

Research article**Occurrence of zoonotic parasites in cats (*Felis catus*) at an urban pet market**Priyanka Barua^{1*}, Sharmin Musa¹, Rezwana Ahmed¹, Hamida Khanum¹¹Department of Zoology, University of Dhaka, Dhaka 1000, Bangladesh

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ABSTRACT

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Cats (*Felis catus*) are felids which have a close emotional bond with human beings. Because of the close contact with their owners, they harbor many parasites of zoonotic importance. This study was conducted to determine the prevalence and intensity of infestation of important zoonotic parasites of cats from a well-known pet market in Dhaka, Bangladesh. Fecal samples from 30 cats were examined for one year, of which 28 cats (93.33%) were infected with 15 different species of parasites. Among them, *Trichuris vulpis* had the highest prevalence (93.33%). Other highly prevalent parasites were *Capillaria* spp (90%), *Toxascaris leonina* (76.67%), *Toxocara cati* (73.33%) respectively. In general, kitten (≥ 6 months- 1 year) and young (>1 - 2 years) cats had higher parasitic prevalence (100%) than the adult cats (>2 - 3 years) (prevalence 81.82%). According to sex, 15 out of 16 males (93.75%) and 14 out of 14 females (100%) were infected with at least one sp. of parasite. *T. vulpis* (100% in female vs 93.47% in male), *Capillaria* spp. (85.71% in female vs 93.75% in male) and *T. cati* (78.57% in female vs 75% in male) were the parasites that had higher prevalence rate in both male and female hosts. Prevalence of parasites in pet cats was highest in winter (100%) and summer (100%), followed by in monsoon (83.33%). The current study reported the occurrences of commonly found cat parasites in a pet market of the capital city of Bangladesh and should be useful for a basis of study for further molecular identification of important zoonotic parasites of Bangladesh.

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1. INTRODUCTION

Cats (*Felis catus*) are one of the most cherished pet animals in the world. Previous history suggests that cats were domesticated by the early age people for various important purposes (Downes et al., 2009). Apart from dogs, cats are the only domesticated animals to dwell indoors with humans and when in wild, it is solitary in nature. The mutual relationship between human and domesticated cats are fascinating as cat has been able to take its living wants (food, shelter and play) from human and in return it could act to control pests in human habitat protecting the cultivated and stored grain of human from

rodents. In modern world, caring for pets have been associated with relaxation of human mind (Virués-Ortega and Buéla-Casal, 2006), less suicidal activity and comfort of having a companionship at home (Daly and Morton, 2006).

As pet cats have a close bond with human, there is a major risk of health hazard due to close contact (Robertson et al., 2000). They harbor several infective stages of disease causative agents transmissible to man (Molyneux, 2004). To date, domestic animals represent an important source of zoonotic diseases; a disease that can be passed between animals and humans (Dada et al., 1979). The transmission of

zoonotic agents could be through indirect contact with animal secretions and excretions, infected water and food, fecal samples and through direct contact with the animals. More than 100 zoonotic diseases are also associated with cats, among which helminthosis is concerned with serious public health problems around the globe (Coati et al., 2003). This is especially concerning for pregnant women, because the immature worms may wander into the tissues of the developing fetus affecting its growth and development. Another serious disease in pregnant women is toxoplasmosis, which is caused by a microscopic intestinal parasite *Toxoplasma* spp., and it can cause congenital neurological defects in infants (Nash et al., 2005).

Previous studies in Bangladeshi cats have identified different zoonotic parasites and their prevalence rate was also very high. Important zoonotic parasites include *Toxoplasma gondii*, *Toxocara cati*, *Dirofilaria immitis* and *Ancylostoma tubaeforme* in one study (Samad, 2011). In another study, in addition to *T. gondii*, *T. cati* and *A. tubaeforme*, other observed parasites were *Sarcocystis* sp., *Cryptosporidium* sp. and *Toxascaris leonina* etc. (Rahman, 2007). To date, there has been lack of studies in urban pet cats of Bangladesh.

In Bangladesh, the use of cats as pet is increasing day-by-day in urban culture, so the risk of infection by zoonotic parasites is also increasing. As Katabon pet market is one of the places from where lots of pet cats are sold, there needs to be a survey on these animals to know their health status and associated risk for human health. The current study aimed to identify different zoonotic parasite species in cats (*Felis catus*) from a famous Pet Market in Dhaka (Katabon), Bangladesh. We also tried to determine the prevalence and intensity of zoonotic parasite species in cats according to age, sex of the host and different seasons and the associated risk factors for feline parasitic zoonosis.

2. MATERIALS AND METHODS

Study area

To study the prevalence of zoonotic parasites of cats, the current study was done in Katabon Pet shops in Dhaka district. There are about 16 pet

shops in Katabon. In these pet shops, a variety of animals including cats of local breed are found. Identification of parasites was done in the Parasitology Laboratory of Department of Zoology, University of Dhaka.

Study Period

The research work was carried out for a year (June, 2014 to May 2015). The study period was divided into to three seasons of Bangladesh:

- A. Summer – March to May
- B. Monsoon – June to October
- C. Winter – November to February

Collection and preservation of fecal sample

Fecal sample were collected randomly from the animals' cage. Before collection, the animals were restrained properly and all possible hygienic measures, e.g. wearing apron, hand gloves and shoes were taken to avoid contamination. Fresh fecal samples were collected carefully from the cage-tray just after defecation. A total of 30 samples were collected from 30 local breed of cats. About 20-25 grams of feces were collected carefully from each animal. Each sample was kept in a plastic pot, silted carefully and numbered properly. The samples were preserved in 10% formalin. The corrected labeled and numbered pots containing fecal samples with all required information were brought to the laboratory and examined.

Examination of selected cats

The selected cats were investigated properly for collecting different information related to zoonosis. Age, sex and seasons of the year when samples collected, were recorded carefully. The foods supplied by the pet-sellers, the fecal cleaning systems of the shop, the hygiene status of the shop-environment and the pots in which the foods are given to the cats were also noted.

Age groups

Age of host is an important factor which has effect on the prevalence of different parasite. Samples were collected according to three different age groups. These were-

1. ≥ 6 month - 1 year (kitten)
2. > 1 year - 2 years (young cats)
3. > 2 years - 3 years (adult cats)

Examination of fecal sample

For the examination of fecal samples, at least five slides were prepared. To detect the presence of parasites' egg, Formol Ether Concentration technique was used according to a previously published method (Cheesbrough, 1987).

Identification of egg of different helminthes

Identification of egg of different helminthes was performed with the help of compound (10X) microscope. The 40X objective was also used for the confirmation of ova and larvae. Eggs and larva observed under the microscope were identified by the following descriptions and pictures published: (Chatterjee, 1975; Cheng, 1997; Soulsby, 1982; Schimidth and Roberts, 1989).

Statistical analyses

Statistical analyses were performed by standard software (SPSS, version 13.0, SPSS Inc, Chicago, III) and value of p < 0.05 were considered significant.

Parasitic assemblage in cats

In the current study, 30 cats were randomly selected for the calculation of parasitic assemblage from their fecal samples. Their sex, age and seasons of sample collection were also noted for further analyses. 15 species of parasites' egg were identified in the fecal samples (Table 1) by the identification of oocysts by microscopy (Chatterjee, 2009). Among 30 cats, 28 cats (93.33%) were infected by different species of parasites. Fifteen (15) different species were identified by microscopy. Among them, *Trichuris vulpis* (Figure 1) had the highest prevalence (93.33%) followed by *Capillaria* spp (90%) (Figure 2). Other parasites with high prevalence rate were- *Toxascaris leonina* (76.67%) and *Toxocara cati* (73.33%) respectively. *Sarcocystis* spp. had the highest intensity rate (37±15) followed by *Capillaria* spp. (16.4±10), *Gnathostoma* spp. (15.4±12) and *Ascaris lumbricoides* (11.2±8) (Table -2).

3. RESULTS

Table 1. Identified parasites from the fecal sample of cats

Class/Phylum	Family	Name of Parasites
Protozoa	Sarcocystidae	<i>Sarcocystis</i> sp.
		<i>Toxoplasma gondii</i>
Cestoda	Taeniidae	<i>Taenia</i> spp.
	Hymenolepididae	<i>Hymenolepis diminuta</i>
		<i>Hymenolepis nana</i>
Trematoda	Diphyllbothridiae	<i>Diphyllbothrium latum</i>
	Opisthorchiidae	<i>Ophisthorchis</i> spp.
	Heterophyidae	<i>Heterophyes</i> spp.
Nematoda	Ascarididae	<i>Toxocara cati</i>
		<i>Toxascaris leonina</i>
		<i>Ascaris</i> spp.
	Ancylostomatidae	<i>Ancylostoma caninum</i>
	Capillariidae	<i>Capillaria</i> spp.
	Gnathostomatidae	<i>Gnathostoma spinigerum</i>
	Trichuridae	<i>Trichuris vulpis</i>

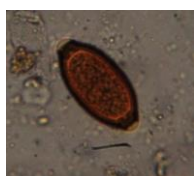


Figure 1: Egg of *Trichuris vulpis*

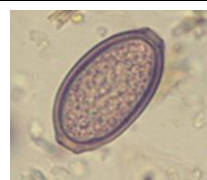


Figure 2: Egg of *Capillaria* spp.

Table- 2 Overall prevalence of parasites in cats

Name of the parasites	Total no. of host	No. of host infected	Prevalence in infected hosts (%)	Egg/gm. Or Oocyst/gm	Intensity \pm SD
<i>Sarcocystis</i> spp.	30	18	60	666	37 \pm 15
<i>Toxoplasma</i> spp.	30	18	60	102	5.7 \pm 3.5
<i>Taenia</i> spp.	30	7	23.33	21	3 \pm 2
<i>Hymenolepis diminuta</i>	30	11	36.67	57	5.2 \pm 2.5
<i>Hymenolepis nana</i>	30	9	30	54	6 \pm 4
<i>Diphyllobothrium latum</i>	30	4	13.33	12	3 \pm 1
<i>Heterophyes</i> spp.	30	9	30	60	6.7 \pm 3.8
<i>Opisthorchis</i> spp.	30	11	36.67	84	7.6 \pm 5.5
<i>Ancylostoma</i> spp.	30	8	26.67	24	3 \pm 2.5
<i>Ascaris lumbricoides</i>	30	15	50	168	11.2 \pm 8
<i>Capillaria</i> spp.	30	27	90	444	16.4 \pm 10
<i>Gnathostoma</i> spp.	30	15	50	231	15.4 \pm 12
<i>Toxascaris leonina</i>	30	23	76.67	96	4.2 \pm 2
<i>Toxocara cati</i>	30	22	73.33	180	8.2 \pm 6.5
<i>Trichuris vulpis</i>	30	28	93.33	504	18 \pm 12.5

Parasitic assemblage in cats in relation to age

In general, kitten (≥ 6 months- 1 year) and young (>1- 2 years) cats had higher parasitic prevalence (100%) than the adult cats (>2- 3 years) (prevalence 81.82%). The highest intensity rate was found in young cats (74.4 \pm 85.6) followed by kitten (57 \pm 71.5) and adult (53.2 \pm 58.7) cats and it was statistically significant for all ($p < 0.05$) (Table 3).

Comparative prevalence of parasites in relation to sex of hosts

In the present study, 16 male cats and 14 female cats were examined. Among them, 15 males (93.75%) and 14 females (100%) were infected. But the intensity was higher in male (97.2 \pm 100.6) than in female (88 \pm 117.3) and it was statistically significant ($p < 0.05$) (Table-4). In male hosts, parasites which had high prevalence rate were -*Capillaria* spp. (93.75%), *Trichuris vulpis* (93.75%) and *Toxocara cati*

(75%). Parasites which had high prevalence rate in females were - *Trichuris vulpis* (100%), *Capillaria* spp. (85.71%) and *Toxocara cati* (78.57%). In general, these three parasites had higher prevalence rate in both male and female hosts. The lowest prevalent parasites were *Hymenolepis nana* and *Diphyllobothrium latum* (18.75%) in male hosts and *D. latum* (7.14%) in female hosts (Figure 3).

Overall prevalence of parasites in cats in relation to seasons

Prevalence of parasites in pet cats was highest in winter (100%) and summer (100%), followed by in monsoon (83.33%). The intensity of parasites was highest during summer (116.5 \pm 109.5) and lowest in monsoon (54 \pm 32.2) and all of the differences were statistically significant ($p < 0.05$) (Table-5).

Table 3-Age related prevalence of parasites in pet cats

Age of hosts	Total no. of host	No. of host infected	Prevalence in infected hosts (%)	Egg/gm or oocyst/gm.	Intensity \pm SD	P value
Kitten (≥ 6 - 1 year)	7	7	100	855	57 \pm 71.5	0.019
Young (>1- 2 year)	12	12	100	1116	74.4 \pm 85.6	0.003
Adult (>2 - 3 year)	11	9	81.82	798	53.2 \pm 58.7	0.046

Table 4 – Overall prevalence of cat parasites in relation to sex

Sex of hosts	Total no. of host	Total no. of infected host	Prevalence in infected hosts (%)	Egg/gm or oocyst/gm.	Intensity ± SD	P value
Male	16	15	93.75	1458	97.2±100.6	0.002
Female	14	14	100	1320	88±117.3	0.001

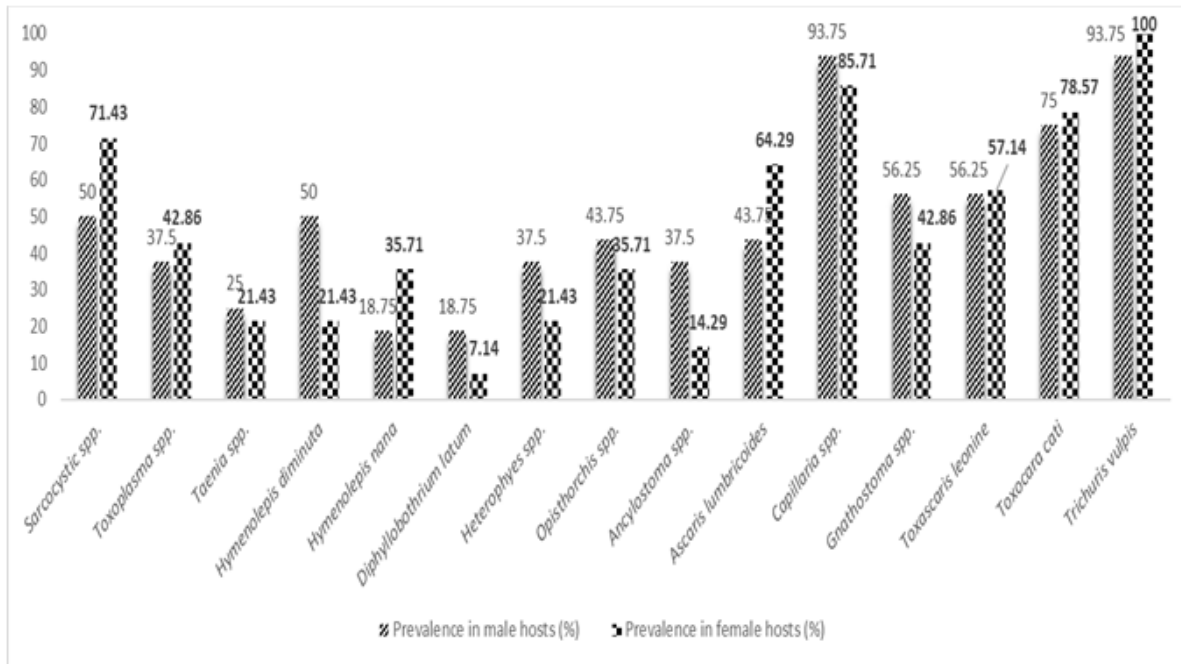


Figure 3: Parasitic assemblage in cats in relation to the sex of host

Table 5- Overall prevalence of parasites in cats in relation to seasons

Seasons	Total no. of host	No. of infected host	Prevalence in infected hosts (%)	Egg/gm or oocyst/gm.	Intensity ± SD	P value
Summer	11	11	100	1282	116.5±109.5	0.004
Monsoon	9	8	88.89	432	54±32.2	0.032
Winter	10	10	100	1077	107.7±92.7	0.006

was- 22.3±13.5, 21.6±9.3 and 20.2±7.2, respectively (Table-6).

Prevalence and intensity of parasites in cats in Summer (March to May)

During summer, 15 species of parasites were found. Among them highest prevalence (100%) and intensity (13±4.5) was observed for *Sarcocystis* spp. Other parasites with high prevalence were – *Capillaria* spp., *Toxascaris leonina* and *Trichuris vulpis* (Prevalence 90.91%). Parasites which had high intensity rate were-*Capillaria* spp., *Gnathostoma* spp. and *Trichuris vulpis* and the rate

Prevalence and intensity of parasites in cats in Monsoon (June to October)

During monsoon, about ten species of parasites were found but the prevalence was comparatively lower than in summer and winter. Among them *Trichuris vulpis* and *Capillaria* spp. had highest prevalence rate (88.89%). *Ascaris lumbricoides* had the highest

intensity rate (13.3±4.9) and its prevalence rate was 77.78% (Table- 7).

Prevalence and intensity of parasites in cats in winter (December to February)

During winter, prevalence and intensity rate of parasites were very high. Out of fifteen different types of parasites, *Capillaria* spp. had the

highest prevalence (100%) with an intensity of 18.9±8.4. *Sarcocystis* spp. had the highest intensity (39.4±9.9) with a prevalence rate of 80%. Other parasites with high prevalence rate were *Trichuris vulpis* and *Toxocara cati* (90%). Parasites which had high intensity were - *Trichuris vulpis*, *Gnathostoma* spp., *Ascaris lumbricoides* and *Toxocara cati* (21.3±11.1, 16.5±10.9, 13.5±6.4 and 11.3±7.6 respectively) (Table- 8).

Table 6- Prevalence of parasites in cats in summer

Name of the parasites	Total no. of host	No. of host infected	Prevalence in infected hosts (%)	Egg/gm or oocyst/gm	Intensity± SD
<i>Sarcocystis</i> spp.	11	11	100	390	35.5±10.7
<i>Toxoplasma</i> spp.	11	6	54.55	54	9±2.7
<i>Taenia</i> spp.	11	3	27.27	9	3±0
<i>Hymenolepis diminuta</i>	11	4	36.36	24	6±0
<i>Hymenolepis nana</i>	11	3	27.27	15	5±1.7
<i>Diphyllobothrium latum</i>	11	1	9.09	3	3±0
<i>Heterophyes</i> spp.	11	3	27.27	24	8±1.7
<i>Opisthorchis</i> spp.	11	5	45.45	42	8.4±2.5
<i>Ancylostoma</i> spp.	11	3	27.27	9	3±0
<i>Ascaris lumbricoides</i>	11	7	63.64	57	8.1±2.3
<i>Capillaria</i> spp.	11	10	90.91	223	22.3±13.5
<i>Gnathostoma</i> spp.	11	5	45.45	108	21.6±9.3
<i>Toxascaris leonina</i>	11	10	90.91	57	5.2±2.4
<i>Toxocara cati</i>	11	7	63.64	45	6.4±2.1
<i>Trichuris vulpis</i>	11	10	90.91	222	20.2±7.2

Table 7 - Prevalence of parasites in cats in monsoon

Name of the parasites	Total no. of host	No. of host infected	Prevalence in infected hosts (%)	Egg/gm or oocyst/gm.	Intensity ± SD
<i>Sarcocystis</i> spp.	9	0	0	0	0
<i>Toxoplasma</i> spp.	9	0	0	0	0
<i>Taenia</i> spp.	9	2	22.22	6	3±0
<i>Hymenolepis diminuta</i>	9	0	0	0	0
<i>Hymenolepis nana</i>	9	0	0	0	0
<i>Diphyllobothrium latum</i>	9	1	11.11	3	0
<i>Heterophyes</i> spp.	9	5	55.56	30	6±2.1
<i>Opisthorchis</i> spp.	9	6	66.67	36	6±1.9
<i>Ancylostoma</i> spp.	9	0	0	0	0
<i>Ascaris lumbricoides</i>	9	7	77.78	93	13.3±4.9
<i>Capillaria</i> spp.	9	8	88.89	90	11.3±3.8
<i>Gnathostoma</i> spp.	9	4	44.44	24	9.6±8.3
<i>Toxascaris leonina</i>	9	3	33.33	24	8±3.5
<i>Toxocara cati</i>	9	7	77.78	51	7.3±2.9
<i>Trichuris vulpis</i>	9	8	88.89	81	10.1±4.5

Table 8 - Prevalence of parasites in cats in winter

Name of the parasites	Total no. of host	No. of host infected	Prevalence in infected hosts (%)	Egg/gm or oocyst/gm	Intensity± SD
<i>Sarcocystis</i> spp.	10	8	80	315	39.4±9.9
<i>Toxoplasma</i> spp.	10	6	60	54	9±1.9
<i>Taenia</i> spp.	10	1	10	3	3±0
<i>Hymenolepis diminuta</i>	10	3	30	18	6±3
<i>Hymenolepis nana</i>	10	6	60	33	5.5±1.2
<i>Diphyllobothrium latum</i>	10	2	20	6	3±0
<i>Heterophyes</i> spp.	10	1	10	6	6±0
<i>Opisthorchis</i> spp.	10	2	20	12	6±0
<i>Ancylostoma</i> spp.	10	3	30	9	3±0
<i>Ascaris lumbricoides</i>	10	2	20	27	13.5±6.4
<i>Capillaria</i> spp.	10	10	100	189	18.9±8.4
<i>Gnathostoma</i> spp.	10	6	60	99	16.5±10.9
<i>Toxascaris leonina</i>	10	3	30	12	4±1.7
<i>Toxocara cati</i>	10	9	90	102	11.3±7.6
<i>Trichuris vulpis</i>	10	9	90	192	21.3±11.1

4. DISCUSSION

Cats are felids that has been gaining increasing popularity in urban culture of Bangladesh as pets. The current study aimed to determine the parasitic prevalence among cats from a central pet market from Dhaka, Bangladesh from where a lot of people buy their household companions. It is important to note that zoonotic diseases or diseases that can spread from animal to human is becoming alarmingly common now a days and these pets can act as a risk factor for close contact contamination. Although in popular western culture, pets are thoroughly examined and vaccinated before taking in, Bangladeshi people are less aware of the danger of handling pets without proper care and thus are more prone to the risk of diseases. Besides, high parasite infestation in pet cat results in poor health of the animal which can cause several diseases to them as well.

In the present study, 28 out of 30 cats (93.33%) were infected by different species of parasites and they were infected by fifteen different species of parasite of zoonotic importance. Previous studies from Bangladesh and other countries have reported that cats harbour high number of parasites but the prevalence and intensity of infestation varies upon geographical region, care given to the pets and vaccination rate. Two separate studies in Bangladesh showed 100% tested cats were infected with

either one or more parasites (Rahman, 2007). But in cats of western countries, parasites were less prevalent; 18.4% in Australian cats (Palmer et al. 2008), 8.6% in tested cats of Perth (McGlade et al., 2003). Other studies include: Barutzki and Schaper (2011) who found 22.8% prevalence in cats in Germany, Becker et al., (2012) found 33.6% feline were infected with different protozoan and helminth parasites. 15 different species were identified from the fecal sample of the infected cats in the present study. Significant prevalence was found for *Trichuris vulpis* (93.33%), *Capillaria* spp. (90%), *Toxascaris leonina* (76.67%), *Toxocara cati* (73.33%), *Sarcocystis* spp. (60%), *Toxoplasma* spp. (60%) and *Ascaris lumbricoides* (50%). *Sarcocystis* spp. had the highest intensity rate (37±15) followed by *Capillaria* spp. (16.4±10), *Gnathostoma* spp. (15.4±12) and *Ascaris lumbricoides* (11.2±8). Similar parasites were also observed in previous studies but with different prevalence rate. For example, Samad (2011) found *Toxoplasma gondii* (prevalence 9.09%), *Gnathostoma spinigerum* (40.0%), *Diphyllobothrium latum* (13.3%), *Toxocara cati* (45.45%) and *Ancylostoma tubaeforme* (36.36%). While Rahman (2007) found *Toxoplasma gondii* (14%), *Sarcocystis* sp. (8%), *Toxascaris leonina* (14%), *Toxocara cati* (53%), *Ancylostoma tubaeforme* (75%), *Opisthorchis feineus* (83%) and *Taenia taeniformis* (11%).

Studies in western countries also showed high to moderate prevalence of *Toxocara cati*, *Trichuris* spp., *Toxascaris leonina* and *Ancylostoma* spp. (Sommerfelt et al., 2006; Labarthe et al., 2004; Calvete et al., 1998; Overgaauw, 1997).

According to age group of hosts, kitten (≥ 6 months- 1 year) and young (>1 - 2 years) cats had higher parasitic prevalence (100%) than the adult cats (>2 - 3 years) (prevalence 81.82%). The highest intensity was found in young cats (74.4 ± 85.6) followed by kitten (57 ± 71.5) and adult (53.2 ± 58.7) cats and it was statistically significant for all ($p \leq 0.05$). Similar observation was noted in previous studies (Gates and Nolan, 2009; Lorenzini et al., 2007; McGlade et al., 2003; Spain *et al.*, 2001). This may be due to the lack of immune response in young cats. During 6 months to 1 year, kittens might have been protected by maternal antibodies but during 1-2 years of age, they are more prone to diseases as immune system is not as developed as adult cats (>2 -3 years). This is a concerning risk factor for human health as most pet owners usually prefer kittens and young cats over adult cats.

In the present study, 16 male cats and 14 female cats were examined. Among them, 15 males (93.75%) and 14 females (100%) were infected. But the intensity was higher in male (97.2 ± 100.6) than in female (88 ± 117.3). However, previous studies have reported that sex of host had no significant effect on infection either in Bangladesh (Rahman, 2007) or in Spain (Calvete et al., 1998).

The current work suggested that the prevalence of parasites in pet cats was highest in winter (100%) and summer (100%), followed by in monsoon (83.33%). The intensity of parasites was highest during summer (116.5 ± 109.5) and lowest in monsoon (54 ± 32.2). That means the cats that are sold during summer and winter may have more parasitic infestation than those sold in monsoon. The higher atmospheric temperature during summer season may act as an important factor for the release of larvae from the parasites' egg and during winter, the cats may be in close proximity to each other to be able to infect others. But during monsoon, heavy rainfall may have affected the rate of spread of infective eggs and larvae as rainfall

may wash away any residual eggs thus not being able to contaminate other hosts' food.

Several studies from abroad have observed the effect of seasons on the prevalence of cat parasites and they have reported similar findings. Lorenzini et al. (2007) found the highest prevalence (27.6%) in cats during summer in Porto Alegre, Rio Grande do Sul, Brazil. De Santis-Kerr et al. (2006) estimated that the prevalence of parasites was 1.4% in cats which increased during summer, fall and spring compared to winter. Calvete et al. (1998) also found that seasons had significant effect in parasite infestation in cats from Spain.

In the present study, the commonly found parasites with high infestation rate regardless of age, sex of the host and seasons were *Trichuris vulpis*, *Capillaria* spp, *Toxascaris leonina* and *Toxocara cati*. *T. vulpis* is a commonly found whipworm (Nematode) in tropical areas and have been often associated with human zoonotic infection named visceral larva migrans (VLM). This can present with pulmonary symptoms and are more documented in children (Masuda et al, 1987). *Capillaria feliscati* is a nematode residing in the urinary tract of cats and has been associated with lower urinary tract disease in cats (Conboy, 2009). Another *Capillaria* sp.; *C. philippinensis* has been associated with severe intestinal disease and death in several countries of Southeast Asia (Saichua et al., 2008). *T. cati* and *T. leonina* are commonly found roundworms (ascaris nematodes) in cats. *T. cati* is more commonly encountered than *T. leonina* and can be considered as a zoonotic risk factor for human (Rodan and Sparkes, 2012). Another important finding was moderate prevalence of *Toxoplasma* sp. (60%) which is dangerous for pregnant women and cause congenital problems in the unborn fetus.

This study provided a detailed outline of the parasite infestation rate of cats from a major pet market in Dhaka city which gave us an idea of the common pattern of parasite infestation according to age, sex of the host and associated risk factors for the pet owners. The findings should be useful for creating awareness among common people before getting a pet from a market.

5. CONCLUSION

Cats are common pets in rural areas of Bangladesh and becoming increasingly popular among urban people. As urban dwellers live indoors and cats have close emotional bonding with city dwellers, there should be mass awareness about handling pets specially among pregnant women and children. Proper care should be taken in markets to avoid infestation of parasites among cats and vaccination of pets prior to selling them to common people should be mandatory to avoid health hazards.

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