

ORIGINAL RESEARCH ARTICLE

# ASSESSMENT OF KNOWLEDGE ON ANIMAL BITE AND ITS FIRST AID MEASURES AMONG SCHOOL TEACHERS IN THE URBAN FIELD PRACTICE AREA OF S.C.B. MEDICAL COLLEGE, CUTTACK.

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## Abstract

**BACKGROUND:** Rabies is a fatal viral zoonotic disease but can be prevented by timely and appropriate post exposure prophylaxis. The large number of deaths due to rabies can be attributed to the fact that in spite of availability of effective vaccination against animal bite, people are unaware of various aspects of rabies and its prevention. School teachers act as disseminating knowledge on First aid not only among school children but also to general population in a community. The aim of present study was to assess the knowledge of school teachers regarding animal bite and to ascertain the first aid measures known to them following animal bite.

**METHODS:** A cross-sectional study was carried out from January to March 2016 in the urban field practice area of S.C.B. Medical College, Cuttack, Odisha. School teachers who were available at the time of data collection were interviewed using a Pretested and predesigned questionnaire.

**RESULT:** All the study subjects heard of Rabies and knew that it is fatal. All knew it to be transmitted by dogs. Other animals transmitting Rabies mentioned by them are cats (61.53%), monkeys (27%). Bite is the common mode of transmission as opined by all. Only few of them knew it could be transmitted by scratch (16.15%), lick on broken skin/mucus membrane (6.92%). Majority of them had no idea about the correct schedule and site of vaccination.

**CONCLUSION:** Keeping in view of the results, it is necessary to update the knowledge among teachers regarding Rabies and animal bite management.

**KEY WORDS:** Rabies, Animal Bite Management, School Teachers, Awareness, Knowledge.

## Introduction

Rabies (hydrophobia) is a highly fatal viral zoonotic disease of significant public health importance which is caused by Lyssavirus leading to acute inflammation of brain in humans and other warm-blooded animals. The disease affects domestic as well as wild animals and is spread to people through infective material, usually saliva, via bites and scratches<sup>1</sup>.

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According to World Health Organization (WHO) Rabies is estimated to cause 59000 human deaths annually in over 150 countries, with 95% of cases occurring in Africa and Asia. India accounts for 59.9% of Rabies deaths in Asia and 35% of deaths globally<sup>2</sup>. A person sustains an animal bite every 2 seconds and someone dies from rabies every 30 minutes<sup>3</sup>. 99% of rabies cases are dog-mediated and the burden of disease is disproportionately borne by rural poor populations, with approximately half of cases attributable to children under 15 years of age<sup>2</sup>.

There are many myths and false belief associated with wound management like application of oils, herbs, and red chilies on wound inflicted by rabid animals, and not washing the wound. Community awareness on all aspects of rabies is generally lacking and Most of the deaths occur due to ignorance. Even though it is fatal with a case fatality rate of 100%, can be prevented by correct methods of wound management including washing the wound with soap & water and post exposure prophylaxis with Anti-Rabies Vaccine and Rabies Immunoglobulin. There is no comprehensive treatment possible after the clinical occurrence of rabies.

Although all age groups are susceptible, young children are more prone to provoke animals resulting in a bite because of their playful nature. Parents and School teachers guide the children at home and school respectively. So the School teachers should know the different first aid and treatment measures of animal bite which is an important step in the management and prevention of rabies. With this context the study was carried out with objectives:

To assess the knowledge of school teachers regarding animal bite.

To know the different first aid and treatment measures adopted by them following animal bite.

## Materials And Methods

**Type of Study:** Cross-sectional study

**Place of Study:** Twelve Schools under Urban Field Practice area of S.C.B. Medical College & Hospital, Cuttack, Odisha.

**Period of Study:** January 2016- March 2016

**Study subjects:** School teachers who were available at the time of data collection were included in the study which came out to be 130 (64% of the total school teachers in that area).

**Study instruments:** Predesigned and Pretested questionnaire

## Result

All the 130 School teachers had heard of Rabies and knew that it's a fatal disease. But only 70 (53.84 %) of them knew that there is no chance of survival after development of the disease.

Dogs were mentioned as the source of infection for humans by almost all the respondents. Cats were mentioned most after dogs (61.53 %). Other common animals transmitting Rabies according to them are monkeys (27%), rats (18.46%), cattle (7.69%).

**Table 1: Knowledge regarding modes of transmission of rabies:**

Mode of transmission	Number (%)
Bite	130(100%)
Scratch	21(16.15%)
Licks on broken skin/mucus membrane	9(6.92%)
Drinking unboiled milk of rabid animal	33(25.38%)
Touching secretions of rabid animal	5(3.84%)
Others	2(1.54%)

Table 1 represents the knowledge of teachers regarding modes of transmission of rabies. 100% responded for the bite, 16% for scratch whereas lick and close contact were 9% and 5% respectively.

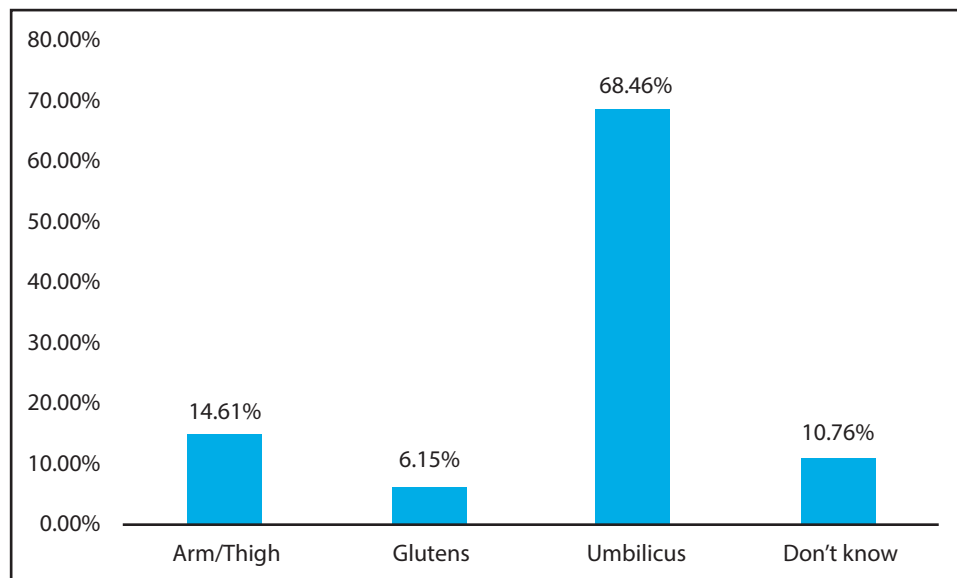
**Table 2: Approaches adopted by school teachers following dog bite at School:**

Different approaches	Number (%)
Wash the wound	86.15%
Go to the hospital/Contact a medical doctor	100%
Get a vaccination/a shot	52(40%)
Inform parents	100%
Contact a veterinarian	35(26.92%)
Report it to the dog owner & Ask for rabies vaccination certificate of the dog	48(36.92%)
Refer to a medicine shop	0%
Kill the dog	0%
Nothing	0%

Table 2 depicts various first aid measures which were opined by the study participants after an incidence of dog bite. Majority (86.15%) of the study subjects had a knowledge of immediate washing of the wound. 94.61% told that the wound should be stitched/bandaged before vaccination. All of them mentioned about the need of tetanus vaccination after a bite.

**Table 3: Knowledge regarding number of doses of ARV administration:**

No. of doses of ARV	Number (%)
1	0%
2	5(3.84%)
3	43(33.07%)
4	3(2.30%)
5	14(10.76%)
Others	48(36.92%)
No idea	17(13.07%)



**Distribution of study subjects on knowledge regarding site of vaccine administration**

Majority (81.53%) of them had no idea about Rabies Immunoglobulin. Most of them (68.46%) still believe peri-umbilical area as the site of anti-rabies vaccine administration.

There was a good level of awareness regarding clinical signs of rabies in dogs. Aggression was mentioned as a clinical sign by majority (84.6%) of the respondents. Other signs like excessive salivation, chasing people to bite were mentioned by few of them.

None of them had undergone any specific training. Only 42.30% respondents said that education about Rabies is included in the School Curriculum (5<sup>th</sup>/6<sup>th</sup> standard).

But all of them opined that education regarding First aid against Animal bite & Rabies is important and it should be there in the curriculum because it can help to prevent the disease.

## Discussion

The present study revealed that, only 53.84 % of the School Teachers had idea of no chance of survival after development of the disease. Whereas in a study conducted by **Chopra D et al<sup>4</sup>** among staff nurses only 10 % told that Rabies is not curable. In our study all of the School Teachers knew that dog is the major source for spread of infection (Rabies) in human Population which is similar to other studies conducted by **Manjunath M et al<sup>5</sup>** & **Bhalla et al<sup>6</sup>**. Other sources mentioned by them are cats, monkeys, rats, cattle which is almost similar to study conducted by **Malatesh et al<sup>7</sup>**. Nobody had idea about mongoose transmitting the disease. In a study by **Joydeep Das<sup>8</sup>** 82% teachers did know that dog is the only causative animal, whereas 12% of them said it can be caused by other animals also but 6% had no idea.

When enquired about the mode of transmission 100% responded for the bite by an animal, 16.15% for scratch whereas licks and close contacts were 9% and 2% respectively. In a study by **Jahnavi R et al<sup>9</sup>** among para medical students 73% knew Rabies could be transmitted by animal bites. In the Study by **Joydeep Das et al<sup>8</sup>** 87% of total respondents has a belief that only bite of a rabid animal can transmit disease while 10% has an idea about various modes of transmission other than bite. In another study by **Tiwari H.K. et al<sup>10</sup>**, approximately half (54%) of the participants were not aware that rabies could be transmitted through licks and scratches of a rabid animal, 24% of staff believed that rabies could be transmitted through contaminated food or water or between human. These

findings highlight the need for health education regarding modes of transmission of the disease.

With regard to their knowledge on first aid measures, 86.15% had a knowledge of immediate washing of the wound but the proper method of giving first-aid i.e. initial washing with soap and water followed by application of local virucidal agent like alcohol or povidone iodine was known to only 44.61% teachers. Washing a dog bite wound with soap and water is said to reduce the viral load and mortality by as much as 50% hence first-aid plays an important role for prevention of rabies.<sup>11</sup> **Kar K. et al**<sup>12</sup> conducted a study among nursing students where she found proper method of first-aid was known to only 21.2%. A study by **Samantaray A et al**<sup>13</sup> among AYUSH doctors showed that 55.2% had knowledge on proper method of first aid.

All most all the teachers in our study opined that victim has to consult a doctor after bitten by any animal and no body suggested for local faith healers or killing of the dogs.

Regarding vaccination, only 40% teachers had answered that the victim has to receive vaccine if bitten by animal but most of them did not know the correct number of doses and site of anti rabies vaccination. Though NTV has been discontinued long back & CCV is used throughout the country, 68.5% teachers have still an idea that ARV is given in peri-umbilical area. Only 14.6% teachers told vaccination over arm or antero-lateral part of thigh. In a similar study among paramedical students by **Haldar S R et al**<sup>14</sup> 55.5% responded for deltoid/thigh and 38% for peri-umbilical area.

Most of the participants (81.53%) lack knowledge about anti-rabies immunoglobulin and pre-exposure prophylaxis which is similar to study findings of **Kishore S et al**<sup>15</sup>. **Haldar S R et al**<sup>14</sup> found that only 29% of respondents had the knowledge that both rabies immunoglobulin and anti rabies vaccine are given after animal bite.

## Conclusion & Recommendations

Though all the study subjects knew that rabies is fatal and is transmitted by animal bite, the knowledge regarding modes of transmission, correct dosage, site and route of anti-rabies vaccine administration was poor. Thus, there is an essential need for generating awareness about rabies and animal bite.

Sharing of rabies awareness to students is very important step in rabies control, so this study recommends that curriculum of secondary school should include the chapter on rabies emphasizing on its manifestation and preventive aspects which can indirectly improve the awareness among the community.

It should be included in school health programme.

Reorientation training on first aid measures (following animal bite) among school teachers should be done regularly.

**Limitation of the study:** Awareness of teachers and health workers like staff nurses cannot be compared with that of health providers (General practitioners with qualification of MBBS or more) as their qualifications are different as well as of the general community.

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