

Rabies: Knowledge and Practices towards Its Prevention & Control among Multi-Purpose Health Workers of a Rural Area of West Bengal

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ABSTRACT

Background: - Rabies is a vaccine preventable zoonotic tropical disease that is neglected, but remained as a serious public health issue in India. It predominantly occurs in rural areas where preventive measures like proper post-exposure prophylaxis & vaccination of dogs are lacking. The study was conducted to see the existing knowledge and practices towards its prevention & control among multi-purpose health workers of a rural area of West-Bengal.

Method: a cross sectional descriptive study was carried out among the multi-purpose health workers of Amdanga block of North 24 Parganas, a district of West Bengal with the help of pre designed semi structured questionnaire. Data on demographic characteristics of the workers and their knowledge and practices were collected.

Result: The acceptable level of knowledge & practices towards prevention & control of rabies in human among the multi-purpose health workers were 51.7% & 72.4% respectively. They were higher amongst those with higher education & previous history of exposure to dog bite. Immediate health seeking advice & washing of wound with soap & water before going to doctor was practiced by 91.4% & 81% of the respondents respectively.

Conclusion: Both knowledge & practices towards rabies prevention in human were inadequate among the multipurpose health workers considering the 100% mortality of this disease.

Key words: KAP, multi-purpose health workers, vaccine, rabies.

INTRODUCTION

Rabies is a vaccine-preventable viral zoonotic disease which affects domestic and wild animals, and it spread to people through close contact with infectious material, usually saliva, via bites or scratches. [1] It is nearly always fatal & more than 95% of human deaths occur in Asia and Africa & dogs are the main source of infection in them. India, being the leading country where 20 000 (36%) of an estimated global annual 55 000 rabies deaths occur, three-quarters of them in rural area. [2] Rabies is a neglected tropical disease of poor and vulnerable populations whose deaths are rarely reported & where measures to prevent dog to human transmission have not been implemented. Also since the deaths are scattered it never gets the kind of attention as that of an epidemic. Rabies incidence in India has been constant for a decade, without any obvious declining trend, and reported incidence is probably an underestimation of true incidence because in India rabies is still not a notifiable disease. [3] This situation is rooted in a general lack of awareness of preventive measures, which translates into insufficient dog vaccination, an uncontrolled canine population, poor knowledge of proper post-exposure prophylaxis on the part of many medical professionals, and an irregular supply of anti-rabies vaccine and immunoglobulin, particularly in primary-health-care facilities.

The most cost-effective strategy for preventing rabies in people is by eliminating

rabies in dogs through vaccination. [4] Vaccinating such a huge dog population of estimated 280 lakh in India requires a political commitment & community spirit which is lacking. [5] For at least three decades WHO has fought to break the "cycle of neglect" affecting rabies prevention and control particularly in low- and middle-income countries through advocacy, surveys and studies and research on the use of new tools. WHO leads the collective "United Against Rabies" to drive progress towards "Zero human rabies deaths by 2030".

Knowledge, attitudes and practices (KAP) studies have been widely used around the world for different applications in public health based on the principle that increasing knowledge will result in changing attitudes and practices to minimize disease burden. There are many KAP studies on rabies amongst community people & Doctors. [6-9] But there are very few KAP study among multi-purpose health worker, who are the main primary health care providers in rural area where rabies death occur & remains undetected or notified.

In this context present study was conducted amongst multi-purpose health workers of a block of rural West-Bengal to assess their knowledge and practices towards rabies prevention & control.

MATERIALS AND METHODS

Present study was observational descriptive study, cross sectional in design conducted at Amdanga which is a block of North 24 Parganas district of West Bengal. It is situated at a distance of 38 kilometer from Kolkata, the state capital. The study was conducted in 2015-16 among the multi-purpose health workers of the block. As per information available from the Block medical officer of health office, there are 65 multi-purpose health workers working out of which 58 participated. Permission was taken from both CMOH of the district & Block Medical Officer of Health & a written consent was taken from the participants

before conducting the study after explaining the purpose of the study. A pre designed pre tested semi structured schedule was used to collect data from the participants. The schedule was prepared after extensive review of literature and was validated by two experts before pretesting on a similar study subjects in another block of West Bengal. There are 16 questions regarding assessment of knowledge of rabies awareness, its transmission, animals involved, its sequel, PEP treatment, methods of prevention in dogs & human. Similarly there were 8 questions regarding practices towards animal bite & its management. Each question has maximum 1 mark. As there were some questions with multiple answers, such questions answered partially correct were given appropriate marks. Those with wrong answers or no response were given 0 marks. Adequate knowledge and practices were considered if a participant scores 60% and above in respective categories.

Statistical methods: All the collected data were entered in MS Excel spread sheet. SPSS ver 17 was used to analyse the data. Frequency and percentages were calculated. Chi square test was performed to test the association. P value < 0.05 was considered statistically significant.

RESULTS

Individual characteristics including ownership of pet & exposure to animal bite

Total 58 multi-purpose health workers participated in the study. Out of them 10 were male and 48 were female. The mean age was 45.65 yrs (SD 8.29yrs) ranging from 31 to 60 years. Among them 17.2% were Muslims & the rest 82.8% were Hindus. Of them 37.9%, 29.3%, & 32.8% were matriculate, higher secondary & graduate pass respectively. Only 2 of the participants owned pet dog & pets were adequately vaccinated. Dog bite is a problem in field areas of 43.1% of the participants but people sought advice for post exposure prophylaxis (PEP) from

majority of them (89.7%). 29.3% of the participants either themselves or their family members were previously exposed to dog bite. Out of them 2 owned dog & 1 didn't receive PEP believing that PEP is not required because the pet is vaccinated & the other participant took only ARV but no immunoglobulin.

Awareness about the disease & knowledge regarding its transmission & sequel

All but one participant were aware that the disease occurs in both human & animals. Majority of the participants (91.4%) believe that it spreads from animals by bite and scratches only, whereas 8.6% believe that besides above it can also be spread by contamination of eyes or oral cavity with saliva of the infected animals. Besides all participants believing that dog spreads rabies, 65.5% responded for cat,

46.6% for monkey & 8.6% for rat also. 67.2% of the participants' belief that the disease is curable, 29.3% believe that it is not at all curable & 3.5% had no idea.

Knowledge regarding Post Exposure Prophylaxis (PEP)

58.6% of the participants believe that exposure to vaccinated pet doesn't require PEP, whereas 27.6% felt that it requires PEP & 13.8% had no idea. Bite by rat or human normally doesn't require PEP was believed by 74.2% whereas 24.1% felt it required & 1.7% had no idea. 51.7% of the participants believe that PEP is required for only transdermal bite by infected animal, whereas 13.8% believe that all exposures belonging to category 2 & category 3 exposure require PEP and the rest 34.5% believed PEP was required for various combinations of exposure belonging to category 2 & category 3.

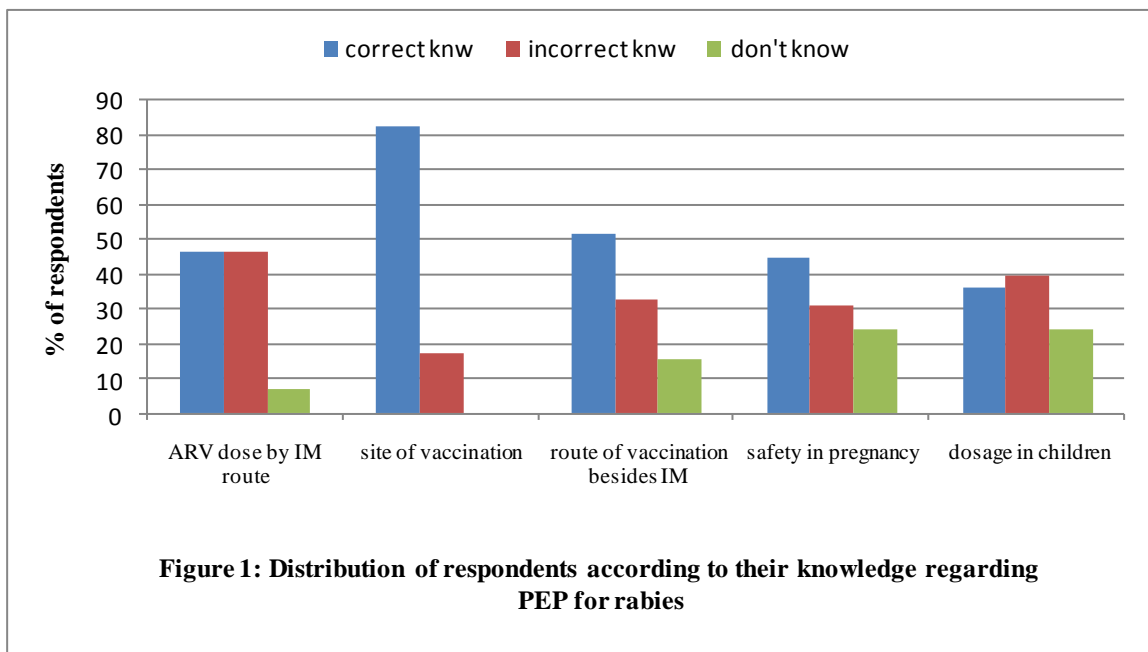


Figure 1: Distribution of respondents according to their knowledge regarding PEP for rabies

The correct doses of IM anti-rabies vaccine was known to 46.5% of the participants. 46.5% of the participants had wrong knowledge about the doses & 7% had no idea. Majority (82.8%) of the respondents had correct knowledge regarding site of ARV i.e. in deltoid region whereas 17.2% believed it to be given in abdominal area. Half (51.7%) of the

respondents knew about the intradermal route of vaccination in government hospitals whereas 15.5% had no ideas and 32.8% believed it can be given by sub cutaneous or intra venous route. Safety of the vaccine in pregnancy is believed by 44.9% of the respondents but 31% believed it was not safe in pregnancy and the rest 24.1% had no idea about it. The dose of vaccine in

children was not known to 24% of them and 39.75% of them believed to be half of that of adult dosage where as 36.3% of them knew that it was same as adult dose (Tab 1). Only 4 (6.9%) of the respondents knew about immunoglobulin & of them 3 knew where and when to be injected. Majority (94.8%) of the respondents knew about the requirement of PEP even in case of delay & the biting animal being not traceable where as the rest had no idea of action.

Majority (82.8%) of the respondents believed rabies in human can be prevented by wound washing and ARV (PEP) where as 17.2% of the respondents believed that ARV alone was sufficient. Control of rabies in dogs by means of vaccination was believed by 86.2% of the respondents where

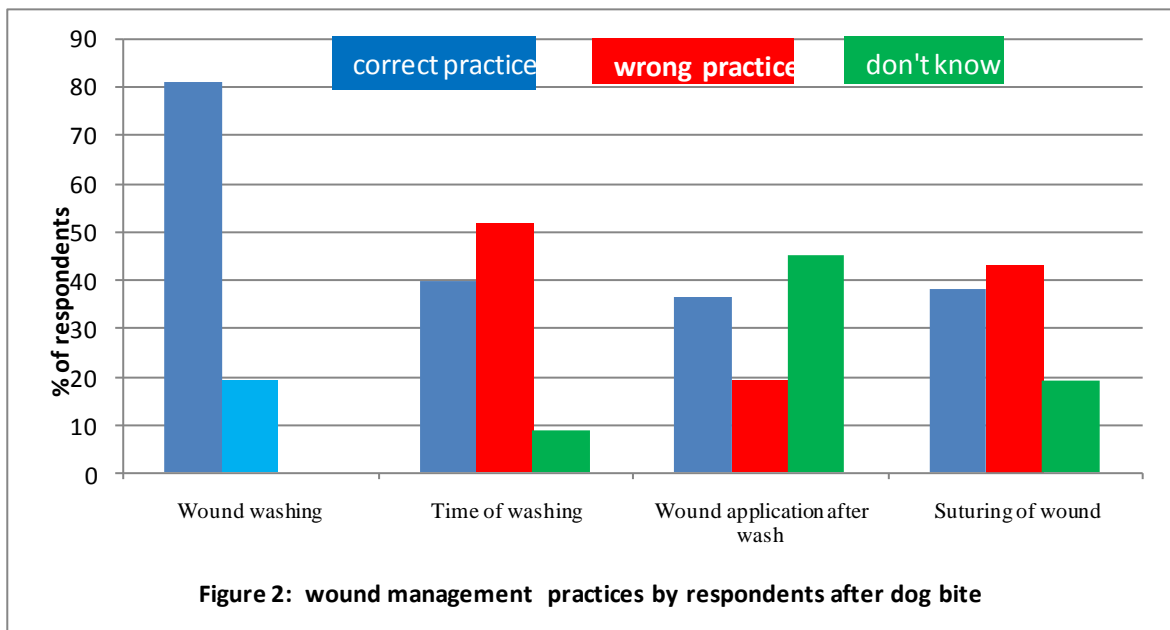
as 10.3% believed in killing & the remaining 3.5% had no idea.

Adequate level of knowledge was found in 51.7% of the respondents. Adequate knowledge was considered if a participant scored 60% and above knowledge questions.

Health seeking behaviors

Majority (91.4%) of the respondents refer patients immediately to hospital where as the rest (8.6%) of the respondents prefer sending the patient for advice after 10 days of observation of the biting dog. Re-vaccination after re bite / scratch was felt necessary by 32.8% of the respondents where as 44.8% of them felt it was not necessary & another 22.4% had no idea about it.

Management of wound after exposure to animal requiring PEP



Of those respondents (91.4%) referring patients immediately to hospital majority (81%) prefer wound washing with soap & water before sending to hosp or doctor for advice seeking where as the rest (10.4%) prefer sending to hosp or doctor immediately without doing anything. Thus the wound washing with soap and water was practiced by majority (81%) & the rest (19%) used water only for washing.

Washing time of 15 minutes was practiced by 39.7% of the respondents, the rest (51.7%) & (8.6%) washed for less than that or have no idea of required time respectively. Tincture iodine / povidone iodine application to wound after washing was practiced by 36.2% of the respondents where as 19% preferred anti-septic ointments or mercurochrome and 44.8% preferred nothing. 43.1% of the respondents

felt suturing of wound was necessary where as 37.9% felt suturing shouldn't be practiced & 19% had no idea (fig. 2).

Control of rabies in dogs

Majorities (87.9%) of the respondents preferred reporting to local Panchayat office or veterinary office & arrange for killing the rabid animal in case of biting spree than just killing the animal & bury them as felt by 12.1% of them.

Adequate level of practices was found in 72.4% of the respondents.

Adequate knowledge & practices were found in 51.7% & 72.4% respectively.

As shown in table1, of 58 respondents, It was found that knowledge is greater among respondents with (1) higher education, (2) lower age groups, (3) history of exposure to dog bite. Similarly practices are better among respondents with (1) higher education & (2) history of exposure to dog bite (Table 2). Whereas other determinants like gender, religion, residency, duration of service, history of ownership of pet, dog bite being a problem in the area & people seeking advice for dog bite had no influence on the knowledge & practices.

Table 1. Relation between knowledge and age, education and history of previous exposure(n=58)

Variable	Adequate knowledge	Inadequate knowledge	Total	Statistical test
Age group(Yrs)				
31-40	13 (65%)	7 (35%)	20 (34.5%)	$\chi^2=7.008$; df=2; p=0.03
41-50	13 (65%)	7 (35%)	20 (34.5%)	
41-50	4 (22.2%)	14 (77.8%)	18 (31%)	
Education				
X	4 (23.5%)	13 (76.5%)	17 (29.3%)	$\chi^2=23.43$; df=2; p=0.0000
XII	5 (26.3%)	14 (73.7%)	19 (32.7%)	
Graduate	14 (73.7%)	14 (73.7%)	22 (38%)	
H/o previous exposure				
Yes	16(94.1%)	1 (5.9%)	17(29.3%)	$\chi^2=14.99$; df=1; p=0.0001
No	14(34.1%)	14(34.1%)	41(70.7%)	

Table 2. Relation between Practice and education and history of previous exposure(n=58)

Variable	Adequate Practice	Inadequate practice	Total	Statistical test
Education				
X	9 (52.9%)	8 (47.1%)	17 (29.3%)	$\chi^2=7.493$; df=2; p=0.02
XII	12 (63.2%)	7 (36.8%)	19 (32.7%)	
Graduate	21 (95.5%)	1 (4.5%)	22 (38%)	
H/o previous exposure				
Yes	16(94.1%)	1(5.9%)	17(29.3%)	$\chi^2=4.238$; df=1; p=0.039
No	26(63.4%)	15(36.6%)	41(70.7%)	

DISCUSSION

Rabies though a 100% fatal disease can easily be prevented by adequate wound management together with immunisation in time. Adequate knowledge about the disease and its prevention in human and control in animal is felt necessary at all level of health care providers especially the primary health care provider like multi-purpose health workers in rural area where the disease is more prevalent. But, unfortunately wide gap existed in the knowledge among the health care providers. In studies conducted among interneers in Kolkata awareness about different aspect of rabies was lacking. [10] Another study by Bhalla et al among general practitioners in Jamnagar, Gujarat reported many wrong practices among them.

[11] Other studies also reported wrong knowledge and practices among doctors and community members in different parts of India. [6-9]

Multipurpose health workers are close to the community members. They provide home visit in their service area. Animal bite is a common problem in west Bengal and the multipurpose health workers can provide guidance for proper management if they had adequate knowledge. The present study showed many workers did not have proper knowledge and practice about different aspect of animal bite. Adequate level of knowledge & practices were found in 51.7% & 72.4% of the respondents respectively in the present study. A study conducted in Uttarakhand by

Kishore et al reported medium score in knowledge and low score in practice. [12] Another study conducted among health workers in Baramati, western India showed experienced and better educated staff had better awareness about animal bite management. [13] Chopra et al in their study among staff nurses in a medical institute in Lucknow reported that majority had poor grading of knowledge. [14] In a study in Vietnam important gaps in knowledge and awareness of public health workers were identified particularly in relation to routes of exposure to rabies virus and indications for rabies vaccine and rabies immunoglobulin. [15]

Health workers are the first contact person in the community to guide them for management of animal bite. As they do not have adequate knowledge, they could not practice properly. In the present study workers have inadequate knowledge about dose of vaccine, requirement of immunoglobulin, safety during pregnancy. Among them 56.2% believe that bite by a vaccinated dog doesn't require PEP. Only 4 % of the health workers in the present study knew about administration of Immunoglobulin in category 3 bite. In case of animal bite their practice of wound washing and application of Tincture iodine / Povidone iodine was correct only in 39.7% and 36.2% respectively. Study in Uttarakhand also reported poor knowledge about post exposure management. [12]

CONCLUSION

Adequate level of knowledge & practices were found in 51.7% & 72.4% of the respondents respectively. Though adequate practices were found among higher number of respondents but still it was not satisfactory. Multipurpose health workers are a primary health care provider who motivates rural people for seeking health advice & hence any dearth in their knowledge & practices towards a disease which has 100% mortality is detrimental to the society.

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