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Research Article

A Study to Assess the Knowledge regarding Rabies Prevention among General Population of Community Residing in Chaudharywas, Hisar

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A B S T R A C T

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"). In 2015 Haryana government has launched a programme to become the first State in the country to be rabies free under the National Rabies Control Programme.

Method: The research approach used for this study was quantitative research approach and pre experimental (one group pre and post-test) design. The sample size was 60 general population of community. The tool used for this study consisted of three parts. Part A (demographic data). Part B, self-structure knowledge questionnaire consist of questions in various aspects such as general information, rabies prevention, (20 questions). Content validity of the tool was given by experts and tool found to be reliable and feasible during pilot study. PTP was given to the among general population of community following by pre-test and post-test was conducted 15 day onwards from the day of implementation of PTP, for those who were not available in the same setting for post-test, data was collected at their community following the addresses collected during pre-test.

Result: The knowledge score 46.66% of subjects were male and 53.33% were female. 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. 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%). No personal variable was found to be associated with level of knowledge at $p < 0.05$ level of significance.

Conclusion: The general population of community knowledge is improve regarding Rabies prevention.

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

Introduction

Rabies, also known as hydrophobia, is an acute viral disease that affects the 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"

Rabies is estimated to cause 59,000 human deaths annually in over 150 countries, with 95% of cases occurring in the Asian and African regions. In Asia, the estimated human deaths due to rabies are 35,172 per year. India accounts for 59.9% of rabies deaths in Asia and 35% globally.[1] In the bulletin of the World Health Organization (2014), India reports 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 according to which 70% of the people in India had never heard of rabies, and only 30% knew how to wash the wounds after animal bites, and among those who got bitten, only 60% received a modern cell culture-derived vaccine. It is the only communicable disease of man that is always fatal. Domestic dogs are the most common reservoir of viruses, with 99% of human deaths caused by dog mediated rabies. Although all age groups are susceptible, rabies is most common in children aged less than 15 years. In India, rabies affects mainly people of lower socioeconomic status. There are many myths and false beliefs associated with wound management among people.[2]

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 the virus of rabies is inside the body, it replicates in muscles or connective tissue cells at the wound site gaining access to peripheral nerves and then to the central nervous system and then multiplies there. Once it reaches the brain, it further replicates and results in encephalitis.[3]

The incubation period in dogs ranges from 3 to 8 weeks, but it may be as short as 10 days or a year or more. Clinical manifestations in a dog with rabies are changes in behaviour (becoming aggressive), biting without provocation, change in voice, excessive salivation, eating abnormal items like a stick, nail, mud etc.[1] Clinical manifestations 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.[4]

Almost all human cases of rabies were fatal until a vaccine was developed in 1885 by Louis Pasteur and Emile Roux. There is no effective curative treatment for rabies once clinical signs have appeared. Treatment and prevention of rabies are done by case management, local treatment of the wound, immunisation, and pre and post-exposure prophylaxis. In the 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, immunisation, and rabies prevention. 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), and continual health education to the public and veterinary professionals in rabies prevention and control. Pre-exposure prophylaxis is recommended for anyone who is at a continual, frequent or increased risk of exposure to the rabies virus either as a result of their residence or occupation. Travellers with extensive outdoor exposure and children living in rural high-risk areas are at particular risk.[5]

Intramuscular Administration: One dose of vaccine is administered intramuscularly on each of days 0, 7, 21, or 28.

Intradermal Administration: One intradermal injection of 0.1 ml is given on each of days 0, 7, 21, or 28.

World Rabies Day occurs every year on September 28, the death anniversary of Louis Pasteur. It is an international awareness campaign coordinated by the Global Alliance for Rabies Control to raise awareness about the impact of rabies on humans and animals, provide information and advice on how to prevent the disease in at-risk communities and support advocacy for increased efforts in rabies control. The World Rabies Day 2019 theme was "Rabies: Vaccinate to Eliminate". The highlights of this theme were the importance of education and awareness to prevent rabies.[6] For the first time, World Health Organization (WHO), the United Nations Food and Agriculture Organization (FAO), and the World Organization for Animal Health and Global Alliance for Rabies Control (GARC) have joined together and have developed a global strategic plan to end human deaths from dog-mediated rabies by 2030.[7]

Indian Government started a pilot project to prevent human rabies deaths and it was launched by the National Center for Disease Control (NCDC) in 2008 in five cities. Non-government organisations like the Association for Prevention and Control of Rabies in India and the Animal Welfare Board of India, are promoting the Animal Birth Control Anti-Rabies Programme in major metropolitan cities. In 2015, the Haryana government launched a programme to become the first state in the country to be rabies-free under the National Rabies Control Programme.

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A UK based NGO has been selected by the Government of India for the implementation of the Animal Component of the National Rabies Control Programme under the five-year plan. Indian Government is working hard and putting efforts by working with WHO and other organisations, implementing programmes, and educating people so that they can achieve a place of pride in the WHO by achieving Vision 2030 and making India free from rabies.[8]

Objectives

- To assess the knowledge regarding rabies prevention among the general population of the community residing in Chaudharywas, Hisar
- To determine the association of knowledge regarding rabies prevention with selected demographic variables

Materials and Method

The conceptual framework selected for this study was based on the system model (Input, Output and Feedback) developed by Neumann. The research approach used in this study was quantitative research approach. The tool was tried on 6 members of the community in Chaudharywas (Hisar). The reliability of the tool was established by using the Test and Re-test method for knowledge.

A pilot study was conducted from 16th March 2021 to 21st March 2021 at Chaudharywas before the actual data collection to assess the availability of sample and feasibility of the study. Prior permission was obtained from the Ethics Committee of the institution through Principal, Chaudharywas, Hisar. Ethical approval was obtained from the Sarpanch of Chaudharywas, Hisar. Written informed consent was obtained from members of the community of Chaudharywas for their willingness to participate in the study. The study was conducted in the month of March 2021 on 60 participants. The data were analysed through descriptive and inferential statistics to determine the knowledge of the participants regarding rabies prevention.

Inclusive Criteria

- Population suffering from rabies
- Available at the time of data collection
- Willing to participate in this study

Exclusion Criteria

Having any breathing problem.

Results

Section I: Demographic Variables of General Population residing in Chaudharywas, Hisar

A total of 60 samples were included in the study. Information on demographic variables - age, gender, education and economic status was tabulated and analysed to obtain the frequency and percentage distribution.

Table 1.Frequency and Percentage Distribution of Subjects according to Demographic Variables

S. No.	Variables	Frequency	Percentage
1.	**Age (in years)**		
	18-28	24	40
	29-39	9	15
	40-50	10	16.66
	51-60	17	28.33
2.	**Gender**		
	Male	28	46.66
	Female	32	53.33
3.	**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
4.	**Economic status (in INR)**		
	< 10,000	42	70
	10,000-35,000	11	18.33
	36,000-60,000	5	8.33
	> 60,000	2	3.33

Section II: Findings related to the Knowledge of General Population of Chaudharywas, Hisar

A self-structured questionnaire consisting of 30 questions based on the knowledge regarding rabies prevention was used to assess the knowledge of respondents.

Scoring

The scores were awarded to the participants on the following basis:

- A correct response was scored as 1
- An incorrect response was marked as 0
- An unanswered response was marked as 0

After obtaining data from 60 samples, the grading of the score was done out of the total score of 30 as follows:

- Poor (≤ 12 i.e. ≤ 40%)
- Average (13 to 18 i.e. 41-60%)
- Good (19 to 24 i.e. 61-80%)
- Excellent (25 to 30 i.e. 81-100%)

The findings related to the knowledge level were analysed by frequency, percentage, mean, and standard deviation.

Section III: Findings related to Association between Knowledge Score and Demographic Variables

To determine the significant association between the

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knowledge score of subjects with selected demographic variables, the following variables were selected:

- Age
- Gender
- Education
- Economic status

No personal variable was found to be associated with the level of knowledge at $p < 0.05$ level of significance.

39 years, 16.66% were in the age group of 40-50 years, and 28.33% were in the age group of 51-60 years. 70% of subjects had a family income less than INR 10000, 18.33% had a family income between INR 10000 to 35000, 8.33% had a family income between INR 36000 and 60000, and 3.33% had a family income of more than 60000 INR per month. 13.33% of participants had poor knowledge (≤ 12 i.e. ≤ 40%), 36.66% had average knowledge (13-18 i.e. 41-

Table 2.Knowledge Level of the Participants

Knowledge Level	Score	Frequency	Percentage	Mean	Standard Deviation
Excellent	25-30 (81%-100%)	2	3.33		
Good	19-24 (61%-80%)	28	46.66	18.33	4.1739
Average	13-18 (41%-60%)	22	36.66		
Poor	≤ 12 (≤ 40%)	8	13.33		

Table 3.Association of Level of Knowledge Score and Selected Socio-demographic Variables

S. No.	Variables	Knowledge Level				Chi-square	Table Value	Degree of Freedom	Significant/ Non-significant
		E	G	A	P				
1.	**Age (in years)**					8.35	16.92	9	Non-significant
	18-28	1	7	12	4				
	29-39	1	5	2	1				
	40-50	0	7	2	1				
	51-60	0	9	6	2				
2.	**Gender**					1.87	7.82	3	Non-significant
	Male	1	14	8	5				
	Female	1	14	14	3				
3.	**Education**					11.83	16.92	9	Non-significant
	No formal education	0	3	4	1				
	Primary education	0	3	5	1				
	Secondary and senior secondary education	0	6	6	5				
	Graduation and above	2	16	7	1				
4.	**Economic status (in INR)**					5.04	16.92	9	Non-significant
	< 10,000	2	17	17	6				
	10,000-35,000	0	6	3	2				
	36,000-60,000	0	3	2	0				
	> 60,000	0	2	0	0				

E: Excellent, G: Good, A: Average, P: Poor

Discussion

The present study reveals that 46.66% of subjects were male and 53.33% were female. 13.33% had no formal education, 15% had primary education, 28.33% had secondary and senior secondary education, and 43.33% had a graduation degree and above. 40% of subjects were in the age group of 18-28 years, whereas 15% were in the age group of 29-

60%), 46.66% had good knowledge (19-24 i.e. 61-80%) and 3.33% had excellent knowledge (25-30 i.e. 81-100%). No personal variable was found to be associated with the level of knowledge at $p < 0.05$ level of significance.

According to the World Health Organization, one death occurs every 10 minutes in the world due to rabies, and 4 out of 10 deaths are among children under 15 years.

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Approximately 45% of all deaths are due to rabies in the world. In India, 18,000 to 20,000 rabies cases are reported every year. This is due to a lack of general awareness about preventive measures, poor knowledge about prophylaxis and an irregular supply of anti-rabies vaccines. One of the reasons, the disease has been neglected is that deaths are scattered. Experts said that the main constraints in the elimination of rabies in India are lack of coordination and lack of a comprehensive national programme. So, four major steps should be taken for the prevention of rabies, i.e. vaccination of dogs, wound washing, post-exposure prophylaxis, and the improvement of education about rabies prevention where it is needed most.

Conclusion

The present research study has been concluded with implications for nursing fields, limitations and delimitations with study designs and methods and recommendations for the future. The focus of this study was on the assessment of the knowledge level of general population of the community regarding rabies prevention. This will help the general population of the community to gain knowledge in certain aspects of rabies prevention. This knowledge will later help to prevent complications and improve the quality of knowledge of people regarding rabies prevention.

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Conflict of Interest: None

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