

KNOWLEDGE AND AWARENESS REGARDING RABIES AND RESPONSE TO DOG BITES AMONG RESIDENTS OF RURAL AREA, GURUGRAM

Community Medicine

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ABSTRACT

Introduction: Rabies is a major public health problem in India. Despite the tremendous progress in vaccination, rabies is widely prevalent in India. About 15 million people get animal bite, every year and need post-exposure prophylaxis.

Objectives: 1.) To ascertain the knowledge and awareness regarding rabies among the residents of rural Gurgaon. 2.) To assess the response towards dog bite among them.

Methodology: A cross-sectional study was conducted among the residents of a village catered by RHTC, SGT Medical College Gurugram during March 2018 to June 2018. Systematic random sampling technique was used to recruit the study participants and the total study participants selected were 120. Pre-designed, semi structured questionnaire was used for data collection.

Results and Discussion: Around 98.3% of the respondents heard about rabies. Nearly 98% of the respondents knew that rabies can be prevented by vaccination and only 32.2% subjects knew to wash the wound with soap and water and 38.9% respondents had faith in application of indigenous substances on wounds like chillies, turmeric, and herbal paste.

Conclusion: There is a need for generating more awareness about animal bite and rabies.

KEYWORDS

Rabies, Dog bite, Animal bite, Knowledge, Awareness

INTRODUCTION

Rabies is an epizootic and enzootic disease of worldwide importance. Globally, two persons die every hour due to rabies.^[1] It is a 100% fatal disease which is caused by a single stranded RNA virus belonging to genus *Lyssavirus* of the family *Rhabdoviridae*.^[2] Despite of the tremendous progress in vaccination, its prevalence is still high. As per WHO estimate, globally 50,000 human rabies deaths are reported every year of which, 56% occur in Asia and 44% in Africa. The majority (84%) of these deaths occur in rural areas.^[3] Rabies in India has been a disease of low public health priority in the medical sector. This is very unfortunate as almost 50,000 deaths from rabies occur across the globe of which, 20,000 occur in India every year, making it the country with the highest rabies fatalities in Asia and the second highest in the world.^[4] It is estimated that the number of deaths due to rabies may be 10 times more than that of the reported. Further, there is no comprehensive treatment possible after clinical occurrence of rabies, which invariably results in mortality. After an animal bite, post-exposure rabies prophylaxis is the only way to prevent rabies.^[5] There are many myths and false beliefs associated with wound management. These include application of turmeric powder, oils and red chillies on the wounds inflicted by suspect rabid animals, and not washing the wound properly.^[6] In this context community awareness plays a major role. Factors like high case fatality, lack of access to health care, ignorance and high cost of treatment on one hand and availability of appropriate and early treatments on the other hand, are to be considered to cut down the mortality due to rabies.^[7] In view of the observation that the patients report late, seek partial treatment and harbour many myths and misconceptions, it was thought pertinent to study the knowledge and awareness regarding various aspects of animal bites and rabies so as to develop locally applicable set of Information, Education and Communication (IEC) services, which is to be delivered to the population so as to reduce the mortality and morbidity due to animal bites and rabies. As there are less community-based studies on this health problem in Gurugram, the current study was planned to assess knowledge and awareness related to animal bite among the residents of a village catered by rural health training centre, Gurugram with the following objectives:

- 1.) To ascertain the knowledge and awareness regarding rabies among the residents of rural Gurgaon.
- 2.) To assess the response towards dog bite among them.

METHODOLOGY

The community based cross-sectional study was conducted in a village

catered by rural health training centre (RHTC), SGT Medical College Gurugram from March 2018 to June 2018. Due to paucity of data from rural Haryana, the prevalence of dog bite was assumed to be 50%. Considering relative allowable error to 20% error at 95% confidence interval and 20% non response rate, the sample size calculated was [8]. Systematic random sampling was done to recruit the study subjects. House to house survey was done and information was collected using the pre-designed, semi structured questionnaire. Data was entered in Microsoft Excel and after data cleaning; it was analyzed using Epi info 7 software. The results obtained were recorded and were presented as tables and appropriate diagrams.

Ethics statement

The purpose of the study was explained to each individual and they were informed that participation was voluntary and data collected will be kept confidential. The participants who agreed were asked to sign/or provide thumb impression on the consent form.

RESULTS

A total of 120 household residents were interviewed during the study period. Prevalence of dog bite in last one year was found to be 10.8% and the prevalence of dog bite ever was found to be 28.3%. The mean age of the study participants were 42.56 ± 13.70 years and the majority of the respondents were females (64.2%). All of the participants i.e. 120 (100%) belonged to Hindu religion and nearly 51 (42.5%) were employed and 69 (57.5%) were unemployed. [Table 1]

Knowledge and awareness of study population regarding animal bite/ rabies

Out of 120 study population, 118 (98.3%) heard about rabies. Among the 118 study population, 98.3% reported that dog bite can lead to rabies; the second most common response was bite from a monkey i.e. 51.7%. (Fig-1) Among the 118 study population, 96 (81.4%) were aware that scratch/ bite of an infected animal can spread rabies and almost 87 (73.8%) believed that dog bite leads to infection.

Out of 118 aware study population, around 87.2% knew that consulting a doctor after animal bite is necessary but only 32.2% subjects knew about washing the wound site with soap and water. However, almost 38.9% were following traditional methods following animal bite i.e. application of chillies/lime/kerosene [Fig-2] but majority knew that vaccine is available for prevention of rabies, around 104 (88.1%) knew that rabies vaccines were available at

district hospitals and around 41 (34.8%) assumed that 14 injections were given after the animal bite and the main site of injection was abdomen (60.2%). Majority of the study population i.e. 116 (98.3%) believed that there are chances of survival following the animal bite. [Table-2]

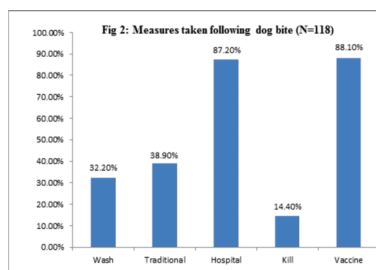
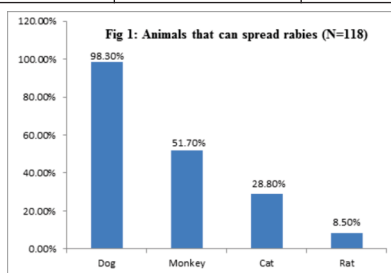
Out of 120 study population, majority 59.3% reported that they got information about animal bite from family/friends and only 16.1% study population reported source of information as health personnel's. [Fig-3]

Response of study population following the animal bite

Of the 120 study population, 13 (10.8%) had history of animal bite in their family within last one year and 34 (28.3%) had history of animal bite ever in their family. Out of which, majority 34 (72.4%) consulted the doctor and undergone with rabies vaccine after animal bite but only 29 (61.7%) had complete their course and only 15 (31.9%) washed the wound with soap and water. Majority of the victims (74.5%) undergone with tetanus immunization. Victims also reported that site of injury was mainly lower limb (82.9%) and most of them (53.2%) had moderate type of injury. Only 8 (17.1%) received immunoglobulin after animal bite. Most of the victims (97.9%) observed for the animal/dog status after the bite, out of which 33 (70.2%) reported that dog was alive after the bite but 13 (27.7%) killed the animal/dog. About 57.6% victims were of opinion that health education should be imparted for rabies prevention and control followed by prohibition of dogs in public places and street (42.4%) as maximum of the victims were bitten by stray and community dogs at outdoor places. About 97.9% victims were of opinion that dog population should be controlled, out of which 30 (65.2%) believed that dogs should be handed over to municipality. [Table-3]

[Table-1]: Sociodemographic Profile (N=120)

Gender	Frequency	Percentage
Male	43	35.8%
Female	77	64.2%
Educational Status		
Illiterate	23	19.2%
Primary	41	34.2%
Secondary	46	38.3%
Graduate	10	8.3%
Occupation		
Employed	51	42.5%
Unemployed	69	57.5%
Religion		
Hindu	100%	

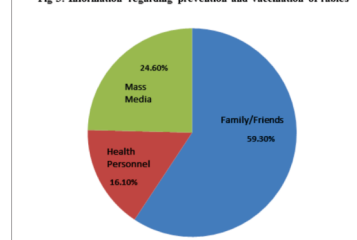


[Table-2]: Knowledge and awareness about animal bite/rabies

Heard about rabies (N=120)	Frequency	Percentage
Yes	118	98.3%
No	2	1.7%
Transmission route (N=118)		
Scratch/bite of infected animal	96	81.4%
Contact with saliva	22	18.6%

Prevention by vaccination (N=118)		
Yes	116	98.3%
No	2	1.7%
Consequences of dog bite (N=118)		
Infection	87	73.8%
Rabies	18	15.2%
Death	13	11.0%
Availability of rabies vaccine (N=118)		
District hospital	104	88.2%
Pharmacy	14	11.8%
No of injections given (N=118)		
3	19	16.1%
4	24	20.3%
5	14	11.9%
10	20	16.9%
14	41	34.8%
Site of injury (N=118)		
Abdomen	71	60.2%
Arm	47	39.8%
Chances of survival (N=118)		
Yes	116	98.3%
No	2	1.7%
Attitude towards dogs (N=118)		
Love	27	22.9%
	52	44
Frightened		
Streets should be free	39	33.1%

Fig 3: Information regarding prevention and vaccination of rabies



[Table-3]: Response to dog bite

	Frequency	Percentage
Bitten by dog in last 1 year	13	10.8%
Bitten by dog ever	34	28.3%
Type of attacking dog N=47		
Own dog	2	4.3%
Pet dog of another	13	27.7%
Community dog	16	34%
Stray dog	16	34%
Localisation of accident		
Indoor	10	21.3%
Outdoor	37	78.7%
Type of bite		
Provoked	8	17.1%
Unprovoked	39	82.9%
Severity of injury		
Mild	20	42.55
Moderate	25	53.2%
Severe	2	4.3%
Depth of injury		
Superficial	28	59.6%
Median	17	36.2%
Deep	2	4.3%
Site of injury		
Lower	39	82.9%
Upper	8	17.1%
Depth of injury		
Superficial	28	59.6%
Median	17	36.2%
Deep	2	4.2%

Wash with soap and water		
Yes	15	31.9%
No	32	68.1%
Type of Treatment		
Self	13	27.6%
Hospital	34	72.4%
Undergone with rabies vaccine		
Yes	34	72.4%
No	13	27.6%
Completed the course of vaccination		
Yes	29	61.7%
No	18	38.3%
Received TT		
Yes	35	74.5%
No	12	25.5%
Received immunoglobulin		
Yes	8	17.1%
No	37	78.7%
Dog status		
Alive	33	70.2%
Kill the dog	13	27.7%
Don't know	1	2.1%
Control of dog population		
Yes	46	97.9%
No	1	2.1%
Methods of control		
Taken by Municipality	30	65.2%
Immunization of dogs	16	34.8%

DISCUSSION

Of all the study subjects majority i.e. 98.3% knew about rabies in the present study, this finding was comparable to a study conducted by Kamble B et al^[7] in urbanised village Aliganj, New Delhi which reported it as 75% and also by P. Lai et al^[9] which reported it as 68.5%. About 98.3% of the study population knew dog bite as a reason for causing rabies, this was higher than another studies which reported awareness level to be 73.9% and 61.1% in the study population in urbanised villages of New Delhi^[7,9]; however, it was lower than a study which reported 98.6% of the rural population in Gujarat to be aware of rabies.^[10] About 98.3% of the current study population knew that rabies is vaccine preventable, this was higher than the reported levels of 89.1% and 49.2% in a study population of urbanised villages of New Delhi^[7,9] and 86.6% in the study population of Gujarat.^[10] This could be probably because of larger number of stray dogs and greater incidence of animal bites in current study area i.e. village catered by rural health training centre (and rural areas of Gujarat) as compared to urbanised areas of New Delhi, another reason could be the vicinity of the study population to tertiary care hospitals. Only 32.2% study subjects in the current study practiced washing of the wound with soap and water, this was substantially low as compared to 41.3% in the study by P.Lai et al^[9] and 39.5% reported in a study by M.K. Sudarshan et al.^[2] This could be due to lower awareness level among the rural households in the current study area due to poor access to internet or other means of mass media and poor educational status. The use of home remedies such as lime, chillies, kerosene etc. in case of animal bite was of the level of 38.9% in present study and this was almost similar to the national data of India i.e. 36.8% as reported by a multicentric study conducted by M.K.Sudarshan et al.^[2] Another study by V. Shah et al reported application of indigenous material over wound as 67%.^[6] Thus, more awareness needs to be generated against the use of these household remedies.

CONCLUSION

Ninety eight percent of the study population in village catered by rural health training centre have heard of rabies, as an illness caused by animal bite, scratch, aerosols or licks. Ninety eight percent of population consider vaccination a necessary measure in the prevention of rabies. Only 32.2% of the study subjects think that the wound site should be washed with soap and water. Of those, 38.9% still believe in the traditional practice of applying household and herbal products which include turmeric, chillies etc as a first aid measure. More than 59.3% of the study population have obtained their knowledge from family and friends. The residents of field practicing area of SGT, Gurugram are more aware about animal bite and rabies as compared to previous studies carried out in urbanised villages of New Delhi.

However, the use of home remedies is still prevalent. Thus, there is a need for generating awareness about animal bite and rabies.

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