

**A study on feeding behavior and association of feeding practices with
digestive disorder of pet animals (Dog and Cat)**



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**A study on feeding behavior and association of feeding practices with
digestive disorder of pet animals (Dog and Cat)**



A Production Report Submitted as per Approved Styles and contents

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List of abbreviations

Abbreviations	Amplifications
CVASU	Chattogram Veterinary & Animal Sciences University
CVH	Central Veterinary Hospital, Dhaka
SAQTVH	SAQ-Teaching Veterinary Hospital

Abstract

In Bangladesh, home-cooked diets are often fed due to the cost and lack of availability of commercial diets. Recently it is mostly seen that owners choosing commercial diets for their pets. These studies aimed to find out the feeding pattern & associated nutritional diseases of pet animal in Chittagong & Dhaka region & also find out the possible social status of pet owners in Bangladesh. The study was conducted via questionnaires distributed to pet owners visiting in Chattogram Veterinary & Animal Sciences University & Central Veterinary Hospital. Total 50 cases were collected for this study & analyzed that 64% of their respondents had their qualification at graduate level, among 50 species whereas frequency of cat was 76% & the dog was 24%, 68% were fed only home-cooked food, while 32% were fed only commercial food. P value is more than 0.05 so there is no association of vaccination, deworming, feed type, form of feed, flavor of feed, frequency of feeding, and skin disease with different digestive disorders such as in appetite, constipation and diarrhoea. This study provides some basic information regarding feeding behaviour and association of feeding practices with digestive disorder of pet animals (Dog and Cat).

Key words: Pet animals, nutritional diseases, commercial diets, feeding behavior, social status etc.

Chapter 1: Introduction

A pet or companion animal is an animal kept primarily for a person's company, entertainment or as an act of compassion such as taking in & protecting a stray cat, rather than as a working animal, livestock or laboratory animal. Though Bangladesh is an agricultural country but nowadays people are very much interested towards the pet animal specially dog & cat. Dogs and cats may be the most frequent household pets around the world, but there are also many other vertebrates that share our household environment (**Bruno and Chomel, 1992**). Now a days modern society is very much urbanized family is more nuclear. Individualism is everywhere. All are busy with their own activities. So, parents or children who are not engaged with direct work or responsibilities, are more interested in caring pets to avoid their loneliness. Pet animals contribute to physical, social and mental wellbeing of children and their owners (**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 purposes (**Parvez et al., 2014**). The Owners treated their pet as like as their children. They are very much concerned about their health conditions, Physical activities & also nutrition. People are very much busy with their work so in that case sometimes they provide Readymade food or sometimes provide Homemade food. But for the pet owner needs adequate knowledge about their pet food as well as which type of feed should be provided their pet for better health condition. Dogs can be successfully maintained on properly formulated home-cooked diets; this is much more difficult in cats. Advantages of home-cooked diets include the use of fresh, high-quality ingredients chosen by the owner. Advocates of homemade diets cite various benefits such as increased control over ingredients used and their quality, avoidance of artificial preservatives, preservation of natural enzymes and phytonutrients, the ability to tailor the diet to meet specific needs of an individual pet and increased variation in diet (**Berschneider 2002; Michel 2006**). There are also some Disadvantages including preparation time, variable quality control and diet consistency, higher cost, and the difficulty in formulating and preparing a nutritionally complete and balanced diet. A large study evaluating the

nutritional adequacy of homemade diets showed that 95% of homemade diet recipes resulted in at least one essential nutrient at concentrations below guide-lines set by the Association of American Feed Control Officials (AAFCO). The most common deficiencies were in calcium levels, micronutrients such as zinc, copper and choline and vitamins D and E (**Dzaniš 1993; Stockman et al. 2013**). So, in this present time the owners mostly like commercial feed for their pet. Another study showed that homemade diets are comparatively higher in dietary protein and significantly lower in calcium and calcium phosphorus (Ca:P) ratios when compared to commercial diets (**Streiff et al.2002**)

Therefore, the present study was designed to investigate what kind of people are rearing pet animals and what type of food provides as well as the associated digestive disorder of the pet in Dhaka & Chittagong region.

Objectives:

1. To find out the feeding pattern & associated nutritional diseases of pet animal in Chittagong & Dhaka region.
2. To find out the possible social status of pet owners in Bangladesh.

Chapter 2: Material & Methods

It is an integral part of any research. Without proper & systemic methodology a study never can achieve the ultimate goal. The methodology of the present study is discussed in this chapter.

The study was accomplished by following methods:

2.1 Study location: The survey was performed in Central Veterinary Hospital, Dhaka and also in SAQTVH, Chattogram Veterinary and Animal Sciences University, Chattogram.

2.2 Study period: Duration for this survey was 6 month (August2019 -January2020).

2.3 Data collection: The study was designed as part of a larger survey conducted to obtain information about pet feeding habits, health status of the animal (Healthy, unhealthy). The survey questionnaire was developed by Google Form. Each question was intended to gather information about feeding behavior, how many times to provide feed in a day; either the feed is commercial or homemade, raw or cooked. For each pet, closed-ended questions were used to identify the species, age, breed, sex, body weight also gather information about the pet is vaccinated or not & also deworming or not. Also gather information about the owner's profession, educational qualification, their age & socio-economic status.

2.4 Statistical analysis: All the data are compiled in Microsoft Excel 2007 and then analyzed in stata (Stata/SE 13.0, StataCorpLP, 4905 Lakeway drive, College Station, TX77845, USA) for frequency analysis and perform Pearson chi square test for finding association between rearing ,feeding practices such as feed type, type of diet ,form of feed ,frequency of feeding and digestive disorder of pet animals.

Chapter 3: Results

Table 1: Status of pet owner (N=50)

Variable name	Categories	Frequency (%)
Gender	Male	28(56%)
	Female	22(44%)
Educational Qualification	Graduate	32(64%)
	Higher secondary	14(28%)
	Secondary	1(2%)
	Primary	3(6%)
Profession	Student	23(46%)
	Business	16(32%)
	Govt.officer	4(8%)
	Housewife	3(6%)
	Army major	1(2%)
	Photographer	1(2%)
	Teacher	1(2%)
	Banker	1(2%)

The statistical analysis of data revealed that about 56% (28) of the pet owner were male & the rest 44% (22) were female .64% of their respondents had their qualification at graduate level & 28% at higher secondary level where as 2% level in secondary level & 6% at primary level.

The study also indicated that most of the pet owner were student 46% (23) whereas 32% (16) profession were business , Govt.officers were 8% (4), Housewife were 6% (3),Army major 2% (1), Photographer 2% (1), Banker 2% (1).

Table 2: Feeding behavior of pet animal

Variable name	Categories	Frequency (%)
Species(N=50)	Cat	38(76%)
	Dog	12(24%)
Breed	Cross	2(4)
	Doberman	1(2)
	German shepherd	1(2)
	Local	25(50)

	Persian	16(32)
	Spitz	5(10)
Gender	Male	32(64)
	Female	18(36)
Deworming(50)	Yes	24(48%)
	No	26(52%)
Deworming drug (N=24)	Syrup. Delentin	22(91.67%)
	Albin	2(8.33%)
Vaccination	Yes	21(42%)
	No	29(58%)
Vaccine (N=30)	Nobivac	7(23.33)
	Rabisin	22(73.33)
Feed type	Handmade	34(68%)
	Readymade	16(32%)
Type of diet if handmade	Cooked	32(86.49%)
	Raw	5(13.51%)
Form of feed if readymade feed	Dry	13(86.67%)
	Soft moist	2(13.33%)
Flavor of feed (n=15)	Fish	12(80)
	Chicken	3(20)
Brand name(n=15)	Drools	5(33.33%)
	Lara	1(6.67%)
	Pedigree	2(13.33%)
	Purina	1(6.67%)
	Smart heart	1(6.67%)
	Smart cat	1(6.67%)
	Whiskas	2(13.33%)
	Me-O	2(13.33%)
Cost of the feed(taka/kg) (N=15)	500-1000	5(33.33)
	1100-1200	10(66.67)
Frequency of feeding/day(N=50)	2-3	36(72)
	4-5	14(28)
Disease occurs in last 6 months (N=50)	Yes	9(18)
	No	41(82)
Skin disease	Yes	35(70%)
	No	15(30%)
Digestive disorder	Constipation	1(2%)
	Diarrhoea	5(10%)
	In appetite	19(38%)
	Absent	25(50)

The scenario of feeding behavior of pet animal in the case revealed that the work had been among 50 species whereas frequency (%) of cat was 76% (38) & the dog was 24% (12). Among 50 species generally found 6 breeds whereas frequency (%) of cross breed was 4%

(2), Doberman 2% (1), German shepherd 2% (1), Local 50% (25), Persian 32% (16) & Spitz breed was 10% (5). 64% (32) male breed & 36% (18) female breed was present among 50 species. Of the sample size, 48% (24) cases deworming was done but in 52% (26) cases deworming was not performed. In the study it was seen that for deworming most commonly used drug was Syrup.Delentin 91.67% (22) whereas Albin was used 8.33% (2). The percentage rate of vaccinated pet was 42% (21) while on the contrary 58% (29) was non vaccinated. For vaccination most commonly used Rabisin which percentage was 73.33% (22) whereas the frequency rate of Nobivac was 23.33% (22). This study revealed that maximum cases about 68% (34) provided homemade feed while in 32% (16) rate provided readymade feed. In case of homemade feed two form were found , in which 86.49% (32) found as cooked form & 13.51% (5) remain as raw form .In case of readymade feed 86.67% (13) dry form feed provided & 13.33% (2) soft moist form feed provided. Two kind of flavor of feed found in this study ,one was fish flavor & another chicken flavor which percentage were 80% (12) & 20% (3).Different branded feed provided which was also found in this study such as Drools, Lara, Pedigree, Purina , Smart heart, Smart cat, Whiskas, Me-O according their name their percentage was 33.33% (5), 6.67% (1), 13.33% (2) ,6.67% (1), 6.67% (1), 13.33% (2) ,13.33% (2).Majority cases 2-3 times frequency of feeding/day was found which percentage was 72% other hand 28% 4-5 times frequency of feeding was found .In 18% cases disease occurs in last 6 months but in case of 82% cases no disease was found .Majority percentage70% skin disease was found in this study. In case of digestive disorder most commonly found in appetite form which was 38% , diarrhoea 10% on the contrary no digestive disorder found in 50% cases.

Table 3: Association of feeding practices with digestive disorder of pet animals

Variables	Category	Digestive disorder				P value
		normal	In appetite	Diarrhea	Constipation	
Vaccination	No	8	9	3	1	0.348
	Yes	17	10	2	0	
Deworming	No	12	11	2	1	0.651
	Yes	13	8	3	0	
Feed type	Handmade	18	12	3	1	0.800
	Readymade	7	7	2	0	

Type of diet if handmade	Raw	3	2	0	0	0.869
	Cooked	16	12	3	1	
Form of feed if readymade feed	Dry	6	6	1	0	0.196
	Soft moist	1	0	1	0	
Flavor of feed	Fish	6	4	2	0	0.520
	Chicken	1	2	0	0	
Frequency of feeding/day	2-3	20	13	2	1	0.279
	4-5	5	6	3	0	
Skin disease	No	17	14	3	1	0.841
	Yes	8	5	2	0	

From table 3 we can found, p value is more than 0.05 so there is no association of vaccination, deworming, feed type, form of feed, flavor of feed, frequency of feeding, and skin disease with different digestive disorders such as in appetite, constipation, diarrhoea.

Chapter 4: Discussion

The purpose of this study was to obtain information regarding the feeding behavior and association of feeding practices with digestive disorder of pet animals (Dog and Cat) visiting a first opinion and referral practice in CVASU & CVH. Veterinarians were the most commonly cited source of information about pet care and nutrition in the study reported here, a finding that has also been reported in another survey. This study also provides some basic information regarding the demographics of the owned pet population in Dhaka & Chittagong region. This study is biased in that it was conducted only at Chattogram veterinary & Animal Sciences University in Chattogram also in Central Veterinary Hospital in Dhaka and survey about less number of pet animals. The mean density of the dog population in Bangladesh is 14 dog/km² (M. Hossain et al. 2013). Comparison of this study population with data from studies conducted in 2007 gave an indication of the number of roaming dogs and owned dogs in the Colombo Municipal Council (CMC) area (Blue Paw Trust, Humane Dog Population and Rabies Control Project, unpublished observations) & also conducted in the United Kingdom, United States and Australia may be useful in highlighting differences between dog populations in the developed world and the developing world. In this study, cross breed was 4% & the most common pure breed was Doberman 2% (1), German shepherd 2% (1), Persian 32% (16) & Spitz breed was 10%. Results from a study conducted in the Colombo, Sri Lanka showed that 27% of dogs were cross breeds and the most common pure breed was the Labrador retriever (27%) & also in the United States showed that similarly, 27% of dogs were cross breeds and the most common pure breed dog was the Labrador retriever (Lund et al. 1999). These figures indicate that this study population has not a similar proportion of pure breed dogs when compared to another country pet population. This study was designed to include only two regions to provide a study population representative of the general population of pets. However, no attempt was made to differentiate regional effects within these data. In the study reported here 32% rate provided readymade feed. Comparatively, greater than 90% of dogs in Australia and the United States were fed commercial food for more than 50% of their diet (Lund et al. 1999; Laflamme et al. 2008). Maximum cases about 68% of owners in this study fed their pets solely homemade diets. This figure was only 1.3% in a study conducted across the United States and 3% in a more recent study conducted in the United States and Australia (Lund et

al. 1999; Laflamme et al. 2008). Homemade diets can provide complete and balanced nutrition when properly formulated; a study conducted in India showed that dogs fed a homemade diet had a greater prevalence of health problems when compared to dogs fed commercial diets (Rahaman & Yathiraj 2000). Interestingly, a study comparing the nutritional adequacy of home-made and commercial diets for dogs showed that while home-prepared diets had several nutritional deficiencies when compared to AAFCO recommendations, serum biochemistry and complete blood counts for all dogs in the study were within normal limits. Serum parathyroid hormone levels were also within normal limits even though home-prepared diets had lower calcium: phosphorus ratios (Streiffet al. 2002). As Bangladesh is a developing country & the readymade feed is costly so owners are very much interested for providing homemade feed rather than readymade feed. Therefore, there are significant nutritional concerns with these homemade diets. Complications arising from feeding nutritionally imbalanced diets include osteodystrophy, osteopenia and nutritional secondary hyperparathyroidism (Kawaguchi et al. 1993; DeFornel-Thibaud et al. 2007; Hutchinson et al. 2012). These dietary imbalances are of most concern in growing puppies, especially those of large or giant breeds where dietary calcium : phosphorus ratio and energy levels during the growing period have greater implications on health status (Schoenmakers et al. 2000; Lauten 2006). In this study it was revealed that owners were most likely to keep local pet breed than pure breed so that's why no digestive disorder found in 50% cases.

Chapter 5: Conclusion

This is an uncommon study about feeding behavior and association of feeding practices with digestive disorder of pet animals (Dog and Cat) in Bangladesh and it highlights two important district. Nutritionally balanced and complete commercial food is now-a day mostly popular but majority of the owners preferred homemade feed for their pet. Maximum owners are educated & they are very much conscious about their pet feed. In that case veterinarians play vital role for providing nutritional advice along with the nutritional deficiency. Widespread evaluation of a specific diet along with better understanding of the ingredients of commercially available supplements is essential when providing nutritional advice. This study did not judge owner awareness with concerns to pet nutrition and this would be an interesting topic for future studies. It will also be useful to broaden this study to include a wider population including rural areas. Assessing longevity and health with digestive disorder of pet animals (Dog and Cat) fed different diets will be useful in relating the benefits of homemade feed vs. commercial feed.

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