

# **RESEARCH PAPER**

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# Performing monkeys in Bangladesh: Monkey acquisition, rearing practices and human-monkey interactions

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# Abstract

The study on performing monkeys has been conducted at the largest monkey performer's village at Kashipur of Jhenaidah district between August 2012 and June 2014. Field observations along with a pre-designed questionnaire survey were conducted among the 228 monkey performers with their families. This study revealed about 5000 performing monkeys which were trained to perform in road-side gatherings or street show to earn their livelihoods in this community. Rhesus macaque (*Macaca mulatta*) was the mostly used species (88%) followed by Pig-tailed macaque (*Macaca leonina*) which is 9% and Assamese macaque (*Macaca assamensis*) consists of 3%. Among six age-sex categories, adult male was used widely (54.15%) followed by adult female (22.93%) and sub-adult male (10.24%) for performance. Monkey performers catch monkey from the wild. The number of monkey individuals owned by each family varied from 1 to 6 with the mean 1.79  $\pm$  1.02. During the harsh training procedure many monkeys (n=6) could not survive. Monkey performers and their family members have a frequent contact with the monkeys during handling, sharing food and training with monkey performance. As a result, monkey owners (42.5%) were bitten and the children (11.5%) were bitten as well while play with their monkeys. Most of the monkey performers (97.8%) did not take care of the wound even did not wash the wound after bitten which can increase the risk of bidirectional disease transmission.

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#### Introduction

Five species of macaques are found in Bangladesh of which four species, Macaca leonina, Macaca fascicularis, Macaca arctoides, Macaca assamensis, are distributed only in the northeastern and southeastern hill areas. In contrast, Rhesus macaques are distributed throughout the country both in all types of forests and urban areas (Hasan et al., 2013). They are synanthropic, thriving in human-altered environments, including urban areas and play a significant role in the culture and traditions of some communities (Teas et al., 1980; Richard et al., 1989; Southwick et al., 2005). Monkey species those have been using to perform different acrobats in street show or other gatherings are known as performing monkey and groups of people who train the monkey and use them to perform in street show or any other gatherings to earn their livelihood, are known as monkey performers. Monkey performers are usually semi-nomad people; they collect monkeys from wild in different parts of the country and train them for acrobats.

Macaques, especially the Rhesus Macaque, and African Green Monkeys are widely used animal model, either wild-caught or purpose-bred (Kyes *et al.*, 2006). Monkeys are prevalent in numerous books, television programs, and movies. Moreover, performing monkeys has a rich European history. There is long history to use monkeys by the travelers. Monkeys also used in circuses. Monkeys took the place in European arts (Boon, 1990). In America usually new world monkeys and apes are used for entertainments. These primates are used as a pet, showing different acrobats in different shows (Wolfe, 2003).

Although performing non-human primates (NHPs) are encountered throughout the world, Asian cultures have perhaps the longest and most vibrant tradition of using NHPs for entertainment. In Japan, a thousand-year history of training performance monkeys (*Macaca fuscata*) continues today through the Suo-Sarumawashi (Japanese Monkey Performance) (Sebeok, 1986; Hirasaki *et al.*, 2004).

Not surprisingly then, in China, urban performing monkeys are a common site, drawing large crowds of onlookers (Lai, 1993). Monkeys also play a very important role in the Hindu culture. It is common to see monkey performing on the streets or near the beaches during certain Hindu festivals (Fuentes, 2006). Thailand has a deep tradition of training M. leonina as coconut picking monkeys, so it is not uncommon to see these extremely dexterous monkeys performing their tricks on the streets. Similar training schools can be found throughout South and Southeast Asia (Bertrand, 1967; Ratnambal, 2007). Masked Monkey or "Topeng Monyet" is a traditional play or performance in Indonesian villages involving performing monkeys with their handlers and usually finishing with a snake act or two (Schillaci et al., 2006).

In Bangladesh, monkey performers move one place to another place with carrying the performing monkeys on their back and use them to entertain the people especially, to show gymnastic perform. This intimate interaction of human with monkeys could transmit many zoonotic pathogens including Simian Foamy Virus (SFV) which is highly prevalent and can efficiently transmit through saliva among rhesus macaques (up to 100% of free ranging macaques are infected by age 3) (Jones-Engel et al., 2007). SFV replicates actively in the oral mucosae of infected monkeys, achieving high concentrations in saliva (Murray et al., 2006). Non-human Primates (NHP) to human transmission of SFV is thought to occur most commonly through bites. It was evident that the traveling of monkey performers with their monkeys and their frequent release of monkeys in nearby habitats played a vital role for the transmission of SFV among humans in Bangladesh (Feeroz et al., 2013). In this study, the population status of performing monkeys, their sources, health condition and the contexts of human-macaque contact were investigated which will ultimately help to understand the contribution of demographic variables to the likelihood of retroviral transmission among the people in this region. Considering this scenario, the study was focused to assess the performing monkey

population, monkey acquisition, rearing practices and human-monkey interactions in Bangladesh.

#### Materials and methods

Field observations along with a pre-designed questionnaire survey were conducted among the 228 monkey performer families. Among them, some families were identified at their road side semisedentary tents and were interviewed after confirming their origin of living at Kashipur village. Data were collected under 6 broad categories including 48 major questions. Face to face interviews by using the questionnaire incorporated information on monkey acquisition process, source of the monkeys, monkey rearing practices, health status of the monkeys, common sickness in monkey population, and so on. Survey on performing monkey population was carried out by visual observations and total population was estimated from the questionnaire data. Monkey species, age-sex and physical status and other demographic features of individual monkey were also recorded. Age-sex category of monkey population was recorded as adult male, adult female, sub-adult male, sub-adult female, juvenile and infant (Hasan et al., 2013).

#### Results

## Performing monkey population

It was evident that around 5000 performing monkeys are kept in captivity. During the study a total of 410 performing monkeys were found with 228 monkey performers. Three species of macaques, viz. Rhesus macaque (Macaca mulatta), Assamese macaque (Macaca assamensis) and Pigtailed macaque (Macaca leonina) were used for the performance. Rhesus macaque (88%) was the mostly used species followed by Pig-tailed macaque (9%) and Assamese macaque (3%). Monkey performers commonly prefer to use adult individuals (77.07%) as they look attractive. Adult male was the highest used (54.15%) individual for this purpose; followed by adult female (22.93%) and sub-adult male (10.24%) (Fig. 1). Juveniles and infants were not used for the performance but monkey performers usually carry these individuals

with them for training purposes and also to attract attention of the people.



**Fig. 1.** Age-sex composition of performing monkeys in Bangladesh

More than half (50.97%) of the Rhesus macaque used for the monkey performance was adult male. Adult females were the second highest (24.10%) followed by sub-adult male (10.53%) and sub-adult female (7.48%). In addition, Pig-tailed macaque was the second most used species for performance and adult male (73.68%) was also the preferable individual for this purpose. The least used species for monkey performance was Assamese macaque. Only adult males (90.91%) and few females (9.09%) were used for this purpose.

The number of performing monkey owned by each performer family varied from 1 to 6 with the mean  $1.79 \pm 0.99$ . Most of the monkey performers (50%) of this community had single monkey followed by two (29.4%), three (13.2%), four (6.1%) and only few monkey performers (1.3%) had more than four monkey individuals at a time. Total number of monkey individuals owned by a monkey performer's lifetime varied from a single individual to 25 individuals. About 25% monkey performers had a single monkey individuals (23.2%), 3 individuals (11.8%), 4 individuals (11.4%), 5 individuals (6.1%) and 6 to 10 individuals (14.9%). Only 7.5% monkey performers had more than 10 individuals in their lifetime.

#### Monkey acquisition

Monkey performers mainly collect monkeys from three sources, (i) catch monkey directly from the wild, (ii) buy monkey from the people who catch monkeys from the wild and (iii) buy monkeys from their monkey performing groups. They usually keep secret the exact source of monkey collection. Most of the monkey performers inherited monkeys (77.7%) from their father and these monkeys were collected from forest areas which includes Khulna (Sundarbans) (25.2%), Sylhet (17.8%), Madhupur (11.5%), Barisal (16.7%), Dhaka (9.3%), Dhamrai (7.9%) and Madaripur (6.8%) where monkeys coexist with human in urban settlements. Few monkeys were also bought from India (3%) and Myanmar (1.6%) (Fig. 2).



**Fig. 2.** Location of wild monkey collection mentioned by the monkey performers

#### Monkey rearing practices

Most of the owners (89.9%) trained their monkeys to perform different tricks while expert trainers (10.1%) of the community also trained the monkeys. To look attractive, almost half of the owners (45.3%) used different ornaments like ear-rings, wrist-rings, chains, caps etc. and others used human hair dye to paint their monkeys (24.8%) or dancing clothing (29.9%). It is too tough to train different tricks to monkeys. For this reason, the monkey owners (32.4%) gave very harsh punishment to the untrainable monkeys and removing teeth was also done by the monkey owners (6.6%) during training period. They (57.9%) commonly sold their untrainable monkeys to other people while some of them (1.9%) released untrainable monkeys to the nearest forests or other monkey populations in urban areas. Moreover, few of them (1.2%) killed their untrainable monkeys. About 89% monkey owners mentioned that they sold their monkeys both within the performing group and outside of the group. Only

8.3% monkey owners sold monkeys within their performing group and only 2.6% monkey owners sold monkeys outside of performing group.

Most of the monkey performers (96%) shared the same food with their monkeys because of poor income to buy foods and only few of them (4%) buy or prepare separate monkey foods.



**Fig. 3.** Unhygienic and rotten food provided to the performing monkey

**Table 1.** Monkey food provided by the monkey performers

Name of the monkey food	% of owner provided the
	food
Milk	19.3
Rice	96.1
Banana	83.8
Vegetables	82.5
Pother human food	60.5
Bread	62.3
Peanut	1.8

**Table 2.** Kinds of monkey sickness among the performing monkey population

Name of the diseases	% of the monkey
Coughing	13.8
Diarrhoea	23.2
Dysentry	24.1
Fever	13.2
Aphasia	8.8
Shading	9.4
Weakness	7.4

Monkey food mostly consists of rice, banana, vegetables and bread (Table 1). Sometimes rotten leftover food was also provided by the monkey performers in unhygienic condition (Fig. 3) and as a result, monkeys had been suffering from common gastrointestinal diseases like Dysentery (24.1%) and Diarrhoea (23.2%); Fever (13.2%) and coughing (13.8%) were also evident (Table 2). In such cases, monkey performers mostly depended

on their own herbal medicine (44.7%), some common medicines were prescribed by themselves (38.6%) and few were prescribed by the doctors (16.7%) in severe condition (Table 3). Casualty of sick monkeys occurred regularly. Most of the monkeys died of Dysentery (27.3%), complex unknown diseases (26.6%) and Coughing (23.8%). Vaccination practice for performing monkeys is very poor. As the street dogs have aggressive interaction to the monkeys, monkeys often been bitten by the dogs. Only bitten monkeys (22.3%) got rabies vaccine and very few monkeys (1.9%) got tetanus vaccine when they became severely injured.

**Table 3.** Treatment of monkey bite among the monkey performer community

% of victims
2.2
30.0
4.8
7.0

Small wooden boxes (2 feet  $\times$  2 feet  $\times$  2 feet) were used to keep the monkeys inside while staying at the camp sites. Most of the monkey performers (94%) used the small box where monkeys (21.1%) were kept overnight inside this box, followed by monkeys (43.1%) for 2 to 3 hours, 27% for 3 to 6 hours and 8.8% for 6 to 10 hours to keep monkeys safe while the rest of the monkey performers (6%) used jute sacs for this purpose.

Usually, the lifespan of monkeys in captivity is about 25-30 years depending on good care of them (Groves *et al.* 2024). Some of the monkey owners (8%) took good care of their monkeys and their monkeys looked healthy while most of the monkey owners (92%) did not take proper care and these monkeys looked sick and skinny. By interviewing the monkey performers, it has been found that monkeys (47.4%) survived for 11 to 20 years, followed by monkeys (20.2%) survived for 21 to 30 years, monkeys (16.7%) for 10 years and few of them (15.7%) survived more than 30 years. As the monkey owners do not allow to breed their monkeys, the number of monkey individuals does not increase substantially. Only 1.22% females of the monkey community were found with baby.

#### Human-monkey interaction

Monkey performers were in very close contact with their monkeys during handling, sharing food, water, monkey performance or in any other ways. Among 228 monkey performers, most of the performers (42.5%) have been bitten almost every day, followed by 25.4% performers once within 10 days, 12.7% performers once within 15 days and 19.3% performers once within 20 days. Moreover, children in this community had intimate interaction with monkeys while playing with monkeys or feeding them. Children (34.5%) had regular contact with their monkeys among which 11.5% were bitten regularly, 30.3% were bitten frequently and 23.7% were scratched. However, most of them (97.8%) did not wash the wound after got bitten. Only 4.8% patients went to the doctor after severe bite. It was also evident that there were very few chances of interaction among the performing monkeys and with other animals except street dogs. Mostly dog (44.7%) had very aggressive interaction with monkeys.

### Discussion

In South Asia as well as in Bangladesh, monkey performers have a centuries-old tradition to train and use monkeys to perform different acrobats in road-side gatherings or street shows which allow them to earn their livelihoods and entertain people. A significant number of monkeys are being reared in captivity by the monkey performers (Hasan *et al.,* 2013).

Monkey performers are usually semi-nomadic people. Around a half-million people are directly involved in the monkey performing profession to earn their livelihood (Maksud and Rasul, 2006). They collect the monkeys from different parts of the country and retain these monkeys in unhygienic condition. They roam throughout the year but more frequently during the harvesting season or any festival to trade their services in villages (Khan, 2003). It was evident that both human-facilitated movement of macaques leading to the introduction of non-resident strains of SFV and retroviral recombination in macaques contribute to SFV diversity among humans in Bangladesh (Engel *et al.*, 2013). In Bangladesh nonhuman primate (NHP)-borne viruses like Simian Foamy Virus (SFV) was found to transmit between monkey and human (Engel *et al.*, 2013). In this perspective, it is high time to investigate the possible mode of the surveillance study of zoonotic disease transmission among the monkey performers and their monkeys.

Rhesus macaques were mostly found to use for monkey performance because of their wide distribution throughout the country both in forests and inside human settlements, have close vicinity to human; comparatively easier to collect than other monkey species. Moreover, they are synanthropic; thriving in human-altered environments, including urban areas, and play a significant role in the culture and traditions of some communities (Hasan et al., 2013). They are non-seasonal breeders and, although some have labeled them "weed species" in recognition of their ability to live in densely populated urban areas (Teas et al., 1980; Richard et al., 1989; Southwick et al., 2005). However, Pig-tailed macaque is quite harder to catch from the wild and Assamese macaque is one of the rare monkey species in Bangladesh and population is relatively low (Hasan et al., 2022).

The ownership of the total monkey individuals in a monkey performer's lifetime was relatively high. Monkey performers always keep their monkeys in close conditions (in a box or tied with a chain under tree). In captive condition, mortality rate is high due to depression, poor feeding and health care. Social isolation is a major risk factor for the development of depressive illness. In a study, it was noted that adult male rhesus monkeys housed individually exhibited a hunched, depressive-like posture (Hennessy *et al.*, 2014). Moreover, they do not allow their monkeys to breed, as they cannot use a pregnant monkey for performance. These may be the reasons for getting a high number of monkeys in their lifetime. Due to the addiction to drug or gambling, when they loss everything they do sale the monkey to another group. Trained monkeys have a great demand; this is another reason of handing over the monkeys. Monkey performers often sale their monkeys to other monkey performers of the same group or outside groups during financial crisis or changing their occupation. Usually trading of trained monkey occurs within the group and trading of untrainable monkey goes for both within and outside group. Sometimes, the owner sells the monkey to the person who gives more money regardless of the group.

Monkey performers are socially marginalized and low-income group of people who rear their monkeys with a very low cost. It is very difficult for a monkey owner to buy separate monkey food with their poor income. They mostly prefer to give same food to monkeys that they cook for them. Monkey food mostly consists of rice, banana, vegetables, guava and various types of provisioned foods like chips, peanuts and bread. Similar finding was also recorded in a human-habituated rhesus group at Charmuguria of Madaripur district (Hasan and Hakim, 2023). Children also like to share their food with monkeys. They often give food to monkeys in a very unhygienic condition and also provide rotten food in front of monkeys which cause very frequent gastrointestinal problems to the monkeys. They may get huge intestinal parasitic load from the unhygienic environment which may cause chronic diarrhea or dysentery. In a study, it was evident that pulmonary and gastrointestinal diseases are the most prevalent among the issues that captive monkeys face, including clinical signs of loss of appetite, gradual weight loss, weakness, dehydration, depression, breathing difficulty, and mild nasal discharge (Prank et al., 2024). The monkey died due to the pulmonary anthracosis which indicated that air quality was poor in that habitat and may pose a health risk to wild animals and humans (Prank et al., 2024). Performing monkeys mainly die with the complexity of multiple diseases those show similar symptoms. Most of the time monkeys stay under open sky at the road-side camps in a wooden box or tightened by a rope which may be the reason for getting such symptoms by air

pollution. Therefore, further study is recommended to confirm the issues. Due to the improper or no treatment at the beginning of the sick animals, they become weak and also suffer from the malnutrition. If the sickness continues for a long time the owner becomes hopeless about the cure of that monkey and waits for its death. Out of 410 monkey individuals encountered, 8 were found severely sick and waiting to die. Getting a healthy and disease-free monkey is rare in this community.

Sometimes they also die due to hard punishment. If the monkey is untrainable or still too aggressive, the monkey owners or trainers apply harder and harder punishment like repeated beating, starvation and teeth removal to the monkeys. Many of the monkeys get severe injury which ultimately causes death. Sometimes they do not provide any food to the monkeys to make them weak and wait to die. Usually trading of these untrainable monkeys goes for both within and outside group and trading of trained monkey occurs within the group. In a rare case when they loss all the interest to the untrainable monkey they release it to the nearest monkey population. They may directly catch monkey from different forests and urban areas or buy from the agents who catch monkeys. They mainly prefer to collect monkeys from monkey populations close to their village. In the present study, collecting monkeys from Sundarbans (Khulna) which is the closest part of the study area and also from India and Myanmar was evident. Similar findings were also reported in a molecular study (Hasan et al., 2016). In a previous study it has been reported that the performing monkey owners often trapped monkeys in the Sundarbans (Khulna) and occasionally, a performing monkey would escape or be released in a village where they were performing. This finding suggests that human activity is also responsible for the presence of NHPs SFV strain in humans from other regions of Bangladesh (Engel et al., 2016).

Monkey performers with their children in this community have very close interaction with monkeys. As they keep their monkeys with them at camp site and also at their village home, the monkeys usually enter into their tent. They have been bitten and scratched almost every day by monkey during handling, training, sharing food or water, playing with them, monkey performance or in any other ways. The close interaction among the performing monkeys, and with their owners, other members, the audiences, other animals or street dogs may increase the risk of zoonotic disease transmission between human and monkeys. In a study it was found that prevalence of simian foamy virus is more among the people living with rhesus macaques in urban habitats of Bangladesh (Feeroz *et al.*, 2013). Thus, there is a chance to transmit the pathogen between them.

## Conclusion

This study represents the performing monkey husbandry practices and the context of human-monkey interactions. Though monkey performance is a centuries old tradition in Bangladesh and monkey performers earn their livelihood from this profession but it contradicts with the existing law. According to the Wildlife (Conservation and Security) Act 2012 of Bangladesh keeping performing monkeys in captivity with their owners is a punishable offence. Moreover, the close interaction of monkeys with the owners and their family members increases the risk of disease transmission. This study demands further detailed study on bi-directional disease transmission between performing monkeys and their owners.

#### Recommendations

A separate management plan is required to secure the health and fate of these performing monkeys in Bangladesh. Monkey performers need to encourage for changing their profession for the sake of human health and monkey conservation. Government and nongovernmental organizations (NGOs) should take necessary steps for alternative income generation for monkey performers' community. Further, capturing of monkeys from the wild and expansion of this profession should be stopped through awareness building and law enforcement.

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