

Title: KNOWLEDGE AND PRACTICE OF PRIMARY CARE PROVIDERS
HEALTH CARE PROVIDERS AND SCHOOL TEACHERS
REGARDING HUMAN RABIES AND ITS PREVENTION IN A
RURAL AREA, NEAR BANGALORE

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Keywords Rabies, Knowledge, Practice, Post-Exposure Prophylaxis, School Teachers

Abstract Rabies is a fatal disease but preventable with timely management of the animal bites/ exposure. Primary care providers, Health care providers and School teachers constitute an important source of first level of contact for the wound management by the victims of animal bites in a rural community

Original Article

Knowledge and Practice of Primary Care Providers, Health Care Providers and School Teachers Regarding Human Rabies and its prevention in a Rural Area, near Bangalore

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ABSTRACT

Rabies is a fatal disease but preventable with timely management of the animal bites/exposure. Primary care providers, Health care providers and School teachers constitute an important source of first level of contact for the wound management by the victims of animal bites in a rural community.

Objectives: (1) to assess the knowledge and practice of primary care providers and health care providers regarding rabies and its prevention, (2) To assess the knowledge and practice of school teachers on rabies and its prevention.

Subjects and Methods: This cross sectional study was conducted over a period of 3 months in the rural field practice area of a medical college situated in Bangalore during the months of September - November, 2012. Primary care providers, Health care providers and School teachers were the study subjects, who were interviewed using structured, pre-tested questionnaire regarding their knowledge and practice on rabies and its prevention.

Results: All the study subjects had heard of rabies and majority of them knew it was fatal. But less than half of the primary care providers knew rabies could be transmitted by scratch (29.03%), lick on broken skin/mucous membrane (45.16%) and touching secretions of rabid animal (25.81%). Majority of study subjects didn't know the need of completion of antirabies vaccine schedule.

Conclusion: The knowledge of the study subjects on rabies was high; however information on modes of transmission and the dosage and site of antirabies vaccine administration was poor, emphasizing the need to educate health staff and school teachers regarding rabies and its prevention.

Key words: Rabies, Knowledge, Practice, Post-Exposure Prophylaxis, School Teachers.

INTRODUCTION

Rabies is a fatal zoonotic disease caused by RNA viruses of the Family *Rhabdoviridae*, Genus *Lyssavirus* (*L-4*). Virus is typically present in the saliva of clinically ill mammals and is transmitted through a bite.¹

Human mortality from endemic canine rabies was estimated to be 55 000 deaths per year (90% CI: 24 500–90 800) with 56% of the deaths estimated to occur in Asia and 44% in Africa. The majority (84%) of these deaths occur in rural areas. Deaths caused by rabies are responsible for 1.74 (90% CI: 0.25–4.57) million DALYs lost each year.²

In India, an estimated 20,000 human rabies deaths occur annually which constitutes 36% of the

rabies deaths in the world. 17.4 million animal bite cases occur annually in India. The animal bite incidence rate is 1.74%.^{3,4}

Rabies, though a fatal disease can be prevented by correct methods of wound management including washing the wound and post-exposure prophylaxis. Most of the deaths occur due to ignorance. Many post exposure prophylaxis are discontinued by patients. There is no comprehensive treatment possible after the clinical occurrence of rabies, which can result in mortality. After an animal bite, post-exposure rabies prophylaxis is the only way to prevent rabies disease.^{5,6}

People in the community have more faith in school teachers, health workers, anganwadi workers, to whom they approach following animal

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bites /exposure. Health care providers, Primary care providers and School teachers constitute an important source of first level of contact for the wound management by the victims of animal bites/exposure in rural community.

Hence the present study was undertaken with objective to assess the knowledge and practice of primary care providers, health care providers and school teachers regarding rabies and its prevention.

MATERIALS AND METHODS

The present study was a cross sectional study conducted over a period of three months in three Primary Health Centre (PHC) areas attached to a medical college situated in Bangalore during September - November, 2012. Primary care providers [Accredited Social Health Activists, Anganwadi Workers], Health care providers [Lady Health Vistors, Junior Health Assistants (male and female), Senior Health Assistants (male and female)] and School teachers were the study subjects. After institutional ethical clearance, All the primary care providers, health care providers and school teachers (20% of study area) in the study area were contacted and those who were willing to participate in the study were interviewed using the structured, pre-tested questionnaire and the information on knowledge and practices related to human rabies and its prevention was collected. A total of 73 study subjects [23 primary care providers, 8 health care providers, and 42 school teachers (20% of the study area)] were interviewed using the structured, pre-tested questionnaire.

The data was analyzed using statistical software SPSS version 17.0 Statistical tests used were descriptive statistics.

RESULTS

A total of 73 subjects were included in the study, comprising of 23 primary care providers, 8 health care providers, and 42 school teachers. All the study subjects had heard of rabies. Majority of them (69.57% of primary care providers, 87.50% of health care providers and 92.86% of school teachers) knew rabies was a fatal disease.

All the study subjects attributed rabies disease is transmitted by dogs. The other animals attributed for transmission of rabies, by the primary care providers were monkey (47.83%), cattle (30.43%),

Table 1
Distribution of study subjects on knowledge regarding modes of transmission of rabies

Mode of transmission*	Primary Care Providers (n=23)	Health Care Providers (n=8)	School Teachers (n=42)
Bite	23(100.00)	8 (100.00)	42(100.00)
Scratch	5(21.74)	4 (50.00)	9(21.43)
Lick on broken skin/ mucus membrane	8(34.78)	6 (75.00)	13(30.95)
Touching secretions of rabid animal	4(17.39)	4 (50.00)	14(33.33)
Drinking unboiled milk of rabid animal	10(43.48)	7 (87.50)	5(11.90)
Touching secretions of rabid person	3(13.04)	3 (37.50)	4(9.52)
Others**	-	2(25.00)	1(2.38)

Note: * Multiple responses, **contact with blood of rabid animal; Figures in parenthesis indicate percentages

and cat (26.09%). Similarly health care providers and school teachers attributed monkey (75.00%, 21.43%) and cat (50.00%, 21.43%) as the other common animals transmitting rabies. But 34.78% of primary care providers, 12.50% of health care providers and 14.29% of school teachers still believed rabies to be transmitted by rat.

All the study subjects knew rabies is transmitted by animal bite. But less than half of the primary care providers knew rabies could also be transmitted by scratch (29.03%), lick on broken skin/mucous membrane (45.16%) and touching secretions of rabid animal (25.81%). Similarly less than half of the school teachers knew rabies could also be transmitted by scratch (21.43%), lick on

Table 2
Distribution of study subjects on knowledge regarding No. of doses of antirabies vaccine (ARV) administration

No. of doses of ARV*	Primary Care Providers (n=23)	Health Care Providers (n=8)	School Teachers (n=42)
1	-	-	1(2.38)
2	1(4.35)	-	2(4.76)
3	9(39.13)	3(37.50)	13(30.95)
4	-	-	5(11.90)
5	7(30.43)	3(37.50)	5(11.90)
Don't Know	2(8.70)	1(12.50)	5(11.90)
Others**	5(21.74)-	1(12.50)	13(30.95)

Note: * Multiple responses** 7/9/14 injections; Figures in parenthesis indicate percentages

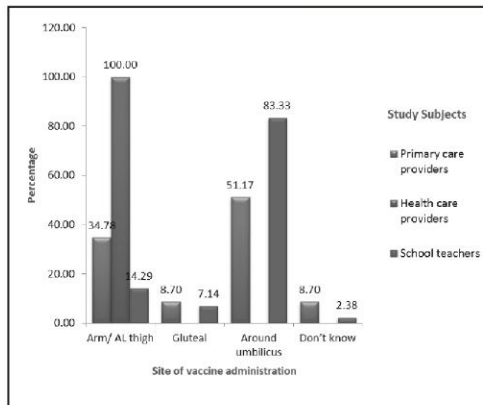


Fig. 1: Distribution of study subjects on knowledge regarding site of vaccine administration

broken skin/mucous membrane (30.95%) and touching secretions of rabid animal (33.33%). [Table-1]

Majority of the study subjects had a correct knowledge of washing the wound with soap and water with/without antiseptics (82.61% of primary care providers and 88.10% of school teachers). However few believed irritants to be applied to the wound as a first aid (8.70% of primary care providers and 11.9% of school teachers).

Knowledge regarding the number of antirabies vaccine (ARV) to be taken following animal bite/exposure was poor as only few (30.43% of primary care providers, 37.50% of health care providers and 11.90% of school teachers) knew 5 doses of ARV need to be completed following animal bite/exposure for complete protection against rabies. 21.74% of primary care providers, 12.50% of health care providers and 30.95% of school teachers still believed in 7 to 14 injections to be given for prevention of rabies. [Table-2]

Half of the primary care providers (52.17%) still believe antirabies vaccines are given around the umbilicus. Only 34.78% of them knew that antirabies vaccine should be given over arm/ anterolateral thigh. Only few (14.29%) of the school teachers knew that antirabies vaccine should be given over arm / anterolateral thigh but majority (83.33%) of them believe antirabies vaccines are given around the umbilicus. [Figure-1]

Majority of the primary care providers were not aware of rabies immunoglobulin (82.61%) and

intradermal route of antirabies vaccine administration (78.26%). Though the health care providers had knowledge of intradermal route of antirabies vaccine administration (62.50%) more than half of them did not know about rabies immunoglobulin (62.50%). Similarly majority of the school teachers were not aware of rabies immunoglobulin (88.10%) and intradermal route of antirabies vaccine administration (54.76%).

Majority of the primary care providers (73.91%), health care providers (100.00%) and school teachers (80.95%) have been approached by the animal bite/exposure victim for wound management. None of the primary care providers, health care providers and the school teachers have undergone any specific training in post-exposure/pre-exposure/re-exposure antirabies prophylaxis.

Among the health care providers who had administered the antirabies vaccine less than half (42.86%) of them have administered 5 complete doses of intramuscular doses of antirabies vaccine.

Majority of the study subjects (all health care providers, 90.32% of primary care providers and 61.90% of school teachers) have practiced wound washing with soap and water with/without antiseptics for an animal bite/exposure case and referred to allopathic doctor (78.57% school teachers) for further management of the animal bite/exposure victim.

DISCUSSION

The present study focused on the knowledge and practice of primary care providers, health care providers and school teachers, who act as first level of contact for the wound management by the victims of animal bites/exposure in rural community. Most of the times, in a rural community the victim's decision of wound management depend on suggestions/actions taken by these people to whom they approach first following an animal bite/exposure.

The present study revealed that majority of the study subjects knew rabies was a fatal disease, but still 30.43% of primary care providers either did not know or believed rabies as a non-fatal disease. This observation becomes important, as the animal bite victims who approach these persons may not

initiate proper wound management and complete the prophylaxis against rabies with an assumption of rabies being non-fatal.

Ichhpujani RL et al. in a study revealed that 60.7% of study subjects associate rabies with dog bite only. In our study interestingly all of the study subjects associated rabies transmitted by dog. Other common animals known to transmit rabies, by the study subjects were monkey and cat. However few study subjects in the present study still believed rabies to be transmitted by rat⁷.

Though all of the study subjects knew rabies is transmitted by animal bite, the knowledge of the study subjects regarding modes of transmission was inadequate, as less than half of the study knew rabies could also be transmitted by scratch, lick on broken skin/mucous membrane and touching secretions of rabid animal.

Sekhon AS et al. in a study revealed that only 21.2% animal bite/exposure victims practiced washing wound with soap/water. But in the present study majority of the study subjects (all health care providers, 90.32% of primary care providers and 61.90% of school teachers) had practiced wound wash with soap and water with/without antiseptics⁸.

However knowledge regarding the correct dosage and route of antirabies vaccine was poor which may become one of the reasons for discontinuation of antirabies prophylaxis among the victims. A study by Bhalla S et al. revealed that, the general practitioners and others lacked the knowledge regarding correct site of antirabies vaccine administration, as 56% of them preferred to give the antirabies vaccine in gluteal region. In the present study also, majority (83.33% of school teachers and 52.17% of primary care providers) of the study subjects believed that antirabies vaccines are given around the umbilicus.⁹

CONCLUSION

The knowledge of the study subjects on rabies was high; however information on modes of transmission and the dosage and site of antirabies vaccine administration was poor.

RECOMMENDATION

Behavioral change communication strategy on rabies and its prevention should be a part of the routine activities of the health staff. There is a need to educate the primary care providers, health care providers and school teachers regarding rabies and its prevention, as they are the first line of contact with the rural community.

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