

## MAN-MONKEY CONFLICT IN URBAN SPACE: A CASE STUDY OF JIND CITY

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### How to cite this paper:

Riya, Priya and Manjit (2024)  
Man-Monkey Conflict in  
Urban Space: A Case Study  
of Jind City, Journal of Global  
Resources, Vol. 10 (02)

### DOI:

10.46587/JGR.2024.v10i02.010

**Received:** 30 March 2024

**Reviewed:** 21 April 2024

**Final Accepted:** 18 June 2024

  
**OPEN ACCESS**  
Freely available Online  
[www.isdesr.org](http://www.isdesr.org)

**Abstract:** *Man-monkey conflict is a common problem in Jind City, Haryana, that has been persisting for many years, but until now, no detailed study has been done on man-monkey conflict. This study was conducted in Jind City, Haryana, between July and December 2023. The aim of the study was to understand the man-monkey conflict in Jind City. 200 schedules were prepared and randomly filled out in Jind City. The schedule is divided into two parts: part A, general information about respondents, and part B, respondents' opinions about the man-monkey conflict. 54 percent of respondents agree that the group size of monkeys is 15–20. 44 percent of respondents say that monkeys attack children more. Mostly, 71 percent of respondents say that monkeys cause economic loss to humans. 78.50 percent agree that monkeys are a form of God. We suggest that the area of Bir Bara Ban Conservation Reserve should be increased. As monkeys lose their natural habitat, they move towards cities. Trees should also be planted. As a result, monkeys will get food as per their requirements and will remain in the forest areas. In this way, we may reduce human-monkey conflict.*

**Key words:** Conflict, Haryana, Jind City, Man-Monkey

## **Introduction**

Today, human-wildlife conflict is a major problem all over the world. Human-wildlife conflict occurs when the interaction between humans and animals has a negative impact on humans, animals, or the environment (Mahanti P. and Kumar S. 2018). Rhesus macaques are found in 11 countries in southern and southeast Asia, namely India, Afghanistan, Pakistan, Nepal, Myanmar, Vietnam, Bangladesh, Bhutan, Thailand, and Laos (Fooden 2000). Rhesus macaques are classified as a least-concern species by the IUCN (International Union for Conservation of Nature) and are protected by Schedule 2 of the Wildlife Protection Act of 1972. Rhesus macaques are highly adaptable species and are commonly found in human settlements. But interactions between Rhesus macaques and humans are not beneficial. When the interaction between man and monkey occurs, conflict arises, affecting not only humans but also monkeys. (Agyei et al., 2019) Man-monkey conflicts are increasing because of habitat destruction, overpopulation, food provisioning by the residents, and improper waste management. Monkeys not only destroy human properties; in fact, they also attack humans (Devi, Saikia, 2008; Deb et al., 2014). Monkey populations are increasing rapidly in the absence of natural predators, and due to the increased population, man-monkey conflict occurs. Monkeys spread diseases to humans and other animals (Deb P., Rai P.K., et al. 2014). In Sri Lanka, monkeys urinate and defecate in open water, so many health issues have been reported (Cabral et al. 2018). In Haryana, people believe that monkeys are a form of God, so they feed them. As a result, monkeys are coming into human settlements, leading to conflict. Man-monkey conflict is a very serious problem in Jind City (Haryana) that has been persisting for many years, but until now no detailed study has been done on it. This research paper tries to solve the problem of the man-monkey conflict and give some appropriate solutions to the problem.

## **Study Area**

Jind town is the main headquarter of Jind district. Jind city is located in the middle of Haryana and is a part of the Punjab-Haryana plain, which is mainly flat and featureless. Its latitude is 29° 19' 12.00" N and longitude is 76° 19' 12.00" E. The climate of the city is a subtropical continental monsoon. The average maximum temperature is 41°C in May and June, or a minimum temperature of 6°C in January. Its altitude is 227 m, and the annual normal rainfall is 51.5 cm. Sandy loam soil is found in Jind City. It receives irrigation water from the Western Yamuna and Bhakra canals. Jind City is famous for Rani Talab and Bir Bara Ban Conservation Reserve. Bir Bara Ban is famous for the Rhesus macaque. Which is situated 5 km away from Jind City. The latitude of Bir Bara Ban is 29°17'30" N, and the longitude of Bir Bara Ban is 76°16'51" E.

## **Objectives of the Study**

The present study is aimed at the following objective:

The population of monkeys are growing rapidly in urban areas, leading to man-monkey conflict in Jind City. So, our main objective of the study is to understand the man-monkey conflict in urban area.

## **Database and Methodology**

To understanding the man-monkey conflict in urban areas is a new dimension for the geographical sciences. In this research, primary data has been collected from the study area. So, a schedule has been designed that has some relevant questions that highlight the conflict and relationship between man and monkey in urban areas. 200 schedules were prepared and randomly filled out in Jind City. The schedule is divided into two parts: part A, general

information about respondents, and part B, respondents' opinions about the man-monkey conflict. Some questions are given, such as, Which monkey (male or female) bites the most? Do monkeys cause physical and economic harm to humans? What is the cause of aggression in monkeys? Do you consider a monkey to be God? etc. The collected data have been arranged in tables. MS Office and MS Excel software are used to prepare the whole research paper.

**Results and Discussion**

Table 1 presents the age structure of the respondents. The total number of respondents is 200, of whom 48.5 percent are male and 51.5 percent are female. Nearly half of the respondents belong to the 20-40 age groups, which is 53 percent of the total respondents, out of which 53.6 percent are male and 52.4 percent are female. The least age group of respondents are those above 60 years old, which is only 7.5 percent of the total respondents. 31.5 percent of respondents belong to the 40-60 age group, of which 34.02 percent are male and 29.1 percent are female. 8 percent of the respondents are below 20 years old, of which 9.2 percent are male and 6.7 percent are female.

Age group	Percent of Male Respondents	Percent of Female Respondents	Total Percentage of Respondents
Below 20	9.20	6.70	8.00
20-40	53.60	52.40	53.00
40-60	34.02	29.10	31.50
Above60	3.09	11.60	7.50
Total	48.50	51.10	100

**Table 1: Age Structure of Respondents**

Source: Field Survey 2023

**Figure 01: Age Structure of Respondents**

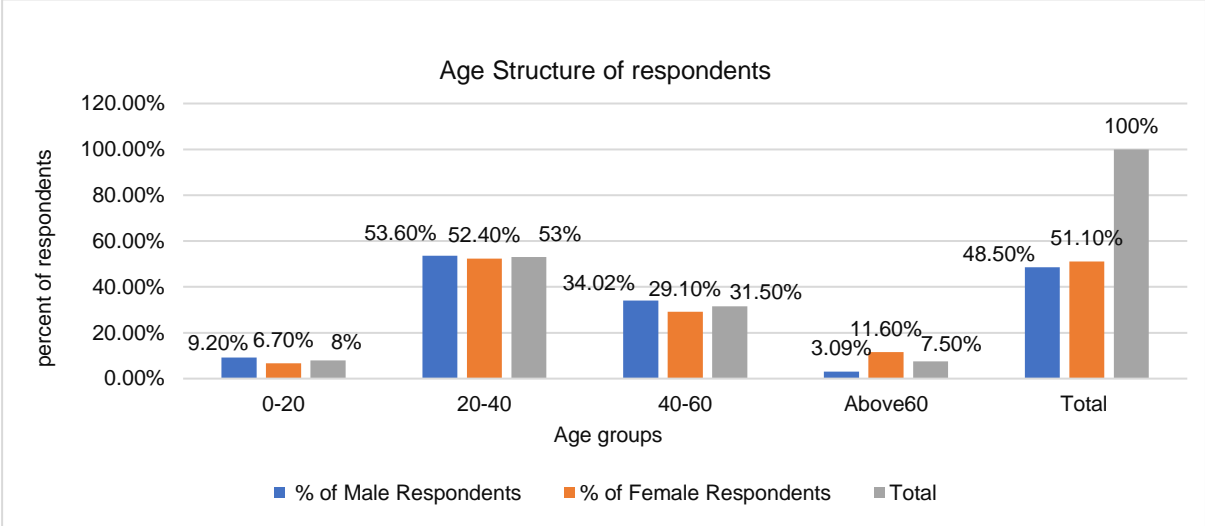


Table 2 shows the literacy rate of respondents. Only 15.5 percent of respondents are illiterate of the total respondents. 27 percent of respondents have primary education. 6 percent of people got only secondary education; 14 percent of people have completed senior secondary education. 19.5 percent are graduates; similarly, 12 percent are postgraduates. (See Table 2).

**Table 02: Education Status of Respondents**

Education	Number of Respondents	Percentage of Respondents
Primary	54	27.00
Secondary	12	6.00
Sr. Secondary	28	14.0
Under-Graduation	39	26.0
Post-graduation	24	12.00
Other	12	6.0
Illiterate	31	16.00
Total	200	100

Source: Field Survey 2023

**Figure 02: Education Status of Respondents**

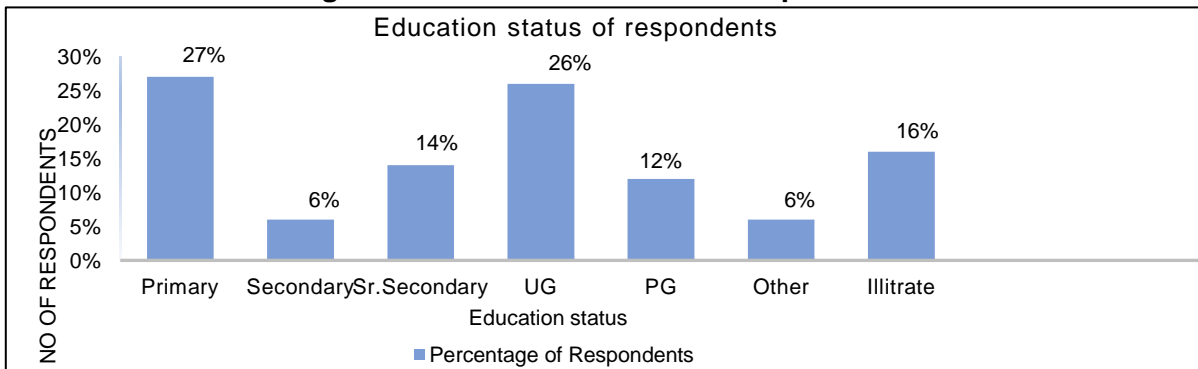


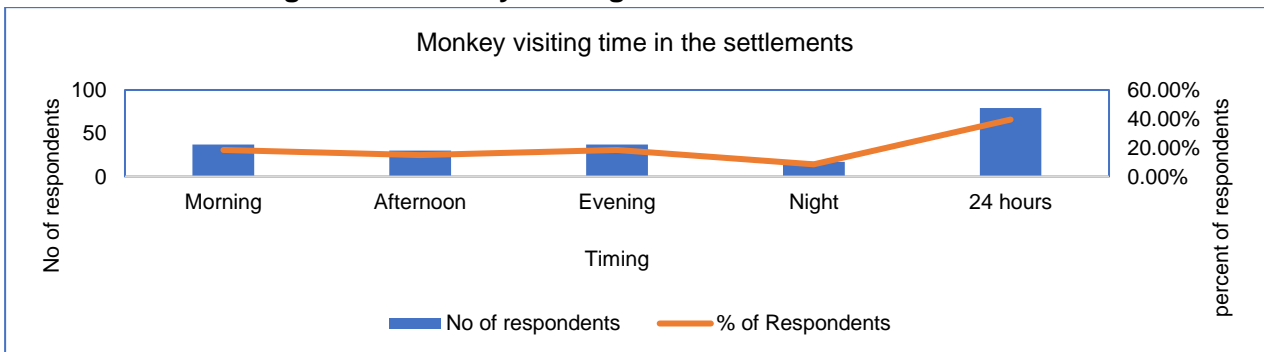
Table 3 shows that 18.5 percent of respondents say that monkeys are coming to their areas in the morning, and similarly, 18.5 percent say that they come in the evening to their areas. And 15 percent of respondents say that they come in the afternoon. Only 8.5 percent agreed that monkeys come to their areas at night. However, 39.50 percent of respondents claimed that they were present in their areas the whole day.

**Table 03: Monkey visiting Time in the Settlements**

Time	No. of Respondents	Percent of Respondents
Morning	37	18.50
Afternoon	30	15.00
Evening	37	18.50
Night	17	8.50
24 hours	79	39.50
Total	200	100

Source: Field Survey 2023

**Figure 03: Monkey visiting Time in the Settlements**



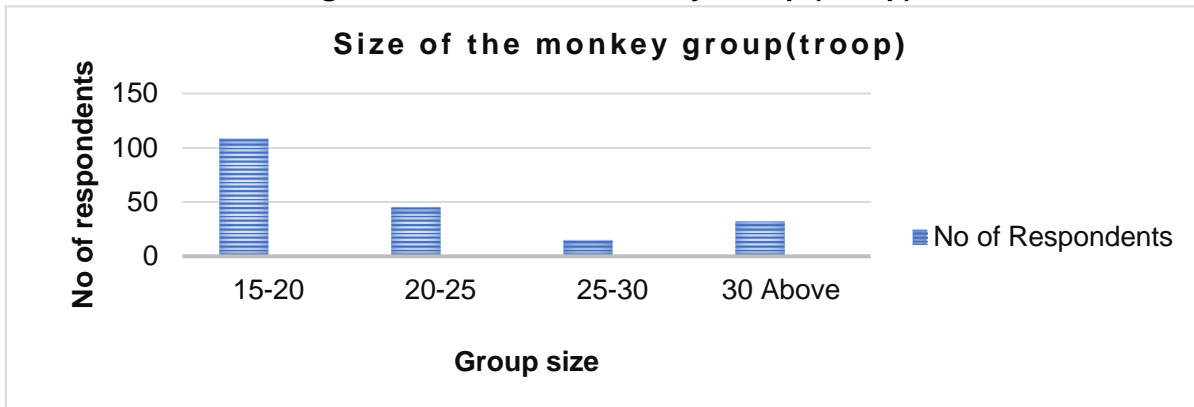
Out of 200 respondents, 54 percent say that Monkey's group consists of 15–20 monkeys (Table 4). 22.50 percent of respondents say that the monkey's group consists of 20–25 monkeys. 16 percent of respondents claimed that the monkey's group is larger than 30, and only 7.50 percent of respondents said that each group have 25–30 monkey.

**Table 04: Size of the Monkey Group (Troop)**

Monkey Group size	No of Respondents	Percentage of Respondents
15-20	108	54.00
20-25	45	22.50
25-30	15	7.50
30 Above	32	16 .00
Total	200	100

Source: Field Survey 2023

**Figure 04: Size of the Monkey Group (Troop)**



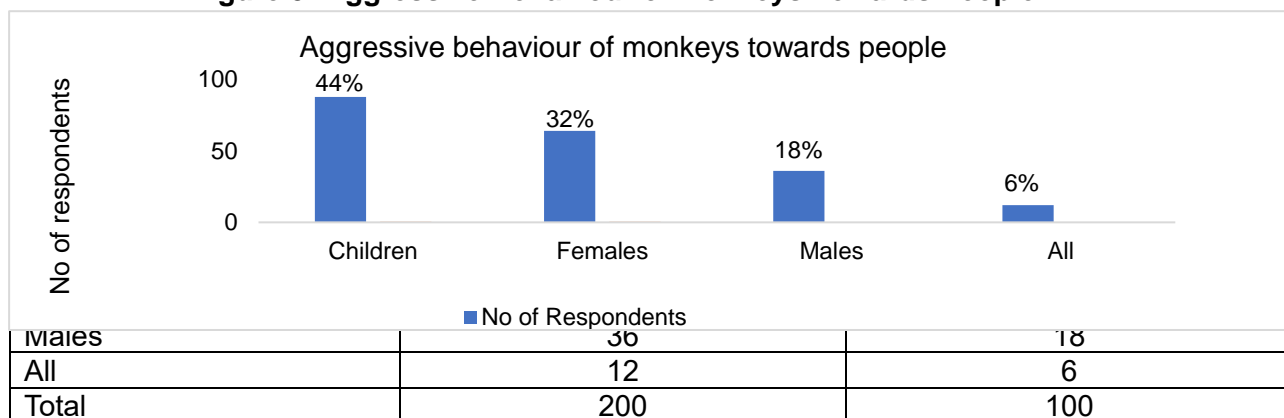
Aggression is a common behavior in rhesus macaques towards humans. However, monkeys are more aggressive towards kids and females than males. According to Table 5, 44 percent of respondents say that monkey behavior is particularly aggressive towards children, while 32 percent believe they are more aggressive towards females. Just 18 percent of respondents said that monkeys show aggression towards males.

**Table 05: Aggression Behavior of Monkeys Toward People**

Monkey Bite	No of Respondents	percent of Respondents
Male Monkey Bite	28	14 percent
Female Monkey Bite	30	15 percent
Both	142	71 percent
Total	200	100 percent

Source: Field Survey 2023

**Figure 5: Aggressive Behaviour of Monkeys Towards People**

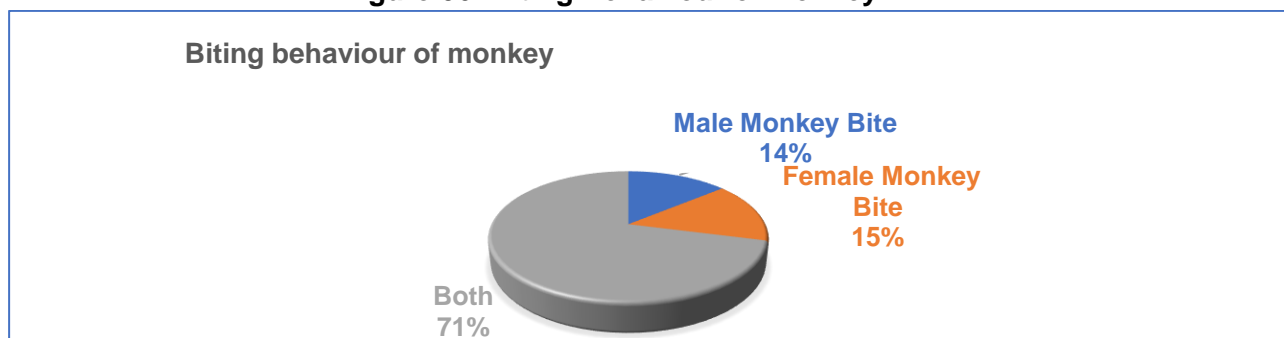


Monkeys not only attack people; in fact, they also bite them. The study revealed that female monkeys bite more than male monkeys (Table 6). Out of 200 respondents, 71 percent claimed that both male and female monkeys bite people. 14 percent revealed that male monkeys bite people, and 15 percent claimed that female Monkeys bite people.

**Table 06: Biting Behavior of Monkey**

Source: Field Survey 2023

**Figure 06: Biting Behaviour of Monkey.**



Out of 200 respondents, 71 percent claimed that they suffered economic damage by monkeys (Table 7). People not only suffer economic damage; they also suffer physical damage by monkeys. 21.50 percent of people claimed that they suffered physically, and only 7 percent claimed that monkeys do not harm them economically or physically.

**Table 07: Physical and Economic Damage by Monkeys**

Kind of Damage	No of Respondents	Percentage of Respondents
Economic damage	142	71.00
Physical damage	44	21.50
No damage	14	07.00
<b>Total</b>	<b>200</b>	<b>100</b>

Source: Field Survey 2023

**Figure 07: Physical and Economic damage by monkeys**

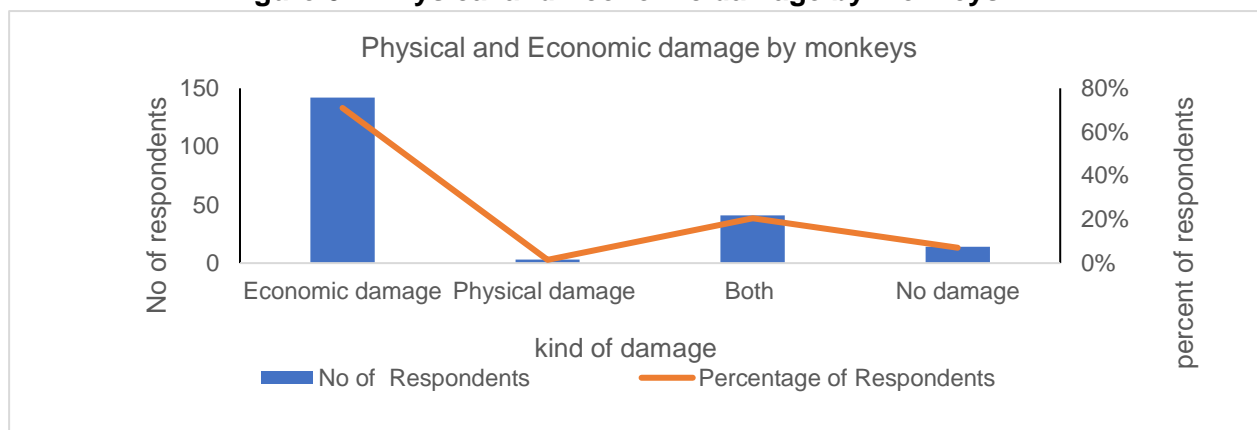


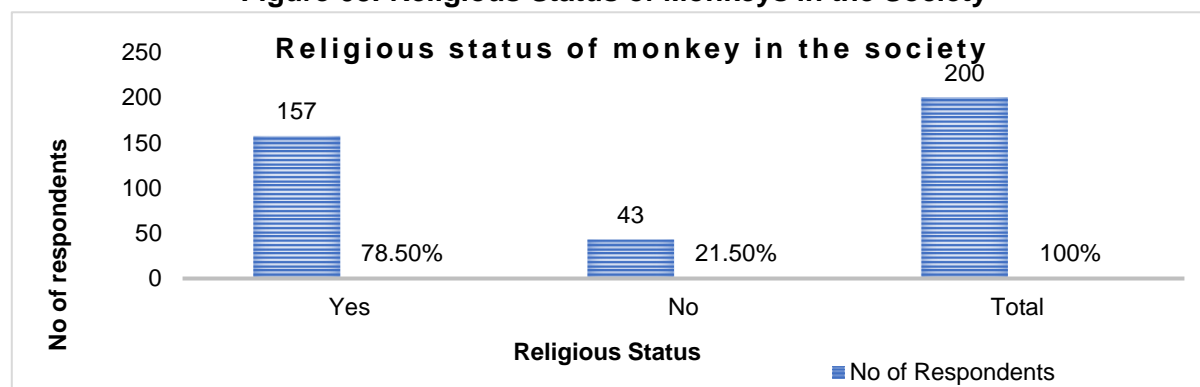
Table 8 presents the respondent's perception of monkeys as a god. This study showed that the majority of respondents 78.50 percent agreed that monkeys are a form of Hanuman. Only 21.50 percent people did not agree that monkeys are a form of God.

**Table 08: Religious Status of Monkeys in the Society**

Deity	No. of Respondents	Percentage of Respondents
Yes	157	78.50
No	43	21.50
Total	200	100

Source: Field Survey 2023

**Figure 08: Religious Status of Monkeys in the Society**



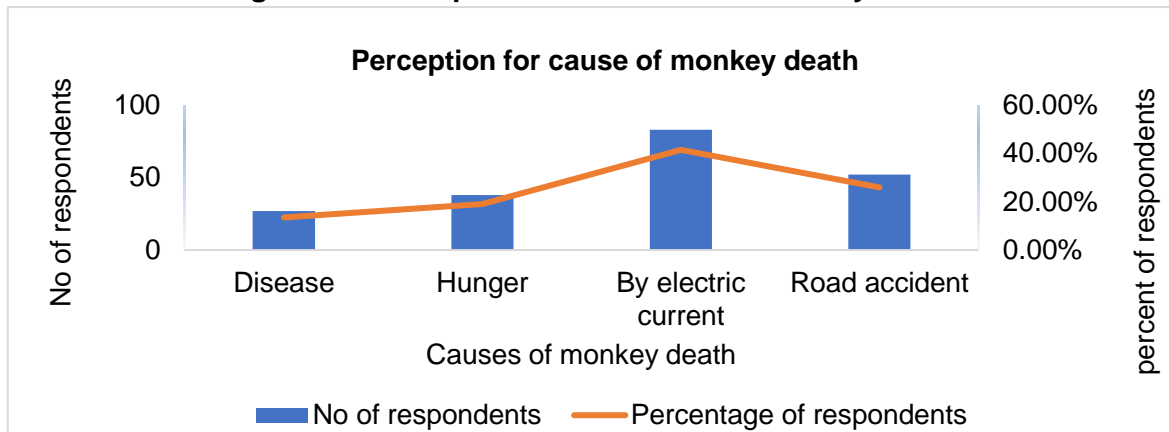
Monkeys die for many reasons (Table 9). This study showed that out of 200 respondents, 41.50 percent claimed that monkeys die due to electricity currents, 26 percent claimed that monkeys die due to road accidents, 19 percent said that monkeys die due to hunger, and the least (13.50 percent) respondents claimed that monkeys die due to diseases.

**Table 09: Perception for the Cause of Monkey Death**

Causes of monkey death	No. of Respondents	Percentage of Respondents
Disease	27	13.50
Hunger	38	19.00
By electric current	83	41.50
Road accident	52	26.00
Total	200	100

Source: Field Survey 2023

**Figure 09: Perception for the cause of monkey death.**



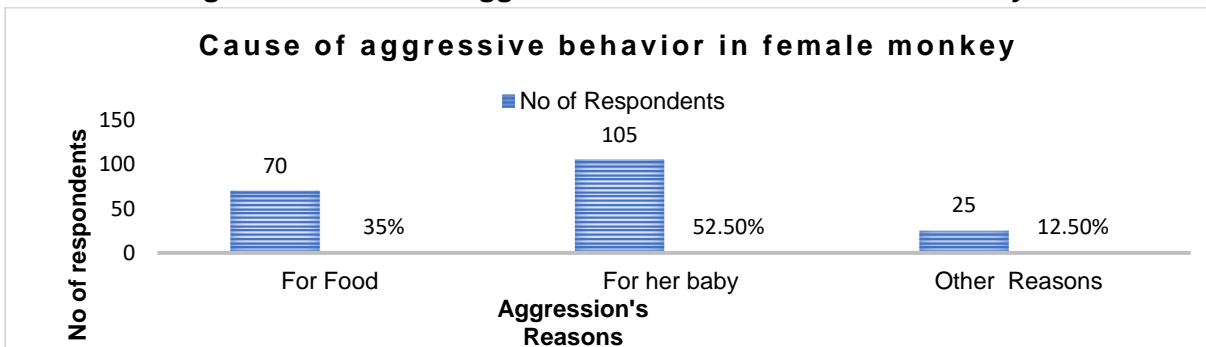
According to the survey, 35 percent respondents claimed that female monkeys became more aggressive when food is not available for them (Table10). 52.50 percent respondents claimed that female monkeys are aggressive when their babies catch by others (monkeys or humans). 12.5 percent respondents said that they do not know about the aggression behavior of female monkeys.

**Table 10: Cause of Aggressive Behavior in Female Monkeys**

Reasons	No. of Respondents	Percentage of Respondents
For Food	70	35.00
For her baby	105	52.50
Do not know	25	12.50
Total	200	100

Source: Field Survey 2023

**Figure 10: Cause of Aggressive Behaviour in Female Monkeys**



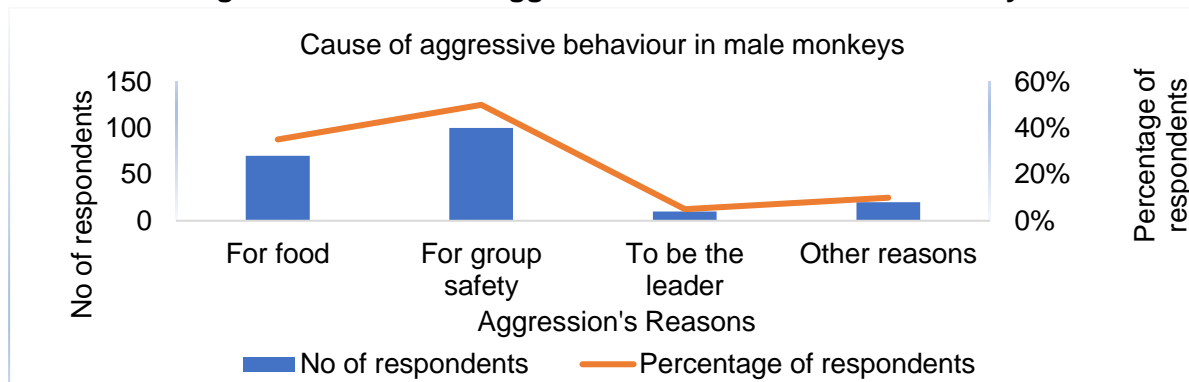
The study revealed that out of 200 respondents, 50 percent said that male monkeys showed aggression for group safety (Table 11). 35 percent of respondents say that the main reason for male monkeys' aggression is a lack of food availability. 5 percent of respondents agreed that monkeys are aggressive for group leadership. 10 percent of respondents claimed that they did not know about male monkey aggression.

**Table 11: Causes of Aggressive Behavior in Male Monkeys**

Reasons	No. of Respondents	Percentage of Respondents
For food	70	35
For group safety	100	50
For group leadership	10	05
Do not know	20	10
Total	200	100



**Figure 11: Causes of Aggressive Behaviour in Male Monkeys**



According to Paranab KR. Das (2017), Devi O. S., and Saikia P.K. (2008), rhesus macaques attack children and females more than males. Mostly Hanuman langurs act aggressively towards children to get food from them (Chaturvedi S. K. and Mishra M. K. 2014). During the survey, the same results were found: 44 percent of respondents claimed that monkeys attacked children, 32 percent claimed that they attacked females, and only 18 percent said they attacked on males (Table 5). Children are more attracted to monkeys when they are performing their natural behaviours, such as jumping, grooming, and playing. Whenever children came near to see these activities, monkeys attacked them. Most of the studies claimed that monkeys come into residential areas in the morning and evening (Humbali K. et al., 2012; Das D. and Mundal S., 2015; Rawat S. et al., 2021). During the survey, most of the respondents (39.5 percent) claimed that they stay full time in the colony, 18.5 percent claimed they come in the morning, and 18.5 percent claimed that they come in the evening (Table 3).

Monkeys are responsible for economic and physical damage. Most of the studies revealed that monkeys damage crops, roof tiles, damaging furniture, electric wires, etc., and they also steal food items, clothes, and utensils (Patari P. and Dasgupta S., 2021; Sarma A. K., 2021; Hambali K., et al., 2012). The present study's results are like those of these studies: 71 percent of respondents claimed that monkeys are responsible for economic damage, 21.50 percent people claimed that they suffered physically and only 7 percent people claimed that monkeys do not harm economically and physically (Table 7).

### Conclusion and Suggestions

The people of Jind City face many problems due to monkeys. The conclusion of this study is that mostly 78.50 percent of the respondents consider the monkey as a form of God (Table 8). As a result, people feed the monkeys, which leads them to move from the forest area into the city. 44 percent of respondents say that monkeys show aggression towards children the most (Table 5). Even 71 percent of the respondents agree that they suffer economic losses due to monkeys (Table 7). Food snatching, theft of clothes, destruction of electric wires or infrastructure, and physical attacks on women and children are major problems in Jind City. Monkey populations are continuously increasing due to the absence of natural predators and the easy availability of food in the city. As a result, man-monkey conflict has increased. That is why it is very important to overcome this problem. Some appropriate suggestions to solve the problem are given below: Fruit plants should be planted in and around the Bir Bara Forest area. We suggest that the area of Bir Bara Ban should be extended. Because monkeys are losing their natural habitat, that is why they enter the city. Monkeys should be relocated from human settlements to forest areas. Monkeys should be sterilised to control the population.

Monkeys are afraid of scarecrows, so men should use them to protect crops. Waste material should be properly managed and not left open. People should keep dogs as guards because monkeys are afraid of dogs. People should not give food to monkeys. People should use iron nets.

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