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Research Article

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An interventional study to assess knowledge regarding rabies in secondary school students

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ABSTRACT

Background: Despite the tremendous progress in vaccination, rabies is widely prevalent in India. In India, about 15 million people get animal bite, every year and need post-exposure prophylaxis. Although all age groups are susceptible, rabies is most common in children. 40% of post exposure immunization is given to children aged 5-14 years. On this background, present study was designed to assess knowledge regarding rabies in secondary school students and to impart health education to them.

Methods: An interventional study was carried out in an English medium secondary school. Total 140 students of age 13-15 years were studied. Baseline knowledge regarding rabies was determined by questionnaire method. A health education intervention regarding rabies was given to them. Knowledge was again tested using same questionnaire after 10 days. The data gathered was analysed using appropriate statistical test.

Results: Out of total, 65.71% were male and 34.29% were female students. 85.71% students knew that dog bite can cause rabies.74.28% students knew about antirabies vaccination for human, which rose to 85% after health education. 66.43% students perceived application of turmeric, oil, chuna on wound as beneficial before health education. There was significant difference between knowledge regarding mode of transmission of rabies, animals that transmit rabies in India and immediate steps after animal bite in students before health education intervention.

Conclusions: There was inadequate knowledge regarding rabies, in students which shown significant increase after health education.

Keywords: Rabies, Vaccination, Animals that transmit rabies in India, Immediate steps after animal bite

INTRODUCTION

Rabies is a disease entrenched in history, dating back to ancient Egypt. Caused by an RNA virus belonging to the Lyssavirus genus, rabies is capable of infecting all mammals. The dog has been, and still is, the main reservoir of rabies in India. Other animals, such as monkeys, jackals, horses, cattle and rodents, seem to bite incidentally on provocation, and the fear of rabies leads the victim to seek post-exposure prophylaxis. ¹

The magnitude of the rabies problem and the level of rabies control differ from country to country. 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. 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. The district surveillance system project

Maharashtra data year 2010-12 shows 2000 dog bite cases per year on an average approximately 2 dog bites/1000 population/year.³ Four out of every ten people who die from rabies are children.⁴

People have very basic knowledge about anti rabies treatment getting 14 injections after dog bite, as per old concept, but not aware of disease which could occur if they do not manage the dog bites.⁵ There are myths and misbeliefs about the wound management. These include application of oils, herbs, and red chilies on the wound inflicted by rabid animals.⁶

Cases of human rabies with overt clinical symptoms are essentially fatal. Therefore, a preventive strategy is most appropriate. 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. On this background, present study was planned to assess knowledge regarding rabies in secondary school students and to impart health education to them.

Objectives of the study were:

- 1. To assess baseline knowledge regarding rabies in secondary school students.
- 2. To study the effect of health education intervention on knowledge of secondary school students regarding rabies.

METHODS

An interventional study was carried out in an English medium secondary school of Sholapur. Written consent was taken from principal of school. Permission was also taken from community medicine department to carry out a study. Study was done in a month of July 2015. The students who were absent and unwilling were excluded from study. Total 150 students between 13- 15 years were taken as study participants. Ten students who were absent were excluded from study. Thus study was carried out in total 140 students.

Baseline knowledge regarding rabies was determined by questionnaire method. An audio-visual health education intervention regarding rabies was given to these students. This included source, agent, host, environmental factors, mode of transmission, myths, prevention and control of rabies. Knowledge was again tested using same questionnaire after 10 days.

Each correct answer carried 1 mark. Maximum score regarding mode of transmission of rabies was 3. Maximum score for knowledge regarding animals that transmit the diseases was 7. Maximum score for knowledge regarding immediate steps after animal bite was 3, one correct mark for washing the wound with soap water for at least 10-15 minutes, use of Dettol or savlon

for washing and visiting doctor for antirabies vaccination and antirabies serum. Overall knowledge regarding rabies was decided by questionnaire method with maximum score of 23.

The data gathered was analysed using percentages and paired t test.

RESULTS

Study was done in a month of July 2015. Total 140 participants were included in the study. Out of total, 65.71% were male and 34.29% were female.

Table 1: Knowledge regarding mode of transmission of rabies in students before and health education intervention.

	Before health education	After health education
Mean score	1.12	2.14
S.D.	0.93	0.88

Highly significant, p< 0.001

In the present study, 124 (85.71%) students knew that dog bite can cause rabies.

Table 2: Knowledge regarding animals that transmit rabies in students before and health education intervention.

	Before health education	After health education
Mean score	4.01	6.05
S.D.	1.60	1.40

Highly significant, p< 0.001

WHO collaborative study Ichhpujani RL et al.³ has similar findings i.e. 68.7% have heard about the rabies, 60.7% were aware that dog bite causes Rabies.

Table 3: Knowledge regarding immediate steps after animal bite in students before and health education intervention.

	Before health education	After health education
Mean score	1.03	2.61
S.D.	0.93	0.78

Highly significant, p< 0.001

In the present study, awareness of wound management after dog bite was studied. 96 (66.43%) students perceived application of turmeric, oil, chuna on wound as beneficial before health education which reduced to 24 (16.6%) after study. While the study conducted by Ichhpujani et al. showed that only 31.9% participants washed wound with soap and water, application of lime was done by 6.8% participants.

Table 4: Overall knowledge regarding rabies in students before and health education intervention.

	Pre- test	Post- test
Mean score	11.857	18.364
S.D.	2.85	3.28

Highly significant, p< 0.001

Among the participants, 119 (85%) were aware about the vaccine availability for the dog bite after health education. 121 (86.43%) were aware about the vaccination for dogs against rabies. Out of them 90% said that the vaccine is available in Government Hospitals while 10% said in private hospitals.

The findings were similar i.e. 86.6% were aware about the anti-rabies vaccine in the study conducted by Singh US, Choudhary SK.²

Study conducted by Singh US, Choudhary SK; 79% told 14 injections and the site of administration 5.7% over abdomen. In the study conducted by Agarwal et al. showed that 92% were aware about the injections are available at Government Hospitals.

DISCUSSION

Present study shows that, 120 out of 140 i.e. 85.71% students knew that dog bite may lead to rabies. The awareness was more as the participants were students' verses general population as studied in other studies. In the study carried out by Valekar SS, Kshirsagar MV et al, 111 (77%) were aware that Dog bite causes disease; whereas out of these, 52 (46.8%) were aware that Rabies is caused by dog bite. Among the participants, 138 (95.8%) were aware about the vaccine availability for the dog bite WHO collaborative 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. 3,9,10

In the present study, 93 (66.43%) students described application of turmeric, oil, chuna on wound as beneficial before health education. Patil SP, Singh VS carried out a study on pre-treatment practices and some of the epidemiological factors associated among dog bite cases attending outpatient department in tertiary care hospital in 2012 and found that majority 87 (24.3%) applied local remedies like lime 33 (37.93%) followed by turmeric 21 (24.13%) and chilli powder (16.09%). 11

Knowledge, attitude and practice about animal bite and rabies among victims attending a rural hospital in eastern India was studied by Chaudhuri S. Results shown that only one fifth of the respondents knew that the bite may cause rabies. Half of the respondents (51.3%) had the idea that the condition may cause death or poisonous effect to brain. ¹² Sudarshan MK, Mahendra BJ et al. carried out an epidemiological study of animal bites in India. Results shown that, the recourse to indigenous

treatment (45.3%) and local application to wound (36.8%) was quite prevalent. About 17% of households reported having a pet/domesticated dog and the pet dog: man ratio was 1:36, whereas present study shown 30.71% students had pet dog or pet cat. ¹³

CONCLUSION

There was inadequate knowledge regarding source, mode of transmission, prevention and control of rabies, in students which shown significant increase after health education. Myths were present among them regarding application of chuna, turmeric, ash or oil over the wound which were addressed in health education.

Recommendations

Rabies is 100% fatal but 100% preventable disease. Health education to school children regarding rabies is beneficial as it can act as herd immunity to increase awareness regarding rabies in general population. 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. Health education approach can be one of the 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. Further research is required in this field to combat this fatal ancient enemy called rabies.

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Institutional Ethics Committee

REFERENCES

- 1. Menezes R. Rabies in India: CMAJ. 2008;178(5):564-6.
- 2. Park K. Park's Textbook of preventive and social medicine, 23nd ed. Jabalpur, India: M/s Banarasidas Bhanot publishers. 2015:276-282.
- 3. Awate P. Current status of animal bites in Maharashtra, 15th National conference of Prevention & Control of Rabies. 2013:18.
- 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_201 3/en/index.html.
- 5. Singh US, Choudhary SK. Knowledge, attitude, behaviour and practice study on dog bites and its management in the context of prevention of rabies in a rural community of Gujarat. Indian J Community Med. 2005;30(3):81-3.
- 6. Sekhon AS, Singh A, Kaur P, Gupta S. Misconceptions and Myths in the management of animal bite case. Indian J Community Med. 2002;27(1):9-11.
- Prasad VS, Duggal M, Aggarwal AK, Kumar R. Animal bite management practices: a survey of health care providers in a community development block of Haryana. J Commun Dis. 2001;33(4):266-73
- 8. Kale KM. Dog bites in Children. IJCM. 2006;31(1).
- 9. 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.
- 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.
- 11. Patil SP, Singh VS, Chavan SS. Study of pretreatment practices and some of the epidemiological factors associated among dog bite cases attending outpatient department in tertiary care hospital. Int J Health Sci Res. 2014;4(4):34-9.
- 12. 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).
- Sudarshan MK, Mahendra BJ, Madhusudana SN, Ashwoath Narayana DH, Rahman A, Rao NSN, et al. An Epidemiological study of animal bites in India: results of a WHO sponsored national multi--centric rabies survey. J Commun Dis. 2006;38(1):32-9.

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