# CHAPTER I:

# INTRODUCTION

Dogs have had a long association with humans and are believed to be the first domesticated animal species. Many breeds of dog exist today which vary considerably in physical appearance and temperament. These differences have arisen primarily from selective pressures imposed by humans to create dogs suitable for various working roles. Nowadays, however, few breeds undertake the work they were once bred for; rather dogs are kept primarily as companions. With differing lifestyles and an increase in urban living it is necessary to identify what constitutes an ideal dog should have in the present day.

Globally, Bangladesh ranks third in the number of human deaths from rabies. Although dogs are the principal known transmitters of rabies and knowledge of dog populations and the management system is essential for effective national control. Dogs are the most popular pets in the western world (Hart, 1995) and are present in almost every human society worldwide (Serpell, 2001). It is thought that around 3000–4000 years ago distinctive breeds came into existence as a result of artificial selection by humans (Clutton, 1995). Dog breeders selected for particular physical characteristics, such as color, coat length, height and facial appearance, as well as for certain behavior, such as guarding, pulling goods, herding livestock, hunting and retrieving. For understanding the size and demography of dogs is a necessary first step for planning rabies prevention and control and also to plan drugs and vaccine requirement for veterinary care (Downes *et al*. 2013; FAO, 2014). Cross-sectional household surveys have been recommended to study the population demography of owned dogs (Downes *et* *al*. 2013). For instance, the proportion of households that own dogs has been studied in numerous countries, including Sri Lanka (rural 57%) (Matter *et al.* 2000), Thailand (73.7%) (Kongkaew *et al.* 2004), Chile (rural 89%, towns 63% and cities 49%) (Acosta *et al*. 2010), Zimbabwe (rural 62%) (Butler and Bingham, 2000) and Mexico (urban 54%) (Flores and Estrella, 2004). These studies have also estimated the mean number of dogs per dog owning household in the range of 1.2 to 3.2.

Nowadays, as other western countries Dog has become one of the most popular pets in city area of Bangladesh. There are some studies about the population, management and vaccination status of stray dog of Dhaka city, Bangladesh. Overall free-roaming dog population in Dhaka Metropolitan Area (DMA) during early 2011 was estimated to be 18,585 dogs (52 dogs per km2) (Tezin *et al*, 2015). . This study mainly deals with the owned dogs of Dhaka city. The city is administered by the Dhaka City Corporation (DCC) which is divided into two administrative parts - North and South Dhaka City Corporations - ensuring better civic facilities. The city is divided into 10 zones and further sub-divided into 92 wards ([Figure 1](http://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0003784#pntd-0003784-g001), Panel C and D). An estimated 15.391 million people live in Dhaka City and it is one of the most densely populated cities in the world (World Statistics 2014 edition.). However, no studies have been conducted to understand the demographics of owned dogs in Dhaka city. That’s why this study was conducted to survey the management status of owned dog in this city.

Considering the above facts the present study was undertaken to full fill the following objectives:

1) To understand the preference of different types of dog as pet.

(2) To find out the main function of owned dog.

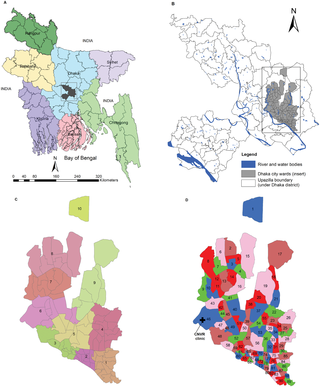
(3) To identify the various dog management system in city area.

**CHAPTER II:**

**MATERIALS AND METHODS**

**2.1. Study site**

This study was mainly conducted in Dhaka city area from the information of several dog owners from different areas of Dhaka city.



**Figure 1: Study area**

**2.2. Study period**

All the information’s were collected during my internship period at Dhaka central veterinary hospital from 5th July’17 to 4th August’17

**2.3. Data collection**

A predesigned well structured questionnaire was used to obtain data (the number of dogs owned, age, breed, sex, vaccination, pedigree history, their function and management). The questionnaire survey was conducted from 4th July’ 17 to 5th August’ 17. The survey was conducted through a face-to-face interview with the person responsible for the dog management at the household residence by the researcher.

**2.4. Participants**

Data were collected from the dog owners coming at central veterinary hospital for treatment or vaccination of their pet dog. Data are collected from 100 participants over a period of 4 weeks.

**2.5. Data Analysis:**

After collection of data from the owners were organized, structured and analyzed by using tabular method. Data were entered into Microsoft Excel and subsequently checked for missing and extreme values against the hardcopy questionnaires. Collected data were analyzed using descriptive statistical tools such as mean, standard deviation and percentage where appropriate. Prevalance was calculated using (Open source epidemiological statistics for public health, version 3.01). Fisher’s exact test was followed to find out the P-value.

**2.6. Preference of breed and dog management survey:**

The study population for this survey dog owned people from different areas of Dhaka city like Uttara, Dakshin khan, Banani, Gulshan, Motijhil, Cantonment, Mughdha etc and the sample size was 133 dogs. The information about the owners residence types like flat or own house with backyards were recorded for analysis the confinement status of dog. Criteria about their preference of choosing breed, sex, functions of dog were recorded by interview. Present vaccination status of their dog was also recorded.

**Chapter III**

**RESULTS**

**3.1. Type of dog kept**

Most of the dogs were found as nonpedigree type 126 (97.4%) among 133 dogs in the investigated area.

97.4%

**Figure 2: Pedigree and non pedigree range of dogs**

**3.2. Vaccination status of dog**

In this study 86 of 133 dogs (64.6 %) older than three months were said to have been vaccinated previously. However only 26 dogs were under 3months and 21 of 133 dogs were not vaccinated.

**3.3 Dog function**

Dogs were kept solely as pet by most of the people in the Dhaka city. Some dogs are kept as a guard. And some are kept as guard and pet both. Few people keep dog for trading purpose.

**Table 1: Percentage of dogs involving in different functions**

|  |  |  |  |
| --- | --- | --- | --- |
| **Pet dog** | **Guard dog** | **Pet and guard dog** | **Trading purpose** |
| 98 (73.6%) | 18 (13.5%) | 15 (11.27%) | 2 (1.5%) |

**3.4. Dog demographics and confinement**

**Table 2: Demographic status of 133 owned dogs**

|  |  |
| --- | --- |
| **Criteria** | **Value** |
| Average number of persons per households | 3.4±1.5(Average ± standard deviation) |
| Average number of dog per households | 1.34±1.17(Average ± standard deviation) |
| Number of total male dog | 111 ( 83.45% ) |
| Number of castrated dog | 72 (64.86% ) |
| Number of female dog | 22 ( 16.54% ) |
| Number of spayed female dog | 17 (77.27%) |
| Male female ratio | 5.04:1 |

A total 133 dogs were kept by household surveyed. Male dogs were more numerous than female. Male and female ratio was 5.04:1

People usually prefer male castrated dog then female spayed dog. The number of male castrated dog is higher 72 (64.86% ) among the total number of male where as 17 female dogs (77.27%) are spayed The calculated P value is 0.003 (Fisher’s exact test).

Most of the dogs have always restricted roaming and some are allowed for semi roaming. Only few dogs which are local breed allowed for free roaming. Among the 133 dogs 78% dogs found restricted and 20% dogs found semi roaming and only 2% dogs have the right for free roaming.

**Figure 3: Proportion of restricted, semi roaming and free roaming dogs**

**3.5. Breed preference**

As the owners of the city area rear dogs mainly for the companion recreation and entertainment they prefer foreign breeds than local breed dog. Different types of breeds were found during the study like and the result shown in figure 4.

**Figure 4: Number of different types of breed of dog (N=133)**

Among different breeds we found the highest number of Labrador followed by Spitz and German shepherd and the the number of Pomerian and Keesond was lowest.

**3.6. Age of dogs**

The range of age of pet dogs kept by the owners started from 1 month to 9 or 10 years. The mean age of dog in this study is 2.5 years.

**Figure 5: Percentage of different aged male and female dogs**

The average number of dogs between 2-3years is 31% which is the highest range followed by 1-2years aged dog. And the average number of dogs above 5 years years is 6% which is the lowest.

**CHAPTER IV:**

**DISCUSSION**

Of the dog-owning households interviewed in this survey, the majority of owned only one dog, most commonly non-pedigree and more commonly castrated male. Dogs are used as pet and to guard houses. This types of findings also found in different studies of other countries.

Based on common local understanding, female puppies are likely to be abandoned soon after birth**.** The preference appears to the friendly relationship between owner and dog given the majority of interviewed households keep dogs for this reason. And the second cause of keeping dog is for guarding purpose. A preference for keeping dogs for guarding purposes has also been observed in other countries such as Madagascar, Tanzania and the Philippines (knobelt *et al,* 2003) with the percentage of households owning non-pedigree dogs being higher than those owning pedigree dogs.

In this survey, most (97%) owned dogs were restricted or semi free-roaming a Dhaka city. A substantial number of roaming dogs is a threat for rabies transmission, should an incursion occur in Dhaka, and for transmission of other zoonotic diseases. People prefer exotic breed dog than local type of dog. Most of the dogs are non pedigree type because owners collected or bought their dog from commercial source. The vaccination status was not satisfactory because most of the people are not aware about the diseases of dogs.

However, there are plenty of examples that communicating specific messages to children and the general public have resulted in an increased awareness, sensibility and understanding of dog behavior, positive interaction between dogs and people and more responsible owners.

It is important that education objectives are clear, consistent and positive, as negative messaging can encourage negative change. The cost of education efforts are often borne by the animal welfare organizations. Training of personnel working in dog control management services is crucial for the effective implementation to ensure best practice at all times. This includes the training of those involved in the initial assessment, training of catching and handling staff and shelter staff, training of veterinarians and crucially those agencies responsible for the development and delivery of the strategy.

Registration and identification is the most effective way of clearly connecting an owner with the animal, and it is also an important tool for successful enforcement ( Kobelt *et al*, 2003) In many countries mandatory identification has had a significant impact on population reduction and control. However, it is important to start registration of each dog of the city area of Bangladesh for proper survey of dog management and control of dog population and different zoonotic disease

**CHAPTER V:**

**LIMITATION AND RECOMMENDATIONS**

All the dog owners were not equally co-operative and friendly. They sometimes tried to escape in the middle of the interviews and the population size was small.

Further study needed with large sample size to obtain the accurate view of owned dog population and management. And the education and proper training of the dog owner about the management of dog is needed as a part of program. Also it is necessary to make aware the owners about the vaccination, zoonotic diseases and their control measurement to reduce the risk.

**CHAPTER VI:**

**CONCLUSION**

Most of the dog owners like exotic breed than local breed of dogs and all of them are not aware about the vaccination and zoonotic diseases. So, the control and management of owned dogs is needed through education of dog owners by relevant government authorities and veterinarians.

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**The Author**

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**BIOGRAPHY**

Myself FARZANA YASMIN, the author of this case report would like to introduce as Intern doctor of Chittagong Veterinary and Animal Sciences University (CVASU) have passed four years academic career in faculty of Veterinary Medicine and attended several clinical training programs on Veterinary Medicine in Bangladesh, India and Malaysia. As a student of Veterinary science,. I with a passion for animal welfare, a high interest in the natural sciences, a desire to be involved in education, and a dedication to life-long learning, my goal is to be a competent and contributing member of the veterinary profession.