



Knowledge, attitude and practice about animal bite and rabies among victims attending a rural hospital in eastern India

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ABSTRACT

Rabies is highly prevalent in India. It is almost always fatal but preventable by timely administration of vaccine and proper wound care. Rural population have high disease burden. This may be partly due to lack of knowledge regarding the disease. Objectives- To identify the knowledge, attitude & practice of rural people attending in a rural hospital for animal bite management. Materials and Methods- Cross sectional observational study with 119 patients (period prevalence in February 2013). Results- Dogs were the main biting animal (87.4%). Children were the main victim(47.9%). 21% (25) of the respondent said that animal bite may lead to rabies. Neighbors were the main source of knowledge (38.7%). Mean duration of delay in presenting to hospital was 5.02 days. Roughly one third applied soap water to clean the wound. Attitude and practice was significantly associated with knowledge and attitude respectively ($p < 0.05$). Conclusion- Rural population lack enough knowledge on rabies. Targeted group approach like educating mother and children may help improving health care utilization correctly.

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INTRODUCTION

Animal bite and rabies are highly endemic in India.¹ The country has highest number of death burden worldwide contributing 36% of the total.² Exact case load is unavailable due to inadequate reporting. A community based multicenter survey³ showed the annual incidence to be 2 per 10000 population and total estimate being more than 20,000 annually. Rural population, younger age group and the low income group are reported to be the main victim.⁴

Dog is mainly responsible for spreading rabies in India. Other animals like cat, monkey, wolf and fox can also help in spreading the disease. Once developed, rabies is almost always fatal. Rabies is preventable to a large extent by appropriate wound care and vaccination.⁵ Many of the developed countries like United States have eliminated canine rabies. South and Central American countries

reduced the incidence of canine rabies by mass vaccination of dogs and prophylactic treatment of the exposed person.⁶ These countries are on the verge of eliminating the disease. The incidence has reduced much in many of the developing countries as well. In India, the disease is neglected so far. India has no national program for rabies control. Current policy in India is to ensure post exposure prophylaxis (PEP) with modern cell culture vaccine to the victims of animal bite. Ensuring PEP requires good logistic support including drugs and awareness of the people. Increased vaccine production and increase in overall economic condition of Indian people probably reduced the annual incidence of rabies. Utilisation of the health services is another important factor for reducing rabies incidence. It is partly dependent upon knowledge and attitude of the victims or their family members about rabies. Studies showed that people often lack knowledge of possible fate of animal bite



or importance of initial wound care following animal bite.^{7,8} High death rate may be due to wrong wound management, delayed presentation and myths and concepts associated with animal bite among rural population. All these factors lead to improper utilisation of the health service provided for animal bite management. To increase the utilisation of the service, it is therefore necessary to identify the potential factors that prevent rural people to get the treatment timely. Therefore this study was conducted to identify the knowledge, attitude & practice of people attending a rural hospital for animal bite management.

METHODOLOGY

Study Design

Cross sectional observational study

Study Setting

Singot Rural Hospital in Burdwan District of West Bengal. It is situated nearly 38 KM from Burdwan town. The hospital serves nearly 70,000 patients & daily average attendance is roughly 220 (including OPD and emergency) as per the hospital records.

Study Population

All patients attending the hospital with animal bite.

Study Period

February, 2013. The month was selected purposively.

Sample Size:

No sampling was done. All the new and old patients coming for ARV in the hospital during the given period were eligible to take part in the study. Total number of subjects was 119.

Study Variables

Age, sex, occupation, type of animal, severity of animal bite, site of bite, delay of presentation in days, initial management of wound before presenting to the hospital.

Data Collection

Data were collected using a pretested, non-validated schedule. Subjects/ guardians (if victim <14 years) were asked to take part in the study. Informed consent was taken from the patient or guardian as applicable. Data were collected from any of the parents present in case of children below 14 years.

Data Analysis

Data was analysed in SPSS version 20.0. Test of significance was done by chi-square test for dichotomous variables.

RESULTS

Total no. of new plus old cases of animal bite during the study period was 119. Distributions of the patients according to different variables are shown in Table no. 1.



Table 1 Distribution of the Victims according to Different Socio-Demographic Variables and Characteristics of the Animal Bite Attending Singot Rural Hospital, West Bengal (n=119)

Age (In years)	
Range-	1.50-75.00
Mean age-	23.90
SD-	19.14
Sex	
Male	80 (67.2%)
Female	39 (32.8%)
Occupation	
None*	27 (22.7%)
Student	35 (29.4%)
Home maker	15 (12.6%)
Working	42 (35.3%)
Type of animal	
Dog	104 (87.4%)
Cat	15 (12.6%)
Site of bite-	
Inferior extremity	86 (72.2%)
Superior extremity	22 (18.5%)
Trunk	2 (1.7%)
Head & neck	5 (4.2%)
Multiple site**	4 (3.4%)
Severity of animal bite [WHO]	
Class I	0 (0.0%)
Class II	15 (12.6%)
Class III	104 (87.4%)

* Others include: informal work, sales women, self-employed, student, nurse, teacher, receptionist, and housekeepers.

** More than one site irrespective of the severity

Note: Child ≤ 14 years comprise 47.9% (57 victims) of the total.

Knowledge of the patient was assessed by two questions. First, the possible fate of the animal bite for which victim has sought medical attention. Second, the duration required to develop the condition. The source of knowledge was also asked in addition. For children below 14 years, history was taken from parents. 'Attitude' as well as 'practice' was assessed by asking about the time gap between dog bite and presentation to the health care facility for the first time. Reason behind the time gap, methods of initial treatment of the local wound and the person advising for respective treatment of wound were also asked for.

21% (25) of the respondent said that animal bite may lead to rabies. 30.3% (36) of them said it may lead to 'poison in human body' which sometimes ascends to brain. Out of these 61 patients, 28 (45.9%) said that the condition may lead to death. Other responses were 'reflection of dog in water' (16.8%), 'giddiness' (5.9%), 'diphtheria' (1.7%), 'become a mad' (1.7%) and 'behave like a dog' (0.8%). 35 (29.4%) respondents had no idea. For the rest 84 patients, main source of knowledge was either neighbors (54.76%) or family members (15.48%). Book was the source in 10 (11.9%) cases. 15 (17.86%) respondents could not recall.



The duration required to develop the health event was mentioned by 12 (10.1%) respondents. Six of them (50%) have said that it takes 12 years while 2 mentioned it to be less than 15 days and rest 4 said in the range of 1-10 years. All of them heard it from their neighbours.

Mean duration of delay in presenting to hospital was 5.02 days, median being 3.0 days with a range from no delay to 60 days. One patient was excluded in

calculating mean as he presented after 6 years and considered as an outlier. 22 (18.5%) patients came immediately or within one day (≤ 24 hrs) of animal bite. The author considered it as 'no delay'. Among the rest 97 cases cause of delay has been shown in table 2. Other less common causes include 'fear of getting scolded' in case of children, busy with 'religious ceremony' or 'cultural ceremony' and incidence of animal bite 'took place outside'.

Table 2 Distribution of Patients according to Cause of Delay in Presenting to Hospital (n=97)

Cause of delay	Frequency (%)
Arranging 'Panchayat Certificate'	43 (44.3)
Ignorance	13 (13.4)
Non-availability of the family members	10 (10.3)
Lack of transport	9 (9.3)
Fear of wedge loss	6 (6.2)
Other causes	16 (16.5)

Type of initial wound management is shown in table 3. Persons suggesting the initial wound management were mainly family members and neighbours (53%). Within the family, female members contributed in 91.3% of decision making for the initial

wound management. Other advisors included quacks and trained health personnel. One victim got the information from television. 24 (20.2%) victims took care of their wound by themselves and failed to remember their source of information.

Table 3 Distribution of Patients according to Methods of Initial Wound Management (n=119)

Initial wound treatment	Frequency (%)
Nothing applied	24 (20.2)
Water only*	29 (24.3)
Soap water	36 (30.3)
Heat cauterisation	7 (5.9)
Antiseptic ointment	3 (2.5)
Multiple**	13 (10.9)
Other modes***	7 (5.9)

* Two victims applied warm water

** They applied combination of methods mentioned above

*** Includes application of lime, toothpaste, 'ghee', 'neem' (Margo) leaves, turmeric and suturing the wound by quack.



The author transformed all the three major variables viz. 'Knowledge', 'attitude' and 'practice' into binary outcome variable as 'favourable' and 'unfavourable' for applying statistical tests (Chi-square). In 'knowledge' section 'favourable' includes knowledge of 'rabies' and chance of 'death' and rest of the answers were considered as 'unfavourable'. Favourable 'attitude' and 'practice' include early presentation within one day and application of either soap water or water. Victims who applied nothing over the wound but presented within one day to hospital were also considered as 'favourable' practice. With this attitude of the victims or family members (as applied) significantly associated with knowledge ($p= 0.04$). Practice is significantly associated with attitude ($p= 0.001$) but not with knowledge ($p=0.09$).

DISCUSSION

In the present study majority of the offending animals were dog (87.4%) followed by cat (12.6%). Almost all the age groups were affected. Under 14 year children were the main victims (47.9%). Male were affected in almost two third of the cases. Other studies(3,9) also showed the similar findings. In one large community based study, majority of the victims were children (38.3%) and showed male preponderance.(3) Working population and students were more affected may be due to higher exposure to the offending animals.

The inferior extremity was affected mostly (72.2%) may be due to easy accessibility. All the five injuries affecting head and neck were associated to children group. Majority (87.4%) of the cases belong to class III bite and rest class II. Less number of class I and II may be due to ignorance. Other studies also showed similar kind of findings with minimal reporting of class I bite.^{10, 11}

Although all the patients came for taking injections, roughly one fifth of them 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. Other responses were not according to present biological knowledge.

Source of knowledge were mainly neighbours or family members (>50% together) far exceeding

educational material (11.9%). This is probably because rural population shared ideas among themselves and lack of education.

10.1% of the respondents commented on duration to develop the health condition which varies from 6 days to 12 years but maximum (50%) were in favor of 12 years which indicates the possibility of a common source of knowledge.

More than four fifth of the patients presented late (>24hours) to hospital. Cause of delay was mainly the time required for arranging the 'Panchayat certificate' which allows them to get the injection free of cost. Ignorance, social and economic causes were the other factors. Victims often gave priority to earning livelihood than visiting a hospital.

Initial wound management with soap and water (recommended method) was done by 30.3% of the victims. Poor management like ignorance, application of common home available materials like lime or toothpaste, heat cauterization are prevailing among the victims. Application of lime, chilli paste, turmeric and other indigenous substances have been reported by other studies.(11–14) In most of the cases source of knowledge was either family members or the neighbours. This is probably because of the social structure of the village. Schools/ educational materials play little role.

CONCLUSION AND RECOMMENDATION

Rural population lacks enough knowledge regarding animal bite management and its possible fate. Even the people who come for vaccination, often doesn't know for what they have come for. This is reflected by long delay in presenting to a hospital and application of certain things in wound which are not medically accepted. As the study was based on hospital, the exact community situation is missing. The author could come across only those who attended the hospital. Data are missing on those who didn't seek any treatment, went to quacks or private doctors.

Before going for any remedial measures, it must be considered that rural social structure is often different than what is anticipated. Groups of women



often share ideas and decide on possible action. If women in the middle age group, who use to take care of children, are educated on health issues like animal bite, may help a lot.¹⁵ As children are often the sufferers, education on rabies and primary wound management through School health program may help. Finally from the health care provider point of view, post exposure prophylaxis can't prevent rabies transmission. People should get enough awareness raising program on animal bite and rabies prevention.¹⁶ Other measures like dog vaccination may be less relevant in rural settings as people don't have pet dogs often.

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