	***
	Persian	35.5 (27)	0.0 (0)	27.0 (27)		
	Cross	4.0 (3)	4.2 (11)	4.0 (4)		
	Golden Retriever	0.0 (0)	4.2 (1)	1.0 (1)		
	Lhasa Apso	0.0 (0)	4.2 (1)	1.0 (1)		
	German Shepherd	0.0 (0)	4.2 (1)	1.0 (1)		
	Doberman	0.0 (0)	4.2 (1)	1.0 (1)		
	Spitz	0.0 (0)	29.0 (7)	7.0 (7)		
	Gender	Female	52.6 (40)	33.3 (8)		
	Male	47.4 (36)	66.7 (16)	52.0 (52)		
Age (years)	1-3	76.3 (58)	29.2 (7)	65.0 (65)	22.58	***
	>3-6	23.7 (18)	58.3 (14)	32.0 (32)		
	>6-9	0.0(0)	12.5 (3)	3.0 (3)		
Body weight (kg)	1-3	17.1 (13)	45.8 (11)	24.0 (24)	12.57 (5)	*
	>3-6	29.0 (22)	16.7 (4)	26.0 (26)		
	>6-10	31.6 (24)	12.5 (3)	27.0 (27)		
	>10-15	14.5 (11)	20.8 (5)	16.0 (16)		
	>15-20	6.5 (5)	0.0 (0)	5.0 (5)		
	>20-15	1.3 (1)	4.2 (1)	2.0 (2)		

<sup>1</sup>NS = Non-significant (p>0.05); \* = Significant (p<0.05); \*\*\* = Significant (p<0.001).

dominant category of dog breed was local (50.0%) followed by the Spitz breed (29.2%). The cat population was mostly female (52.6%) unlike the majority was male in case of dog (66.7%).

### Feeding practices

Marked variations ( $p < 0.05$ ) were noticed between the types of pet food where mostly handmade foods were given to the cats (51.3%) and dog (83.3%). The most commonly used handmade ingredients were chicken, rice and fish both in cats and dogs that the owners provided in the cooked form (Table 3). The 'Lara' and 'Drools' were the most frequently used commercial foods for the cats and dogs, respectively. Dry readymade and chicken flavored foods were mostly used for the cats and

dogs. The majority of the dogs (50.0%) and cats (56.6%) were fed thrice a day.

### Health status

Trade name of the vaccines used and the pattern of skin diseases were different ( $p < 0.05$ ) whereas the pattern of deworming, vaccination, anthelmintics, digestive disorder and disease occurrence in the last six months were similar ( $p > 0.05$ ) in cats and dogs. About 50.0% of the dogs and 48.7% of the cats were dewormed. Among the anthelmintics, syrup 'Delentin' was used most frequently both in the cats and dogs. Vaccination was given in 57.9% and 62.5% in cats and dogs, respectively. Most of the cat (50.0%) and dog (70.8%) patients were free from digestive disorders like diarrhea, constipation and inappetite (Table 4).

Table 3. Feeding practices of the pet animals

Variables	Category	No. of pet owners % (n)			Pearson's $\chi^2$	Sig <sup>1</sup> .
		Cat	Dog	Total		
Food type	Handmade	51.3 (39)	83.3 (20)	59.0 (59)	8.72 (2)	*
	Readymade	31.6 (24)	16.7 (4)	28.0 (28)		
	Both	17.1 (13)	0.0 (0)	13.0 (13)		
Handmade food	Chicken, rice, fish	52.7 (29)	85.0 (17)	61.3 (46)	6.86 (3)	NS
	Chicken, fish	36.4 (20)	15.0 (3)	30.7 (23)		
	Fish	7.3 (4)	0.0 (0)	5.3 (4)		
	Fish, milk	3.6 (2)	0.0 (0)	2.7 (2)		
Diet type	Cooked	90.9 (50)	95.0 (19)	92.0 (69)	0.33 (1)	NS
	Raw	9.1 (5)	5.0 (1)	8.0 (6)		
Trade name	Lara	47.2 (17)	25.0 (1)	45.0 (18)	10.46 (8)	NS
	Drools	11.1 (4)	75.0 (3)	17.5 (7)		
	Smartheart	11.1 (4)	0.0 (0)	10.0 (4)		
	Whiskas	8.2 (3)	0.0 (0)	7.5 (3)		
	Pedigree	5.7 (2)	0.0 (0)	5.0 (2)		
	Royal canin	5.6 (2)	0.0 (0)	5.0 (2)		
	Me-O	5.6 (2)	0.0 (0)	5.0 (2)		
	Purina	2.8 (1)	0.0 (0)	2.5 (1)		
	Friskas	2.7 (1)	0.0 (0)	2.5 (1)		
	Readymade food type	Dry	88.9 (32)	100.0 (4)		
Soft moist		8.3 (3)	0.0 (0)	7.5 (3)		
Canned		2.8 (1)	0.0 (0)	2.5 (1)		
Flavor	Chicken	52.7 (19)	75.0 (3)	55.0 (22)	0.8	NS
	Fish	41.7 (15)	25.0 (1)	40.0 (16)		
	Chicken and fish	5.6 (2)	0.0 (0)	2.0 (5)		
Frequency of feeding	3	56.6 (43)	50.0 (12)	55.0 (55)	7.68	NS
	4	25.0 (19)	20.8 (5)	24.0 (24)		
	2	9.2 (7)	29.2 (7)	14.0 (14)		
	5	7.9 (6)	0.0 (0)	6.0 (6)		
	6	1.3 (1)	0.0 (0)	1.0 (1)		

<sup>1</sup>NS = Non-significant ( $p > 0.05$ ); \* = Significant ( $p < 0.05$ ).

Table 4. Health status of the pet animals

Variables	Category	No. of pet owners % (n)			Pearson's $\chi^2$	Sig <sup>1</sup> .
		Cat	Dog	Total		
Deworming	Yes	48.7 (37)	50.0 (12)	51.0 (51)	0.01 (1)	NS
	No	51.3 (39)	50.0 (12)	49.0 (49)		
Anthelmintics	Syp. Delentin	56.8 (21)	66.7 (8)	59.2 (29)	4.80 (3)	NS
	Helminticide L	32.4 (12)	16.7 (2)	28.6 (14)		
	Albin	8.1 (3)	0.0 (0)	6.1 (3)		
	Amectin	2.7 (1)	16.6 (2)	6.1 (3)		
Vaccination	Yes	57.9 (44)	62.5 (15)	41.0 (41)	0.16 (1)	NS
	No	42.1 (32)	37.5 (9)	59.0 (59)		
Vaccine name	<sup>2</sup> Rabi-Nobi cat	47.7 (21)	0.0 (0)	35.6 (21)	34.10 (4)	***
	Rabisin	38.6 (17)	33.3 (5)	37.3 (22)		
	Nobivac	13.7 (6)	6.7 (1)	11.9 (7)		
	Eurican LR	0.0 (0)	6.7 (1)	1.7 (1)		
	<sup>3</sup> Rabi-Nobi dog	0.0 (0)	53.3 (8)	13.6 (8)		
Disease incidence	Yes	38.2 (29)	41.7 (10)	39.0(39)	0.09 (1)	NS
	No	61.8 (47)	58.3 (14)	61.0 (61)		
Skin diseases	Yes	26.3 (20)	50.0(12)	32.0 (32)	4.70 (1)	*
	No	73.7 (56)	50.0(12)	68.0 (68)		
Digestive disorder	Absent	50.0 (38)	70.8 (17)	55.0 (55)	3.71 (3)	NS
	Inappetite	35.5 (27)	20.8 (5)	32.0 (32)		
	Diarrhoea	10.5 (8)	8.4 (2)	10.0 (10)		
	Constipation	4.0 (3)	0.0 (0)	3.0 (3)		

<sup>1</sup>NS = Non-significant ( $p > 0.05$ ); \* = Significant ( $p < 0.05$ ); \*\*\* = Significant ( $p < 0.001$ ); <sup>2</sup>Rabisin & Nobivac vaccine for cat; <sup>3</sup>Rabisin & Nobivac vaccine for dog.

#### 4. DISCUSSION

##### Socio-economic status

The gender percentage revealed that the females were more interested in rearing pets (63.16% for cat) compared to the males. Former investigation in the UK and Ireland recommends that females are more prospective to own cats than the males and their association has also been advocated to apply to children in respect to cats and dogs (Downes et al., 2009; Murray et al., 2010; Westgarth et al., 2010). This might be due to the circumstance that the maximum females are involved in household activities in Bangladesh and therefore, they feel more comfortable with spending their leisure time with pet animals. Apart from, when in pregnant period, they are more interested to companionship with pet animals. In this study, female owned significantly more cats than dogs. Religious, historical and cultural traditions and beliefs are likely to influence the attitudes towards cats and this area would benefit from future study to evaluate how these factors influence cat ownership within different ethnicity.

For comparing the overall educational status of the different categories of pet owners, it was found that the majority of the owners were

literate with graduate and/or higher education. It was also evident that the pet owners with a good educational qualification had the higher preferences for pet animals, which could be attributed to their knowledge acquired on pet animal management through comprehension. The students prefer mostly rearing of the pet animals because they provide companionship when they are in stressful condition, encourage exercise and boost their mental health. Besides, the reason for this could be their higher purchase power to own dogs and cats and freedom to maintain them at their own houses unlike the pet owners who were residing in rented houses. Several American researches have acknowledged the trend for higher household earnings predicting pet ownership (Franti et al., 1980; Wise and Yang, 1992; Saunders et al., 2017). In contrast, Murray et al. (2010) found no significant association between household income and dog ownership.

Our study demonstrated that the maximum proportion of respondents belonged to the middle age group (30-50 years), followed by old (> 50 years) and young age (up to age 20 years) groups. Less involvement of the younger age group in pet rearing activity, compared to the other age groups, might be because of the lack of free time and education related activities (Purewal et al., 2017). In addition, the youngsters

seldom receive support of their parents, as pet dog rearing comprises expenses. Many researchers have revealed that the relationship that can be grown amongst people and animals as a result of owning and caring for a pet has noteworthy communal and health welfares. Pet animal offer comradeship, a sense of purpose and unconditional love and these abilities can particularly assist lonesome, aged, or mentally disturbed people. Different research findings have also presented that the pet ownership teaches the children about responsibility, caring, and commitment.

### **Type of the pets**

The utmost section of dog and cat breeds was found as 'Local breed'. This may be because of the higher availability of local breed than foreign breed. Due to low purchase capacity of the foreign breed, people likes to rear local breed. Besides, there are some rescuing institution in Bangladesh to nurse and management of those local breeds. As the lifespan of dog and cat breed is shorter about 2 to 16 years so the results reported here appeared to be higher percentage of the age of the cats (1 to 3 years) and dogs (3 to 6 years), respectively. We also found that the preference of Persian cat was higher than the other breeds because the dignified and docile Persian cat is known for being quiet and sweet. Percent of Spitz dog breed was highest (29.2%) because most of the people prefer it for its attractiveness and intelligence which is in agreement with Samms, (2011).

There were significant variations ( $P \leq 0.005$ ) in the age, breed and body weight of the cats and dogs where the gender was statistically non-significant ( $p \geq 0.005$ ). The study revealed that the higher percentage of dog breeds were male (66%) than the females. It might be attributed to the reduction of breeding nuisance of female and people like to rear only single dog. But in the study of Rooney and Bradshaw (2004), it was strong that, in the UK, males are generally involved with specialist search work than the females. Though, when skilled female quest dogs were in compared to the males, no alteration was stated in their handlers' satisfaction. When comparing dogs to be taught for supervisory work Goddard and Beilharz (1982) found that the females were less hostile and less diverted by the other dogs, amongst other changes. This outcome further proposes that if good dogs are chosen,

females can make defined expert specialist search dogs, and would suggest that there should be more in service.

### **Feeding practices**

Pet owners should be aware about quality foods for their pets consulting with veterinarians so that they can provide sound nutritional quality food. The majority of dogs and cats are still being fed conventional pet food, a large proportion of survey respondents reported additionally feeding homemade foods (52.7% cat and 85.0% dog) without offering vegetarian or vegan diets. Home prepared diets can provide complete and balanced nutrition when properly formulated and prepared. Rahaman and Yathiraj (2000) suggested that the pet animals fed home-prepared diets were perceived by the owners to be complete had a greater prevalence of health problems, compared with the prevalence for dogs fed nutritionally balanced commercial diets. In the study reported here, most of the pet owners who prepared homemade diets for their pets used a recipe designed for chicken, fish, rice and milk. Furthermore, owners may also feed handmade regimes to coddle or bond with their pets; they may recognize these feeds to be more appetizing, or they may consider them to be healthier than processed commercial diets (Remillard, 2008). But this does not agree with other experiment done by others (Baldwin et al., 2010; Freeman et al., 2011) who suggested that the market food is a balanced diet rich in nutrients, palatable and easy to prepare.

Sometimes homemade foods may increase the risk of nutritional imbalances. The most common and noteworthy nutrient inadequacy in homemade diets are calcium, phosphorus, vitamin D and essential amino acids. Many published reports feature evidence of adverse health status directly associated with feeding of inadequate homemade diets. A number of complications may develop in pets consuming nutritionally imbalanced diets, including osteodystrophy and osteopenia, secondary hyperparathyroidism, and pansteatitis (Niza et al., 2003; Stiver et al., 2003; de Fornel-Thibaud et al., 2007). Animals being fed homemade and raw animal origin foods besides their traditional diet, greater than 10% of the animal's caloric consumption could possibly be a dietary threat as specified by the World Small Animal Veterinary Association Global Nutrition Committee.

Here, different types of commercial pet foods are represented on Table 3 where mostly used dog food is 'Drools' (75.0%) and 41% cat food is 'Lara'. Good quality balanced food is inexpensive and usually those are the cheapest amongst all the nine types of commercial diets. All the diets comprising more than 90.0% dry matter during packing is known as dry food which contains rice, poultry meal, corn gluten meal, soybean meal, chicken oil, beet pulp, flax seed, dried whole egg, brewer's dried yeast, lecithin, fish oil, milk replacer, iodized salt, vitamin, and mineral, food coloring and antioxidants with CP-26%, CF-4%, Fat-10% and moisture-10%. Moreover, to this packaging, transport, storage and feeding of dry foods is much more convenient than the soft moist food and canned foods. Dry diets are supplied in the form of meal, kibble, flakes, water, biscuit and crackers. Canned diets of pet animals contain about 70-75% moisture and their shelf-life after opening the container is very short.

Maximum homemade foods are cooked (Cat-90%, dog-95%) than the other raw animal products. Companion animal's diet containing raw animal products are at risk of infection from pathogenic bacteria since no chemical, enzymatic, heat or pressure treatment step is undertaken to kill potential bacterial contaminants. In this study, it was also found that the maximum dogs and cats were fed three times daily. Providing indispensable nutrient needs in dogs and cats slackens the aging process and lessens the risk for cancer, renal disease, arthritis and immune-mediated diseases in pets (Baldwin et al., 2010; Freeman et al., 2011).

### Health status

Brief information about health practices for disease prevention of pet animals is shown in Table 4. Preventive healthcare in small animals primarily involves vaccination and parasite prevention. In this experiment it was found that almost all pet owners vaccinated (Eurican-LR, Nobivac cat and dog, Rabisin) their animals (57.9% and 52.5% in cat and dog respectively) every year against deadly diseases of pets as described by other studies (Greene, 2006; Peterson C, 2006) which indicates that the owners are aware of the importance of vaccination as a disease preventive measure (Force et al., 2011). Nevertheless, the occurrence of deworming varied from every three months and six months which depending on different

scenarios like possible zoonotic dangers or housing circumstances (Epe, 2009). On the contrary, (Ahmed et al., 2014; Procter et al., 2014) reported that kenneled dogs had a high frequency of helminths that can be asymptomatic. Insufficient deworming and irrational use of anthelmintic leads to rise in parasitic infestation and anthelmintic resistance in dogs. It is also found that there was absence of skin disease in 73.7% of the cat and 50.0% of the dogs, respectively. Most of the pet owners of our study population followed control measures against ecto-parasite as the climate favors the growth and multiplication of ecto-parasite in hairy animals like pets. Most of them have a preference in dipping and shampooing their pet animals with acaricides. But proper timing is not followed to control ecto-parasite which is in agreement with the other study (Bowman, 2009). Most of the owners do not clean their kennel properly and this supports the findings of Tarafder and Samad (2010), who stated that poor hygiene increased the menace of infection. In this survey, most of the cats and dogs were free from digestive disorders like diarrhea, constipation and appetite. This might be attributable to proper application of anthelmintic and vaccination which prevented the digestive disorders like canine parvovirus, feline panleukopenia and some gastrointestinal parasites. Moreover, suitable nutrition and housing minimize the stress of pet animals and help to stay healthy.

### 5. CONCLUSIONS

The ownership of pet, occupation of the pet owners, sex, breed, nutrition, and immunization pattern of cats and dogs in Chattogram and Dhaka cities of Bangladesh are different. This study is likely to be useful for the researchers in the field of public health, social science and veterinary science, as well as those studying in the field of human-animal interactions and animal welfare.

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