



# Knowledge, Attitude and Behaviour towards Rabies Prevention and Control – A Cross Sectional Study in Anakaputhur, an Urban Area of Kanchipuram District, Tamil Nadu

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## ABSTRACT

**Background:** Rabies is 100% fatal disease and till date only 4 victims had survived following intensive life support and nursing care. It is said to be preventable only using modern vaccines and artificial immunoglobulins. Rabies is preventable through wound care and correct rabies prophylaxis.

**Objective:** The main objective of this study is to assess the knowledge attitude and behaviour towards rabies prevention and control.

**Methodology:** This cross-sectional descriptive study was carried out among 131 people aged above 18 years and above residing in Anakaputhur, an urban area in Kanchipuram district, Tamil Nadu selected by purposive sampling method.

**Results:** Among the study participants, most of them were in the age group between 15 to 40 years. Around 70% of the study population had good knowledge about the first aid and vaccination methods after bit by a stray animal and 76% of the study population felt that they should report to the government in case they see an aggressive stray dog suspected of rabies. Around 92% of the dog owners vaccinate their pet dogs as per schedule.

**Conclusion:** Different areas showed different knowledge towards rabies prevention and control. Mass media awareness or other health posters, awareness camp conduction will help in creating common knowledge, awareness and there by good practise towards rabies prevention and control.

**Keywords:** Rabies, Fatal disease, Prophylaxis, Awareness

## INTRODUCTION

Zoonotic diseases are increasingly becoming a major problem throughout the world. Zoonotic diseases are the infectious diseases that spread from animals to human beings. In India, in the year 2013 to 2020s it was found that there are around 35 million stray dogs and 19.5 million pet dogs<sup>1</sup>, the weirdest thing found was only 10 percent of them were vaccinated<sup>1</sup>.

So, in such a large democracy with such a huge number of population of dogs there is very low number of vaccinated dogs and there by the non-vaccinated ones becomes a threat to the people as well as they become a cause of disease burden to the country.

Rabies is one of the most common zoonotic disease occurring in India. The causative agent is said to be a rhabdo virus, called as the rabies lyssa virus. This

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disease is transmitted from animals to humans by the transmission of saliva into the human host by a dog bite. Dogs remain as a reservoir for the infectious agent as well as they themselves can acquire the disease. This viral infection causes encephalitis in human beings and this disease is also highly fatal. However, rabies can be prevented and effectively managed by proper wound care and vaccination.<sup>2</sup>

According to the WHO report an estimated amount of 45% deaths from rabies occurs in South East Asia itself among which 36% deaths occurs in India itself.<sup>3</sup> The burden of rabies actually human deaths due to rabies was over 20,000 annually was estimated in 2003<sup>4</sup>. A more recent multi centric survey conducted in India in the year 2017 showed that the incidence of animal bites were around 1.26% which is a lower rate than showed in the previous years<sup>5</sup>. The government of India has taken large scale interventions and encouraged several organizations to deal with the stray dog problem in the country.<sup>3</sup>

Historically speaking from the period before independence, that is during the period of British India rabies was a major problem, this actually gave rise to setting up of various research laboratories at different places and which eventually led to the development of the vaccine. Even after independence modern India is still prevalent with a high number of cases as well as deaths from rabies. Despite the high burden of rabies in India, it was never under prioritized control. In the five year plans the term rabies was only noted twice, once in the fourth fifth year plan and the next in the sixth fifth year plan.<sup>6</sup>

The anti-rabies vaccine has been available for a long time in India, available at free of cost to the people, but the people who get bit by an unvaccinated animal should be aware that they must get vaccinated on high priority basis. And ignorance to any stray bite will also become a major reason to the disease burden in the country. Lack of awareness and knowledge about the vaccine is also due to ignorance in the minds of the people.

So, despite the initiatives by the government, good knowledge, attitude and behaviour towards animal bites as well as prevention and control of rabies among the people will help reduce the heavy burden of this neglected tropical disease in India. The study was carried out to find out the same among urban population in Kancheepuram district Tamil Nadu.

## METHODOLOGY

This is a community based descriptive cross-sectional study. It was conducted in the field practice area in Anakaputhur, which is an urban area of Kancheepuram district, Tamil Nadu. The study population composed of willing and eligible people in the age group of 18 years to 70 years to take part in the study. The study was carried over a period 3 months from July 2019 to August 2019.

Around 130 members were selected based on purposive sampling technique.

**Data collection Tool:** Data was collected from eligible and willing participants who were personally interviewed using a semi structured questionnaire which was prepared after a rigorous pilot testing with questions related to socio demographic details, details of their education, occupation and information regarding the knowledge, attitude and behaviour towards rabies prevention and control. The pilot study was done, and questionnaire was tested in the neighbouring area among 30 participants. The questionnaire which was developed and tested was used for collecting data in the present study.

**Data Analysis:** Data was entered in Microsoft excel sheet and analysed using SPSS 20.0 version using descriptive statistics. The outcome variables of the study are all categorical variables and expressed as proportions.

**Ethical clearance and informed consent:** The study was approved by the ethical committee of Sree Balaji Medical college & Hospital, Chrompet. The participants were briefed about the purpose of the study and informed consent was obtained from each participant before the interview.

## RESULTS

The study done to assess the knowledge, attitude and behaviour towards rabies prevention and control yielded interesting results which are presented below in the form of tables and figures.

**Table 1: Socio-demographic details of the study participants**

Variables	Participants (%)
<b>Age</b>	
>25	67 (0.52)
≤25	63 (0.48)
<b>Sex</b>	
Male	44 (0.34)
Female	86 (0.66)
<b>Occupation</b>	
Employed	62 (0.48)
Unemployed	68 (0.52)

The age of the participants in the study ranged from 10 to 75 with males representing 34.3% and females 65.7%. Around half of the study participants were within 25 years of age. Out of the total 130 participants interviewed 48% of the participants were employed and 52% participants were unemployed/students. (Table 1)

**Knowledge towards rabies prevention and control among study participants:** It was found that, 28.7% had their own pet dogs and the rest did not have a pet due to various reasons. Among the pet owners, only 36.4% of them were aware of the vaccination schedule of their pets and the rest of them

**Table 2: Knowledge towards rabies prevention and control among study participants**

Knowledge Variables	Participants (%)
<b>I. Knowledge towards rabies prevention and control</b>	
Having a pet dog	37 (0.287)
Awareness of vaccination schedule of your pet dog	13 (0.364)
Aware that certain diseases can be spread by animals	102 (0.791)
Aware that animals other than dogs can be spread by animals	87 (0.674)
Knowledge on first aid methods after a dog bite	90 (0.692)
Knowledge on vaccination methods after a dog bite	89 (0.684)
<b>II. Attitude towards rabies prevention and control</b>	
Report an aggressive dog to the government	98 (0.76)
Rely on native methods after a dog bite	24 (0.184)
<b>III. Behaviour towards rabies prevention and control</b>	
Bit by a dog	23 (0.176)
Vaccinated after bit by a dog (n = 23)	21 (0.913)
vaccinating your dog as per schedule (n = 37)	34 (0.918)
Allows the pet dog to play with a stray dog (n = 37)	4 (0.109)

didn't know even the vaccination schedule of their own pets and 79.1% were aware of the fact that certain infectious diseases are spread by stray animals. About 67.4% members knew rabies is also caused by other animals other than non vaccinated dogs. Among the sample population 69.2% had knowledge on the first aid methods in case of an animal bite. And a percentage of 68.4 had knowledge on the vaccination methods after an animal bite. (Table 2)

**Attitude towards rabies prevention and control among study participants:** Around 76% of the study population said that they will report an aggressive dog to the corporation and the rest 24% of the study population said that they will just ignore and stay away from the aggressive dog but they would not take any effort to report it to the government. The attitude towards choosing native medicine for a dog bite was also assessed and it was found out that around 81.6% will come to an allopathic hospital to get treated for a dog bite and the rest 24 members 18.4 % will rely on native medicine in case of an dog bite. (Table 2)

**Behaviour towards rabies prevention and control among study participants:** Behaviour towards rabies prevention and control was assessed among my study participants. Table 4 shows that 17.2% of the study population were bit by a stray animal and around 91% of the people who were bit by a stray animal got vaccinated. Behaviour towards rabies prevention and control was assessed among the 37 dog owners in the study population. It was found out that 91.8% vaccinate their dogs as per schedule completely. It was also found that 89.1% among the dog owners in my study population do not allow their pet dog play with stray animals. (Table 2)

## DISCUSSION

It is said that 50,000 cases of rabies are reported each year out of which 30,000 are from India.<sup>7</sup> This alone shows the importance of people to be aware of one the most virulent infectious disease like rabies. The results of this study are discussed below.

Among the study population, 79.1% knew that they have to stay away from stray animals. In a study conducted by Monje et al on Knowledge, attitude and practices about rabies management among human and animal health professionals in Mbale District, Uganda showed only 44% had sufficient knowledge on rabies.<sup>8</sup> This disparity might be due to the wide geographic differences.

Around 67.4% in the current knew that rabies can be caused by animals other than dogs. In a community awareness study conducted by Masthi NR et al in seven representative states in 2019 showed that 77.3% opined that risk of rabies from dogs was high compared to 41.6% who believed that there was little or no risk of rabies from cats<sup>9</sup>. This disparity might be due to the limitations of the current study.

In a study conducted by Sivagurunathan C et al in an urban community showed that only 37.6% knew that rabies is caused by other animals than dogs.<sup>10</sup> In a study done by Jadhao A et al 53.77% had good knowledge towards control of rabies<sup>11</sup>. This disparity might be due to the differences in socio demographic characteristics.

Among the 37 pet owners in this study population 92% of them vaccinate their pet dogs as per schedule, and 87% of them doesn't let their pet dogs play with stray dogs which prevents the transmission of rabies to the pet dogs. In a study conducted by Sudharshan MK et al, the annual incidence of dog bite rate was 1.7%.<sup>12</sup> In the study population, 17.2% were bit by a stray animal mostly dogs, among them 91% got vaccinated. This disparity might be due to the difference in geographic area and population of stray dogs in the respective areas.

Around 70% of the study population had good knowledge about the first aid and vaccination methods after bit by a stray animal. In a study conducted by Pal P et al at Nepal it was found that younger population had better knowledge and followed good practises like vaccinating the dog and getting vaccinated in case of animal bite<sup>13</sup>. But, in this study most of the study population had good knowledge towards prevention and control of rabies. In a KAP survey in

Panchkula by Tiwari HK et al highlights that contrary to the expected belief that urban residents are better informed about rabies, significant gaps persist in their knowledge towards the disease, especially regarding the means of transmission through licks and scratches of rabid animals in residents of low socio-economic level and in families with children of vulnerable age ( $\leq 14$  years). Inadequate practices regarding rabies prevention were found in the older urban respondents ( $\geq 35$  years of age) and those from the low socio-economic status.<sup>14</sup>

In a study conducted by Tripathy RM et al on Assessment of knowledge, attitude and practice regarding rabies and its prevention among construction workers, a cross-sectional study in Berhampur, Odisha showed that only 14.9% had proper knowledge on the prevention of rabies<sup>15</sup>. This disparity might be due to the demographic changes.

In this study, around 76% of the study population felt that they should report to the government in case they see an aggressive stray dog suspected of rabies and 82% of the study population felt that they should go to an allopathic hospital in case of an animal bite. This shows that, though more than 70% were aware of vaccination following dog bite, 25-30% were unaware of the same, which can lead to mortality if bitten by a rabid dog. In a KAP study on Dog bite and its management done by Singh US et al in a rural community of Gujarat showed that 19.2% of the study population will rely on religious methods like applying chilli in case of a dog bite<sup>16</sup>. This is almost similar to this study where only 82% of the population felt the need of an allopathic hospital in case of a dog bite. Though the awareness of the need of a hospital management is good, the rest population should also stop following native practices.

A study conducted by Jain P et al at Muradnagar which showed a very low level of awareness on post dog bite management and also revealed serious gaps in understanding wound severity, classification and correct application of anti-rabies vaccine.<sup>17</sup> This disparity may have been due to the different study areas and difference in their socio-demographic characteristics.

In a cross sectional study conducted by Priyanka Kapoor et al on knowledge regarding rabies among attendees of the anti-rabies clinic at a teaching hospital, Jaipur approximately 15% of the sample population had a wrong concept that one vaccine shot is enough for immunization against rabies.<sup>18</sup> This implies that clear knowledge on all the doses of the vaccine is lacking and it should be taught to the public through various modes.

## CONCLUSION

Though the majority of the population had good knowledge on vaccine methods and post dog bite management, the rest were having less knowledge

and awareness. Rabies being a highly fatal disease, even the small lacunae should be filled by infusing knowledge into the minds of the public by means of health awareness programmes.

## RECOMMENDATION

There is a dire need for improving the awareness on the rabies, vaccination regarding rabies and post-dog bite management. This can be done by putting up Health education posters at various public places and conducting awareness camps on prevention of rabies. Doctors working in veterinary clinics and public health workers can help in disseminate information regarding rabies prevention and post dog bite management when pet owners and general public visit them in their clinics and hospitals.

## LIMITATION

The current study has its own limitations as it was conducted among a small population in Anakaputhur, an urban area of Kanchipuram district. The study results cannot be generalized to the general population of that area as a non probability sampling technique was used.

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