

Magnitude and health seeking behavior among dog bite cases in rural Tamil Nadu

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ABSTRACT

Background: The dog population in India is estimated to be around 25 million, and most of them are not protected against rabies. Although cases of dog bite constitute a problem of considerable magnitude, not all the victims of a dog bite seek medical help. **Objectives:** (1) To find out the prevalence of dog bite cases in a selected rural population and the practice of first aid and (2) To analyze the health seeking behavior among those who are exposed to dog bites. **Materials and Methods:** It was a community-based cross-sectional study. About 6 villages selected at Keerapalayam block in Cuddalore district by simple random sampling method. Study participants were 237 dog bite cases reported over a period of 5-year. Data collection was done based on the pre-designed questionnaire. Information could not be obtained for 21 cases due to refusal and migration. Statistical analysis was done using proportion, Chi-square test. **Result:** Out of 216 cases of dog bite 57.4% were males. Out of which 34.3% were <15 years of age. Total prevalence was 1.3/100 population. In 55.6% of cases, the bite was provoked. Minimum number (9.7%) of the bites occurred during day time between 9 am and 4 pm ($P < 0.005$). out of 216 cases (74%) of cases had bite in the lower extremities. 51.9% of the dog bite cases had no first aid. 67.5% of the dog bite cases reported that they went for allopathic treatment and 65.7% of cases received treatment only after 24 h. **Conclusion:** There is a shortfall of completeness of dosages and course of treatment due to the non-availability of vaccines. Preferably intradermal route of administration of vaccines will sort it out the demand for the vaccines when it is given through the intramuscular. This will be useful in the primary health-care level and rural regions to combat the deficit of the vaccines.

KEY WORDS: Dog Bite; Health Seeking Behavior; First Aid; Anti Rabies Vaccine


INTRODUCTION

Canine rabies continue to exist in 87 countries or territories of the world, and the human death toll worldwide is about 60,000 and 10 Million people receive post-exposure prophylaxis every year.^[1]

Although the actual numbers are not known, it is estimated that approximately 35,000-40,000 human deaths occur due to rabies each year in the countries of South-East Asia region.

Every year approximately 1.1-1.5 million percentages receive post-exposure treatment either nerve tissue or cell culture rabies vaccine. More than 95% of these cases are bitten by dogs. The dog population in India is estimated to be around 25 million, and most of them are not protected against rabies.^[2,3]

Although cases of dog bite constitute a problem of considerable magnitude, not all the victims of a dog bite seek medical help. Unquestionably the level of health seeking behavior of the community and concern about the dog bite injuries has an important role to play in dealing with this problem.^[4] Hence, this study is conducted with the following objectives (i) To find out the prevalence of dog bite cases in a selected rural population and the practice of first aid, (ii) To analyze the health seeking behavior among those who are exposed to dog bites.

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MATERIALS AND METHODS

This study was conducted at Keerapalaym block in a rural population of Cuddalore District, between 1st January and December 2015. The selection of village for this study was conducted by way of simple random sampling from the list of 63 village panchayats of Keerapalayam block by lottery method. The design of the study was to cover the entire population in all 6 villages. The total population surveyed in the 6 villages is 16,953. The data were collected by personal interview with the respondents by the residence. Data thus collected were analyzed using descriptive and analytical statistical methods using Epi Info Software.

RESULTS

Table 1 shows the frequency of dog bite is more in males as compared to females in the groups of 6-15 and 16-30 years. In the age group below 5 years, 31-45 years and above 45, a number of cases is more in males. The difference is statistically significant.

Table 2 shows 38.4% of the bites occurred in the morning between 6 am and 4 pm. Less number of cases have been reported during 9 am - 4 pm. The trend is more or less same in both males and females.

Table 3 shows 55.6% of dog bite occurred subsequent to provoking of dogs like throwing stones, pulling the tail, etc., and 40.7% of the bites reportedly occurred unprovoked. A small percentage of the bites 3.7% occurred while feeding or caring dogs.

Table 4 shows the common sited of dog bite, only 1.9% of the bites are reported to occur on the head, face, and neck. Roughly 75% of bites occurred over the lower limbs. Out of that 53.9% of the bites occurred on legs.

Table 5 shows that only 15.7% of the cases received first aid and 31.5% of the cases received herbal application prepared locally from aloe vera or other plant leaves.

Table 6 shows 67.5% of the dog bite cases preferred allopathic treatment and went to government hospital or private doctors. 32.5% of the cases reported that they went for indigenous treatment namely the application of paste or power prepared from the plant products. The details were difficult to get.

Table 7 shows a majority of the cases (65.7%) took treatment only after 24 h and the delay in seeking treatment, is mostly due to a lack of transport facilities, unaffordability, and regarding post-exposure prophylaxis.

DISCUSSION

Dog bites injuries remain a problem of significant proportion in this country. Over all, the incidence of dog bite in this study is 1.3/100 population, which is slightly lesser than the

Table 1: Age and sex distribution of dog bite cases

Age group (in years)	n (%)		
	Male	Female	Total
Below 5	6 (4.8)	5 (5.4)	11 (5.1)
6-15	39 (31.5)	24 (26.1)	63 (29.2)
16-30	37 (29.8)	16 (17.4)	53 (24.5)
31-45	18 (14.5)	22 (23.9)	40 (18.5)
Above 45	24 (19.4)	25 (27.2)	49 (22.7)
Total	124 (57.4)	92 (43.6)	216 (100)

hi-square=4.68, df=1, P=0.03

Table 2: Distribution of dog bite cases according to the reported time of occurrence

Timing	Total
	n (%)
6 am-9 am (morning)	83 (38.4)
9 am-4 pm (afternoon)	21 (9.7)
4 pm-7 pm (evening)	67 (31.0)
7 pm-6 am (night)	45 (20.8)
Total	216 (100)

Table 3: Distribution according to the nature of dog bites

Nature of dog bites	n (%)
Provoked	120 (55.6)
Unprovoked	88 (40.7)
Others	8 (3.7)
Total	216 (100)

Table 4: Distribution of dog bites according to site

Sites of the body	n (%)
Head	2 (0.9)
Face	1 (0.5)
Neck	1 (0.5)
Chest	1 (0.5)
Abdomen	6 (2.8)
Hand	32 (14.9)
Palm	10 (4.7)
Thigh	15 (7.0)
Leg	117 (53.9)
Foot	28 (13.0)
Buttocks	3 (1.3)
Total	216 (100)

incidence of 1.9/100 population reported. In this study, out of 216 dog bite cases, 57.4% are in males. The dog bite cases are more in males when compared to females and it is statistically significant ($P = 0.03$). It was compared well with the finding of other studies by Jain et al., Dhaduk et al., Tenzin et al.^[4-7]

In this study, the proportion of dog bites more in the age 6-15 years as compared to other age groups.^[8,9] It compare well with the findings of the other study. As far as the timing of the

Table 5: Percentage of dog bites received first aid

Nature of first aid	Number of cases (%)
Without first aid	112 (51.9)
First aid	34 (15.7)
Herbal	68 (31.5)
Others	2 (0.9)
Total	216 (100)

Table 6: Distribution of the cases according to the type of treatment

Health seeking	n (%)
Allopathic	146 (67.5)
Indigenous	70 (32.5)
Total	216 (100)

Table 7: Distribution of cases versus time taken for treatment

Time taken for treatment	n (%)
With-in 24 h	74 (34.3)
Next day	142 (65.7)
Total	216 (100)

bites is concerned, this study shows that majority of the bites (38.4%) occurred during morning hours between 6 am and 9 am and it is statistically significant. This may be due to increased outdoor activities in the morning hours. Similarly, 31.6% of bites were reported to occur in the morning hours. Similarly 31.6% of bites were reported to occur in the morning hours.^[10-12]

This study has revealed the most common site of bites among all the sites is lower extremities (74%). This observation is common for both male and female. Similar are reported in other studies also.^[13,14] Only 15.7% received first aid. The other studies have also reported that only 9% of cases have taken first aid.^[4]

In this study, 34.3% received treatment with-in 24 h. Similar finding have been reports by other studies (37.03%) and (34%) respectively. Only 62.5% have been initiated antiretroviral therapy in this study. The rest of the cases have not received vaccine because they preferred native treatment. Similarly (60%) and (68.4%) of cases have received anti rabies vaccine respectively in the studies quoted. None of the cases completes the prescribed course due to various reasons, mainly due to non-availability of vaccine.^[2]

CONCLUSION

Hence, the study concludes since there is a shortfall of completeness of dosages and course of treatment due to the non-availability of vaccines. Preferably intradermal route of administration of vaccines will sort it out the demand for the vaccines when it is given through the intramuscular. This will be useful in the primary health-care level and rural regions to combat the deficit of the vaccines.

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