

## Original article

# A study on Effectiveness of educational intervention on knowledge regarding rabies among high school students in Trivandrum, Kerala

**Dr Shaliet Rose Sebastian**

Assistant Professor, Believers Church Medical College, Thiruvalla, Kerala, India .

Corresponding author-Dr.Shaliet Rose Sebastian

## Abstract

**Background:** Rabies is an infectious viral disease that is almost always fatal following the onset of clinical symptoms. **Objective:** To assess the knowledge among high school children on rabies, to impart health education about rabies and to study the change in knowledge after the educational intervention. **Methods:** A cross sectional study was conducted among 200 high school children at Government Higher Secondary School, Venjaramoodu, Trivandrum. Baseline knowledge regarding rabies was assessed using questionnaire method. A health education n regarding rabies was given to these students and knowledge was again tested using same questionnaire after one week. **Results:** Although all the study participants had heard about rabies, only 70 out of 200 i.e. 35% students knew that dog bite may lead to rabies. The knowledge regarding rabies was found to have a significant change after health education.. **Conclusion:** Health education in schools is a cost effective approach to prevent animal bite and rabies consequently.

**Keywords:** Rabies, Knowledge, Students, Kerala

## Introduction

Rabies has been one among the most dreaded diseases to man since antiquity. Rabies is an infectious viral disease that is almost always fatal following the onset of clinical symptoms. In up to 99% of cases, domestic dogs are responsible for rabies virus transmission to humans. Yet, rabies can affect both domestic and wild animals. It is spread to people through bites or scratches, usually via saliva.

In India, about 15 million people are bitten by animals, mostly dogs, every year and need post-exposure prophylaxis. The annual number of person days lost because of animal bites is 38 million, and the cost of post-bite treatment is about \$25 million.[1] It is estimated that, 20000 deaths occur annually due to rabies in India alone. Although all age groups are susceptible, rabies is most common in children aged less than 15 years, on an average, 40% of post exposure immunization is given to children aged 5-14 years.[2] Four out of every ten people who die from rabies are children.[3]

Education on dog behaviour and bite prevention for both children and adults is an essential extension of a rabies vaccination programme and can decrease both the incidence of human rabies and the financial burden of treating dog bites. Despite the tremendous progress in the fields of preventive medicine and vaccination, rabies is widely prevalent in India causing morbidity, mortality, emotional damage, loss of workers days and cost for treatment.[4]

Although all age groups are susceptible, children aged less than 15 years form more vulnerable group of susceptible. Hence it is very important to create awareness regarding rabies in them.[5]

### Objectives of the study

1. To assess the knowledge among high school students of Government Higher Secondary School, Venjaramoodu on rabies before giving health education.
2. To study the change in knowledge after educational intervention.

### Materials and methods

Study design: Cross sectional study.

Study setting : Government Higher Secondary School, Venjaramoodu

Inclusion criteria: All students of class 8,9,10 present during the dates of interview.

Study tool: A Pre-tested Semi-structured questionnaire.

### Sample Size

Sample size was calculated as per the knowledge on rabies obtained from a previous study.[6] Sample size is calculated according to the formula

$$N = (1.96)^2 pq/L^2 + 10\% \text{ non respondents. } p = 74.3\% \quad q = 100 - p = 25.7\%. L = 10\% \text{ of } p .$$

Obtained sample size rounded off to 200.

**Sampling Technique :** Cluster Sampling

### Sampling

Five divisions of forty students each were randomly selected out of nine divisions. All students of the selected five divisions were included in the study.

**Data collection :** Baseline knowledge regarding rabies was assessed using questionnaire method. A health education regarding rabies was given to these students with the help of audio-visual aids. This included the agent, host, environmental factors, mode of transmission, and prevention of rabies. Knowledge was again tested using same questionnaire after one week.

### Data analysis

The data collected from the study was entered into Microsoft Excel and statistical analysis was done using IBM SPSS version 16. Knowledge level was assessed by scoring ten questions. The maximum score was 10. Each correct response to knowledge questions received one mark, while 'do not know' and incorrect responses were given a score of zero.

Categorical variables are expressed in frequencies and percentages. A 'good' level of knowledge was taken as a score of 50% or more. Student's t-test was used to assess the change in awareness and knowledge post the educational intervention session.

**Consent:** Informed verbal consent from the principal of the school was obtained.

### Results

Mean age of study participants is  $14.3 \pm 1.3$  years. Among the 200 study participants, majority were males (112(56%)). Although all the study participants had heard about rabies, only 70 out of 200 i.e. 35% students knew that dog bite may lead to rabies. Only 8%(16) of study participants correctly identified that rabies could be spread by animals other than dog namely, cat, bat, rat etc.. Only 19.5% of study participants (39) were aware of the importance

of properly washing the wound with soap and water.50% of individuals correctly identified that rabies doesn't have a cure.89.5% of study participants(179) were aware that post exposure prophylaxis could prevent rabies.Table1 shows the results of paired sample t test. The knowledge regarding rabies was found to have a significant change after health education.

**Table 1: Knowledge of study participants before and after health education**

Study variable	Pre-intervention		Post intervention		t value	p value
	Mean	S.D	Mean	S.D		
Knowledge regarding mode of transmission	2.71	0.581	4.00	0.000	31.399	0.000
Knowledge regarding animals that transmit rabies	3.45	2.112	6.79	1.105	21.910	0.000
Knowledge regarding first-aid after animal bite	2.08	0.850	5.00	0.000	48.649	0.000
Overall knowledge regarding rabies	7.84	1.520	9.03	0.841	16.924	0.000

### Discussion

Present study shows that, although all the study participants had heard about rabies,only 70 out of 200 i.e. 35% students knew that dog bite may lead to rabies. In the study conducted by Valekar SS, Kshirsagar MV et al, 111 (77%) were aware that Dog bite causes disease; and out of these, 52 (46.8%) were aware that Rabies is caused by dog bite.[6] A study by Ichhpujani RL et al. has similar findings i.e. 68.7% have heard about the rabies, 60.7% were aware that dog bite causes Rabies.[7] In the present study,50% of participants knew that rabies was fatal. A study by Choudhari et al revealed that half of the respondents (51.3%) had the idea that the condition may cause death or poisonous effect to brain.[8]

### Conclusion

As rabies is a 100% killer disease and there is heavy burden of cases in developing countries like India, appropriate knowledge regarding rabies and its prevention is very important. Health education to school children regarding rabies is beneficial in two ways. Firstly,it is a cost effective approach to prevent animal bite and rabies consequently. It may reduce the burden of animal bite cases and the burden on post-exposure prophylaxis against rabies. Secondly, educating the children indirectly increases the awareness of their families and thereby the entire community.

## References

1. World Health Organization, Fact Sheets. Available from: <http://www.who.int/mediacentre/factsheets/fs099/en/> accessed on June 8, 2018.
2. Menezes R. Rabies in India: CMAJ. 2008;178(5):564-6.
3. Park K. Park's Textbook of preventive and social medicine, 23rd ed. Jabalpur, India: M/s Banarasidas Bhanot publishers. 2015:276-282.
4. WHO, FAO and OIE unite in their goal to eliminate human rabies and control the disease in animals, Neglected Tropical diseases, World Health Organisation, available from, [www.who.int/neglected\\_diseases/WRD\\_rabies\\_2013/en/index.html](http://www.who.int/neglected_diseases/WRD_rabies_2013/en/index.html).
5. Kale KM. Dog bites in Children. IJCM. 2006;31(1).
6. Sancheti PV, Mangulikar SK. An interventional study to assess knowledge regarding rabies in secondary school students. Int J Community Med Public Health 2016;3:180-3. Valekar SS, Kshirsagar MV, Ashturkar MD, Mhaske M, Chawla PS, Fernandez K. A cross-sectional study of awareness regarding dog bite and its management in rural community of Maharashtra. Int J Community Med Public Health. 2014;1:8-11
7. Ichhpujani RL, Chhabra M, Mittal V, Bhattacharya D, Singh J, Lal S. Knowledge, attitude and practices about animal bites and rabies in general community-a multi-centric study. J Communicable Dis. 2006;38(4):355-61.
8. Chaudhari S. Knowledge, attitude and practice about animal bite and rabies among victims attending a rural hospital in eastern India, Global journal of medicine and public health. 2015;4(1).