Original Research Article

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A study to assess the knowledge regarding rabies prevention among general population of community residing at Pratap Nagar, Jodhpur, Rajasthan

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ABSTRACT

Background: Rabies is a major public health issue. It is 10th biggest cause of death due to infectious disease worldwide and continues to be a burden for India with the country still registering around 18,000 to 20,000 cases of rabies every year. It is the only communicable disease of man that is always fatal. Domestic dogs are most common reservoir of virus, with 99% of human death caused by dog mediated rabies. Rabies is completely curable by early diagnosis and treatment regimen.

Methods: Present study has been carried out among general population of community residing at Pratap Nagar, Jodhpur, and Rajasthan. Quantitative research approach was used to assess the knowledge regarding rabies prevention. Data was collected through self-structured interview schedule. Sixty samples were selected by non -probability convenient sampling technique.

Results: In the study there were 60 subjects, in which male were 28 and female were 32. 7 subjects had excellent knowledge, 34 subjects had good knowledge, 17 subjects had average knowledge and 2 subjects had poor knowledge. No personal variable was found to be in association with level of knowledge at p<0.05 level of significance.

Conclusions: The study indicates that awareness session on rabies prevention should be held regularly to improve the knowledge and create positive attitude and remove the misconception among general population.

Keywords: Assess, Knowledge, Rabies, Prevention, General population, Community

INTRODUCTION

Rabies, also known as hydrophobia, is an acute viral disease that affects central nervous system, causing acute encephalitis in warm blooded animals including mammals. The virus responsible for rabies is Lyssavirus

type I (which is derived from the Greek word lyssa meaning 'madness').²

Rabies is estimated to cause 59,000 human deaths annually in over 150 countries, with 95% of cases occurring in the Asia and Africa regions. In Asia estimated human deaths due to rabies are 35,172 per year. India accounts for 59.9% of rabies death in Asia and 35% of

death globally.³ In bulletin of the WHO (2014), India reportes about 18,000 to 20,000 cases of rabies each year. WHO bulletin also shows a study conducted by Sudarshan MK (2005) to assess the burden of human rabies in India. In which 70% of the people in India have never heard of rabies, only 30% know how to wash the wounds after animal bites, and those who get bitten, only 60% receive a modern cell culture derived vaccine. It is the only communicable disease of man that is always fatal. Domestic dogs are most common reservoir of virus, with 99% of human death caused by dog mediated rabies. Although all age groups are susceptible, rabies is most common in children aged less than 15 years.⁴ In India, rabies affects mainly people of lower socioeconomic status.⁵ There are many myths and false beliefs associated with wound management present among people.6 The source of infection to man is the saliva of rabid animals. In dogs the virus may be present in the saliva for 3-4 days before the onset of clinical symptoms and during the course of illness till death. People are infected following a deep bite or scratch by an infected animal. Once virus of rabies is inside the body, it replicates in muscles or connective tissue cells at wound site gaining access to peripheral nerve then to central nervous system and multiplies there. Once virus reaches brain, its further replicates and results in encephalitis.1

The incubation period in dogs ranges from 3-8 weeks, but it may be as short as 10 days or a year or more. Clinical manifestations in dog with rabies are change in behavior (become aggressive), biting without provocation, change in voice, excessive salivation, eating abnormal items like stick, nail, mud etc. Clinical manifestation in man are in two forms which include 'furious rabies' that exhibit the classic signs of hyperactivity, agitation, hydrophobia, aerophobia, with death occurring within two to three days and 'paralytics' or 'dumb rabies' that is less dramatic and causes death from muscular paralysis.

Almost all human cases of rabies were fatal until a vaccine was developed in 1885 by Louis Pasteur and Emile Roux.8 There is no effective curative treatment for rabies once clinical signs have appeared. Treatment and prevention of rabies is done by case management, local treatment of wound, immunization, and pre and post exposure prophylaxis. In case of rabies in dogs, prophylactic vaccination of dogs against rabies is one of the most important weapons in rabies control. Other methods are registration and licensing of domestic dogs, restraints of dogs in public places, quarantine for about 6 months of imported dogs, health education to people regarding dog care, immunization, and rabies prevention.1 WHO promotes mass dog vaccination campaigns, dog population management, and oral vaccination for domestic carnivores. WHO also promotes wide access to appropriate post-exposure treatment, domestic production of rabies biological (particularly immunoglobulin), continual health education to public and veterinary professional in rabies prevention and control.9

METHODS

The present study was carried out to assess the knowledge regarding rabies prevention in community, Pratap Nagar, Jodhpur, Rajasthan. In this study, quantitative research approach was used to assess the knowledge regarding rabies prevention in community, Pratap Nagar, Jodhpur, Rajasthan. The population was general population under age group 18 to 60 years of age residing in urban area of Pratap Nagar, Jodhpur, Rajasthan. Non-Probability Convenient sampling technique was adopted for this study. The self-structured questionnaire method was adopted for data collection. Self-structured knowledge questionnaire was prepared for assessing the knowledge of general population regarding prevention of rabies based on the review of research and non-research literature and opinion of experts.

The data was collected using self-structured questionnaire consisting of two parts: (a) Part A-items of demographic variables like age, gender, education, economic status; and (b) Part B- self-administered questionnaire on knowledge regarding prevention of rabies. Self-administered questionnaire had 30 questions for assessing the knowledge regarding rabies prevention, every correct answer was given a score of 1, and incorrect answer was given score of zero. Unanswered response was marked as 0. The domains of the questionnaire were- general awareness about rabies, primary prevention, secondary prevention and tertiary prevention. Table 1 shows the weightage of questions in self-administered questionnaire with regard to domains.

Table 1: Domain wise weightage of self-administered questionnaire.

Domains	Weightage (%)				
General awareness	40				
Primary prevention	16.67				
Secondary prevention	36.67				
Tertiary prevention	6.66				

Validity of the tool was established by opinion of panel of experts. Suggestion of the experts was incorporated and tools were modified accordingly. The reliability of the tool was tested through Kuder-Richardson formula 20. The reliability for the self-structured tool was found to be 0.68. Thus, tool was found to be reliable.

RESULTS

The analysis of data is presented in the following section. For analysis and interpretation of the collected data, descriptive and inferential statistics were used. The statistical analysis was done by SPSS 23 version. The data were summarized as mean, frequency, percentage and standard deviation. The Chi square test was used to test the association.

Findings related to demographic variables of general population residing at Pratap Nagar, Jodhpur, Rajasthan

Table 2 depicts that 46.66% of subjects were male and 53.33% were female. 40% subjects were in age group of 18-28 years, whereas 15% were in age group of 29-39 years, 16.66% were in the age group of 40-50 years and 28.33% were in age group of 51-60 years.

As regard to family income, 70% subjects had family income less than rupees 10000, 18.33% subjects had family income between rupees 10000 to 35000, 8.33% subjects had family income between rupees 36000-60000 and 3.33% subjects had family income more than rupees 60000 per month.

Educational status- 13.33% had no formal education, 15% had primary education, 28.33% had secondary and senior secondary education and 43.33% had graduation degree and above.

Table 2: Frequency and percentage distribution of demographic variables.

Variables	Frequency	Percentage (%)
Age (years)		
18 to 28	24	40
29 to 39	9	15
40 to 50	10	16.66
51 to 60	17	28.33
Gender		
Male	28	46.66
Female	32	53.33
Education		
No formal education	8	13.33
Primary education	9	15
Secondary and senior	17	28.33
secondary education		
Graduation and above	26	43.33
Economic status (Rs.)		
Less than 10,000	42	70
10,000 to 35,000	11	18.33
36,000 to 60,000	5	8.33
More than 60,000	2	3.33

Findings related to knowledge of the general population residing at Pratap Nagar, Jodhpur, Rajasthan

Knowledge regarding prevention of rabies was assessed by self-structured interview schedule consisting of 30 questions After obtaining data of 60 samples, the grading of the score was done out of the total score of 30.

Scoring

Correct response is scored as 1, incorrect response is marked as 0 and unanswered response is marked as 0.

Table 3 depicts that 13.33% people had poor knowledge (12 or <12 i.e.; <40%), 36.66% had average knowledge (13 to 18 i.e.; 41-60%), 46.66% had good knowledge (19 to 24 i.e.; 61-80%) and 3.33% had excellent knowledge (25 to 30 i.e.; 81-100%).

Table 3: Mean percentage score of various domains of self-administered questionnaire.

Domains	Mean (%)	SD
General awareness	64.58	1.8651578
Primary prevention	53.6	1.2952543
Secondary prevention	60.27	2.0908734
Tertiary prevention	63	0.8206378

Table 4 shows the mean percentage score of questions related to various domains of self-administered questionnaire. Mean percentage score of general awareness is 64.58% with SD of 1.86.

Mean percentage score of questions regarding primary prevention is 53.6% with SD of 1.29, whereas mean percentage score of domains related to secondary and tertiary prevention were 60.27% and 63% with SD of 2.090 and 0.820 respectively.

Findings related to association between knowledge score and demographic variables

To determine the significant association between knowledge score of subjects with selected demographic variables, following research variables were selected: age, gender, education and economic status.

Table 5 depicts that no personal variable was found to be associated with level of knowledge at p<0.05 level of significance.

Major findings

(a) Gender: 46.66% of subjects were male and 53.33% were female; (b) Educational status: 13.33% had no formal education, 15% had primary education, 28.33% had secondary and senior secondary education and 43.33% had graduation degree and above; (c) Age: 40% subjects were in age group of 18-28 years, whereas 15% were in age group of 29-39 years, 16.66% were in the age group of 40-50 years and 28.33% were in age group of 51-60 years; (d) Family income: 70% subjects had family income less than rupees 10000, 18.33% subjects had family income between rupees 10000 to 35000, 8.33% subjects had family income between rupees 36000-60000 and 3.33% subjects had family income more than rupees 60000 per month; (e) Level of knowledge - 13.33% people had poor knowledge (12 or <12 i.e.; <40%), 36.66% had average knowledge (13 to 18 i.e.; 41-60%), 46.66% had good knowledge (19 to 24 i.e.; 61-80%) and 3.33% had excellent knowledge (25 to

30 i.e.; 81-100%); and (f) Association of knowledge score of subjects with selected variables- no personal variable

was found to be associated with level of knowledge at p<0.05 level of significance.

Table 4: Criteria to assess knowledge level, frequency, percentage, mean and standard deviation of findings.

Criteria to assess knowledge level	Frequency	Percentage (%)	Mean	SD
Excellent (25-30 i.e.; 81-100%)	2	3.33		•
Good (19 to 24 i.e.; 61-80%)	28	46.66	10.22	4.1739
Average (13 to 18 i.e.; 41-60%)	22	36.66	— 18.33	4.1739
Poor (12 or less than 12 i.e.; <40%)	8	13.33		

Table 5: Association of level of knowledge score and selected socio-demographic variables.

		Knowledge level			Chi	Table	Degree	Significant/
Variables	E	G	A	P	square	value	of freedom	non- significant
Age (years)								
18 to 28	1	7	12	4	8.35	16.92	9	Non- significant
29 to 39	1	5	2	1				
40 to 50	0	7	2	1				
51 to 60	0	9	6	2				
Gender						7.82	3	Non- significant
Male	1	14	8	5	1.87			
Female	1	14	14	3				
Education						16.92	9	Non- significant
No formal education	0	3	4	1	11.83			
Primary education	0	3	5	1	11.65			
Secondary and senior secondary education	0	6	6	5				
Graduation and above	2	16	7	1				
Economic status (Rs.)								
Less than 10,000	2	17	17	6	5.04	16.92	9	Non- significant
10,000 to 35,000	0	6	3	2				
36,000 to 60,000	0	3	2	0				
More than 60,000	0	2	0	0				

E-excellent, G-good, A-average, P-poor.

DISCUSSION

This study was conducted to assess the knowledge regarding rabies prevention among general population of Pratap Nagar, Jodhpur, Rajasthan.

The study reveals that 13.33% people had poor knowledge and 36.66% only had average knowledge regarding rabies prevention. The current results were supported by study conducted by Herbert et al (2010). The study was conducted on community perception regarding rabies prevention. The study results show that 74.1% of the participants had heard about rabies and 54.1% knew that rabies is a fatal disease. Only 33.5% of the interviewers felt that people in community had a role to play in controlling the stray dog population.

Approximately one half of the residents did not know about the correct first aid after an animal bite. Similar results were found by Prakash et al (2011). A cross sectional study was conducted to assess knowledge,

attitude, and practice about rabies and control among the population of urban slums area of Pune.

Among 200 respondents only 23% had knowledge about rabies transmission. Laishram J et al (2013-2014) carried a cross-sectional study on knowledge and practice on rabies among the adult residents in an urban community of Imphal, Manipur, India. A total of 350 respondents participated in study. Among those, 97.1% had ever heard of rabies, and only 8.6% knew that it was caused by virus. More than half of the respondents 51.5% had inadequate knowledge related to rabies.

Limitations

The study was confined to a small number of 60 samples which limit the generalization of the findings. The study was confined to urban community of Jodhpur.

CONCLUSION

The study findings revealed that there existed deficiency in knowledge of subjects regarding prevention of rabies. Awareness regarding rabies prevention in community need to be increased by undertaking IEC activities and targeted awareness campaigns.

The community people can be counselled regarding nature of provocative behavior of animals, immediate washing of wound with soap and running water for at least 15-20 minutes as soon as possible, early initiation of medical treatment and resolve any myths regarding dog bite. Community with improved knowledge about rabies and its prevention will result in healthier attitudes and beliefs and ultimately in safer practice.

Recommendations

On the basis of findings of study, it is recommended that the study can be replicated on a large sample for generalization. A similar study can be conducted with experimental research approach.

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Institutional Ethics Committee

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