



# Misconceptions and Myths Regarding Animal Bite and Rabies: A Community Based Study in Ahmedabad

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## ABSTRACT

**Introduction:** Rabies is a highly fatal viral disease. Rabies and dog bite is prevalent in India but multiple myths are associated and they determine the post-exposure treatment seeking behavior of animal bite victims. The present study was conducted with the objective to study the myths and misconception in the community regarding animal bite and rabies.

**Methodology:** The community-based cross-sectional study was carried out in field practice area of BJMC Ahmedabad. 270 participants were randomly selected from the available list and pre-designed and pre-tested questionnaire was used to collect data.

**Result:** 60.71% participants were not aware of fatality of rabies and 27.55% said that they will visit health care facility after 10 days of a dog bite. 55.10% responded to they will not take ARV if they do not get any symptoms after a dog bite. Only half of them responded for Dettol/antiseptic application after dog bite wound care management.

**Conclusion:** Misconception and myths regarding dog bite and rabies were found to be very prevalent in the community which will definitely hamper their treatment seeking behavior. Targeted IEC for a dog bite and its management and rabies should be given periodically given in the community.

**Key-words:** Rabies, Dog bite, Myth, Misconception.

## INTRODUCTION

Rabies is a highly fatal viral disease of the central nervous system and it is caused by Lyssavirus family type 1. It is primarily a zoonotic disease of warm-blooded animals e.g. dogs, cats, jackals and wolves mainly. It is prevalent in more than 150 countries and territories. 99 percent of human infection is caused by rabies in dogs and it poses a potential threat to more than 3.3 billion people which shows its high prevalence.<sup>1</sup> According to a report by WHO, worldwide human deaths from endemic canine rabies were estimated to be 55000 in a year and in India, it is estimated that, around 20,565 to 30,000 persons die due to rabies, with incidence of 1.7 per 100,000 population<sup>2</sup>. The annual

animal bite load is estimated to be 17.4 million (1.7%) and among them, around 46.9% takes anti-rabies vaccination as post-exposure prophylaxis<sup>3</sup>.

India is very diverse country, especially for its social and cultural background. People's belief and practices vary by states and even districts. There is a wide range of myths and misconceptions related to different diseases/illnesses and people have great faith in it even though efficacy is unproven. These types of socio-cultural factors and influences are in practice for centuries and many attempts have been made to change these factors responsible for misbeliefs but it often failed due to the defiant community perception<sup>4</sup>. One such belief is based on prevailing myths and misconceptions for

rabies. Myth refers to widely held but false belief or idea with reference to particular illness/ diseases.

In India, various cultural practices are followed after exposure to adogbite, for example, application of soil, chilli paste, oil etc. It is common but unnecessary and it further damages the tissue<sup>5</sup>. Multiple myths are associated with the disease and they determine the post-exposure treatment seeking behaviour of animal bite victims<sup>6</sup>. Myths about rabies and its treatment prevent people seeking proper medical care, and many of them still believe that Post Exposure Prophylaxis consist of a series of very painful injections in the abdomen. The belief that witchdoctors,herbal extracts, gems and stones, a change in diet or religious practices can prevent rabies stops people seeking effective treatment and even they believe that one vaccination dose is sufficient or the dietary or other activities can reduce vaccine effectiveness<sup>7</sup>. With this background, the present study was carried out with the objectives to know the misconceptions for rabies and to know the myths associated with dog bite in the field practice area of B.J.Medical College, Ahmedabad.

**MATERIALS AND METHODS:**

**Study design, study area and study population:** The present cross-sectional study was conducted in the field practice area of B. J. Medical College, Ahmedabad. The study subjects to be included in the study were adults aged 20 years and above belonging to both sexes, residing in the same field practice area at the time of the study period. Total 270 subjects were interviewed.

**Sample Size:** The sample size was determined based on the prevalence of misconception and myths (42.15%) related to dog bite<sup>4</sup>. Based on this the sample size was estimated using the formula  $N = Z^2pq/L^2$  where, Z - Value of alpha error, Prevalence (p) = 42.15%, Precision (L) = 15% of 'P' = 6.3. The estimated sample size was 236, and considering a 10% attrition, the sample size was 259. This has been rounded off to 270 as the sample size for this study.

**Sampling method:** Simple random sampling method was used for the selection of study participants. A list was prepared using the area wise population and a family list of field practice area. The total adult population is about 25,663. Random numbers were generated using random number table and study participants were selected accordingly.

**Data collection method:** The data collection was carried out during between May 2016 to August 2016. A pre-designed, pre-tested, structured ques-

tionnaire was used for the data collection. The questions were related to the knowledge and practices regarding the myths related to dog bite and rabies. The data was collected by the house to house visits and interviewing all the selected subjects after taking informed consent.

**Data analysis:** Data collected was entered, compiled and analysed using Microsoft Office Excel.

**RESULTS:**

As shown in Table 1, among 270 subjects, the majority (37.24%) of the study participants were in the age group of 40 to 50 years followed by 27% in the 50 - 60 years of age group. Among the study group, 60% were female and rest were male. Most of the participants (89.82%) were married. 29.39% of the subjects were belonging to Open category followed by 35.38% in the SEBC category.

**Table 1: Socio Demographic Profile of Study Population**

Characteristics	Frequency (N=270) (%)
<b>Age Group</b>	
20 - 30	44 (16.32)
30 - 40	52 (19.39)
40 - 50	101 (37.24)
50 - 60	73 (27.04)
<b>Sex</b>	
Male	108 (40)
Female	162 (60)
<b>Marital status</b>	
Married-	243 (89.82)
Unmarried-	27 (10.71)
<b>Religion</b>	
Hindu	202 (75)
Islam	31 (11.22)
Christian	24 (8.67)
Jain	13 (5.1)
<b>Education</b>	
Illiterate	68 (25.05)
Primary	101 (37.09)
Secondary/ higher secondary	58 (21.25)
Graduates	35 (12.65)
Post-graduates	8 (2.7)
<b>Occupation</b>	
Unemployed	101 (37.23)
Unskilled worker	63 (23.37)
Skilled worker	54 (20.15)
Shop Owner/clerical	27 (9.88)
Semi-professional	20 (7.28)
Professional	5 (2.09)
<b>Type of family</b>	
Nuclear	98 (36.22)
Joint	172 (63.77)
<b>Caste</b>	
Open	79 (29.39)
S.E.B.C	96 (35.38)
Schedule caste	76 (28.22)
Schedule tribe	19 (7.01)

**Table 2: Local Applications used for pre-treatment in Dog Bite**

Local Applicants	N*(%)
Dettol/Antiseptic	132 (49.00)
Tobacco Powder	36 (13.26)
Rust	25 (9.18)
Chilli Powder	25 (9.18)
Others	39 (14.28)
Don't Know	79 (29.08)

\* Multiple responses received

**Table 3: Time interval between exposure to dog bite and visit to health-care facility**

Time Interval	N (%)
Immediately	88(32.65)
After 10 days	74(27.55)
Don't Know	107(39.79)

**Table 4: Misconceptions and Myths related to dog bite in the community**

Questions for Misconception	Yes (%)	No (%)	Don't Know (%)
Knowledge regarding Fatality of disease	26 (9.69)	164 (60.71)	80 (29.59)
Which animal-bite can cause Rabies other than a dog?	103(38.26)	167 (61.74)	0 (0)
Will they complete course of ARV* even if they will not get any symptoms of disease within some days?	94 (34.69)	149 (55.10)	28 (10.20)
Will they take ARV again after next dog-bite?	92 (34.18)	110 (40.81)	68 (25.00)
Will they take ARV even there is only scratches done by a dog and it does not bite?	68 (25.00)	132 (48.97)	70 (26.02)

\* ARV=Anti Rabies Vaccine

As shown in Table 4, on asking about the fatality of rabies, 60.71% responded to No and around 30% of them didn't know about. 61.74% study participants responded that dog is the only animal which is responsible for rabies. On asking about ARV, half of them (55.10%) responded that they will not take ARV if they do not get any symptoms after a dog bite and 34.69% responded positively. 40.81% participants responded that they will not take ARV again after next dog bite and 25% responded that they don't know whether they will take or will not take ARV. Almost half of the participants (48.97%) said that they will not take ARV if there are a nonly scratch mark and no bite mark by a dog.

**DISCUSSION**

Rabies is one of the most important fatal zoonotic diseases in India. It is caused by biting of a rabid dog. Dog bite cases are increasing nowadays but many misconceptions are still there in the community related to dog bite which has been imposed since ancient time. Many awareness activities are being carried out in the community but some misconceptions still persist. Our study shows that almost 60% of the participants consider rabies as non-fatal. Similar findings were observed in a study done by Vinay M. et al. on awareness regarding rabies and its prevention shows that

Around 64% subjects were belonging to the joint family and 3/4<sup>th</sup> (75%) subjects were following Hindu religion. Around 1/4<sup>th</sup> (25%) participants were illiterate.

On asking about what will they apply to dog bite wound, half of them responded for Dettol/antiseptic, 13.26% responded to tobacco powder and 9.18% to rust and chilli powder. 14.28% responded to others and 29.08% of them didn't know what to apply. (Table 2)

Table 3 shows that 39.79% people didn't know when to visit health care facility after a dog bite and 27.55% said that they will visit health care facility after 10 days. Only 32.65% participants said that they will immediately visit health care facility.

47.25% of the surveyed people consider rabies non fatal<sup>8</sup>. In a study carried out by Carleton a survey of knowledge, attitudes, and practices of dog and cat owners in Ottawa stated that 95% of respondents were aware that they were likely to get rabies from a bite of a rabid dog<sup>9</sup>. Another study carried out by U.S. Singh et al on KAP Study on Dog Bite Management in Gujarat shows that all of the people are aware of rabies and 98.6% knew that it is transmitted by a rabid dog bite<sup>10</sup>. These findings are different from our study as it shows that only 61.74% participants are aware that it is caused by a rabid dog. This may be due to lack of awareness among the study participants.

In our study, it was revealed that almost half of the participants believe that it is not necessary to take ARV if there are no any symptoms for it. This is comparable to a study carried out by N. Agarwal et al about community-based study on Knowledge, Attitude and practice following a dog bite, which shows that only 40% respondents take anti-rabies vaccination<sup>11</sup>.

In a study carried out by Seenivasan P et al. shows that only 15% people responded to health care facility on the same day<sup>12</sup>. These findings are different from our study which shows that 32.65% respondents will visit the health care facility on the same day. These differences in findings may be due to different educational levels.

Our study shows that none of the participants responded to washing with tap water which is most important practice for dog bite however 49% of them will apply Detail/antiseptic to the dog bite wound followed by tobacco powder rust and chilli powder. Different findings for washing with soap and water and application of antiseptics were reported in a survey by Rozario et al. It reported that in the latest survey done in 2004, only 39.5% of bite victims washed the wounds with soap and water. Practice for other applications at the site of dog bite was mainly tobacco snuff, chilli and turmeric which is similar to our study<sup>13</sup>. Bhargava et al reported that different practices are there in the community including use of traditional remedies such as the application of chilli paste, are prevalent for wound treatment<sup>14</sup>. These differences with respect to the use of local applications used as first aid for dog bite may be due to the different cultural background, education level and different myths and perceptions of the community.

## CONCLUSION

As per the study findings, misconceptions and myths related to animal bite and rabies were found to be highly prevalent. These all misconceptions were firmly believed by the community.

Treatment seeking behaviour could be severely affected by these misconceptions and myths.

## RECOMMENDATIONS:

Health education should be given to the community regarding dog bite and its proper management. The health education regarding severity and long incubation period of rabies should be given. The rabies day should be celebrated in the community.

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