

SHORT ARTICLE

Knowledge, Attitude and Practice Assessment in Health Workers regarding Rabies Disease and its Prevention in district Dehradun of UttarakhandSurekha Kishore¹, Richa Singh², Satish Kumar Ravi³¹Professor and Head, ²Senior Resident, Department of Community and Family Medicine, All India Institute of Medical Sciences, Rishikesh, Uttarakhand, ³Assistant Professor, Department of Anatomy, All India Institute of Medical Sciences, Rishikesh, Uttarakhand[Abstract](#)[Introduction](#)[Methodology](#)[Results](#)[Conclusion](#)[References](#)[Citation](#)[Tables / Figures](#)**Corresponding Author**

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Introduction: Rabies is a deadly disease in which first aid and immuno-prophylaxis after animal bite play a vital role in prevention. Animal bites are usually more prevalent in rural areas and the first aid is sought most commonly from health workers in rural areas. The same is the case in Uttarakhand due to vast expanse of forests and rural area. In the present study, the knowledge, attitude and practices regarding prevention of this disease among a special group of people, i.e. health workers were assessed. **Material and Methods:** District Dehradun was selected as study area and all the health workers in the district (162 health workers, males and females both) were enumerated and interviewed. The data were collected by administering semi structured questionnaire to them. The knowledge was assessed by evolving a scoring system. Practices and attitudes were assessed based on their past experiences and their present willingness for proper management of a case of animal bite. **Results & Conclusion:** Most of the study participants (59.9%) obtained a medium score (10-17) in knowledge regarding disease and its prevention. All of the participants had heard of the disease and knew about mode of spread. Most of the participants (83.3%) lack knowledge about anti-rabies immunoglobulin and pre-exposure prophylaxis (80.2%). Most of the participants (81.4%) had attitude scores in satisfactory range (2-3). Sixty percent had practice scores in low range (0-2). Though the knowledge regarding pet vaccination and full course of human vaccination was lacking in some, but the willingness to encourage pet owners to vaccinate their pets and encourage bite victims to get full course of vaccine was 100%. There is a need for sensitization of health workers so that their knowledge can be enhanced and their positive attitude (100% willingness) can be translated into proper practices for prevention and control of Rabies.

Key Words

Health workers; KAP score; Rabies

Introduction

Rabies is a deadly disease known to mankind since antiquity. It is a common knowledge among people that when a wild animal bites, there is a risk of lethal disease called rabies, but to only a few it is known that this disease can be fully prevented if certain preventive measures are taken.

This is a disease in which first aid after animal bite and immuno-prophylaxis play a vital role in prevention. Adequate and proper first aid if ensured timely can reduce viral load, and post exposure prophylaxis with vaccines can ensure prevention further.

Every year, more than 15 million people worldwide receive a post-exposure vaccination to prevent the

disease – this is estimated to prevent hundreds of thousands of rabies deaths annually.(1) Still, rabies is the 10th biggest cause of death due to infectious diseases worldwide.(2) Rabies causes about 26,000 to 55,000 deaths worldwide per year, more than 95% of which occur in Asia and Africa, (1,3). Based on available evidence, a fair estimate of rabies burden in India is 2.74 rabies cases/100,000 population annually, (2).

In India, the burden is unevenly distributed among different states. The exact statistics for Uttarakhand is lacking but the vast expanse of forests in Uttarakhand makes the animal bites more common here. Animal bites are usually more prevalent in rural areas of the state where the first aid is sought most commonly from health workers, male and females. They are usually the first ones to come in contact with a victim of animal bite. Therefore, their knowledge, attitude and practices (KAP) are crucial in reducing the incidence of this disease.

Most of the studies till date in our country have assessed either the KAP of general population or clinicians, (4, 5, 6, 7, 8) But knowledge and practices of health workers are also important as they form an important link in the chain of management of animal bite cases.

Aims & Objectives

To assess the knowledge, attitude and practices regarding prevention of this disease among a special group of people, i.e. health workers.

Material and Methods

Study design: A cross sectional KAP study. **Study participants:** All health workers (ANMs and MPWs) placed in sub-centres of district Dehradun, Uttarakhand. **Methodology:** From a total of 189 health workers placed at sub-centres, 162 could be contacted. They were visited and after obtaining informed consent, a semi-structured and pre-tested questionnaire was administered to them and information regarding their knowledge on rabies and their supposed actions after an animal bite were sought in the form of answers in that questionnaire in the presence of an interviewer. The questionnaire was first prepared in English which was translated to Hindi and Garhwali languages. The pre-testing was done on a group of 15 Health workers and accordingly modifications were made. **Data Analysis:** Data from these 162 questionnaires (139 from ANMs and 23 from MPW male) were then analyzed by

applying appropriate statistical tests using statistical software SPSS 16.

Assessment of knowledge, attitude and practices was done on the basis of scoring system described by Kaliyaperumal, (9). For knowledge and practices, each correct response was awarded 1 score. This was done to account for the multiple possible combinations of responses for a single question, e.g. when asked about clinical features of rabies in humans, participants might answer any number of these: hydrophobia, difficulty swallowing, anxiety, confusion, hyperactivity etc. For every correct response, they were awarded 1 score.

For attitude, a numerical value was assigned to each choice in the range of responses, with the middle response given a score of zero and positive and negative scores assigned to those around it. In this way a score was calculated for each individual in relation to the highest possible score, (9).

Results

The levels of KAP concerning rabies are presented in [Table 1](#). The data showed that 59.9% of the respondents had moderate level of knowledge, with a range of score 10-17 (mean = 12.17, SD =6.12). Regarding the attitude scores, 81.4 % respondents had attitude score towards rabies ranged from 2-3, i.e. in the satisfactory range. Only 39.5% of health workers were found to be following satisfactory or good practices with a score > or =3.

Discussion

Regarding knowledge, all (162) health workers had heard of this disease and almost all of them knew about the major mode of spread, i.e. animal bite. Only few knew about other modes of spread like organ transplantation or other animal's bite. Most of the health workers (59.9%) obtained medium score i.e. (10-17). The scores were similar in both the groups, ANMs and MPWs ($\chi^2 = 1.73$, $p=0.4211$ at 5% level of significance). The knowledge regarding clinical features of rabies in both humans and animals was lacking in many. Hydrophobia was known to almost all (95.7%), but very few (45%) knew about any other clinical features. Regarding first aid after bite, 75.3% of the study participants knew that wound must be washed thoroughly with soap and water for at least 15 minutes, and of these, 22% answered that antiseptic solution can also be used. Rest of the participants answered either only water should be used to wash the wound (24.1%) or nothing should be done as first aid (0.6%).

Many (83.3%) had no knowledge of anti-rabies human immune-globulin which is a problem because it is necessary in case of every category III animal bite. A large majority (83.9%) were not aware of full course of vaccination for humans post exposure. The knowledge of at least the number and spacing of doses should be there in order to communicate the same to the patient. Similarly, 80.2% of the respondents were not aware of pre-exposure prophylaxis. All this resulted in an overall intermediate score.

Most of the studies till date focus on knowledge, attitude and practices of either community or health providers.(4-8) Result of KAP of health workers cannot be compared with that of health providers (General practitioners with qualification of MBBS or more) as their qualifications are different. This was a limitation of this study.

The attitudes were mostly positive, i.e. they all were willing to encourage pet owners to get their pets vaccinated, and they were willing to go for complete immunization in case of an animal bite.

Regarding Practice, the scores were mostly low as most of the health workers had not been encouraging pet owners for their vaccination because they did not have time in their busy schedule for this, they also found it difficult to convince villagers as the vaccine availability is poor, the vaccine is expensive and some were not aware of pet vaccination. Also, the non-availability of vaccine even at secondary care hospitals is sometimes the case.

Conclusion

The lack of knowledge of health workers might translate to higher morbidity and mortality related to rabies in their respective work areas. There is a need for sensitization of health workers so that their knowledge can be enhanced and their positive attitude further that can be translated into proper practices for prevention and control of Rabies.

Recommendation

Reorientation training should be given to them from time to time. The rabies KAP could be further enhanced through the use of IEC materials.

Limitation of the study

The availability of vaccines for humans and pets is another issue which should be looked into.

Relevance of the study

The exact statistics for Uttarakhand is lacking but the vast expanse of forests in Uttarakhand makes the animal bites more common here. Animal bites are usually more prevalent in rural areas of the state where the first aid is sought most commonly from health workers, male and females. They are usually the first ones to come in contact with a victim of animal bite.

There are many grey areas like due to non-implementation of technically sound strategies, weak epidemiological surveillance & inadequate research and development and absence of health education. Therefore, their knowledge, attitude and practices (KAP) are crucial in reducing the incidence of this disease.

Authors Contribution

Study design: SK, RS; Data Collection: RS, SKR; Manuscript Drafting: RS, SKR; Finalization of Manuscript: SK, RS; SKR.

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Tables

TABLE 1 KAP LEVELS OF THE STUDY PARTICIPANTS

| Knowledge Score | ANMs (n=139) | MPWs (male) (n=23) | Chi square test value and p value |
|---------------------------|--------------|--------------------|---|
| Low – (<10) | 29(20.9%) | 6 (26.1%) | $\chi^2 = 1.73, df=2$ $p=0.4211$ |
| Medium (10-17) | 86 (61.8%) | 11 (47.8%) | |
| High (18-24) | 24(17.3%) | 6 (26.1%) | |
| Attitude Scores | | | |
| Low (0-2) | 0 | 0 | $\chi^2 = 0.02, df=1$ (calculated for satisfactory and good scores) $p=0.8875$ |
| Satisfactory (2-3) | 114 (82.0%) | 18 (78.3%) | |
| Good (4-5) | 25 (18.0%) | 5 (21.7%) | |
| Practice scores | | | |
| Low (0-2) | 84 (60.43%) | 14 (60.87%) | $\chi^2 = 0.34, df=2$ $p=0.8437$ |
| Satisfactory (3-5) | 47 (33.81%) | 7 (30.43%) | |
| Good (6-8) | 8 (5.76%) | 2 (8.70%) | |

TABLE 2 ASSESSMENT OF KNOWLEDGE OF STUDY PARTICIPANTS REGARDING RABIES DISEASE

| Knowledge regarding rabies | ANM (n=139) | | MPWs (n=23) | |
|---|---|------------------------------------|--|------------------------------------|
| | Answered yes | Answered no | Answered yes | Answered no |
| Heard of the disease | 139 | 0 | 23 | 0 |
| | Answered correctly | Answered incorrectly/ Not answered | Answered correctly | Answered incorrectly/ Not answered |
| Knowledge about the source of infection | 139 (100%) | 0 (0.0%) | 23 (100%) | 0 (0.0%) |
| Knowledge about other animals than dogs as source of infection | 103 (74.1%) | 36 (25.9%) | 17 (73.9%) | 6 (26.1%) |
| Knowledge about causative agent | 59 (42.4%) | 80 (57.6%) | 10 (43.5%) | 13 (56.5%) |
| Knowledge about mode of spread (animal bite) | 131 (94.2%) | 8 (5.8%) | 22 (95.7%) | 1 (4.3%) |
| Knowledge about other modes of spread | 27 (19.4%) (24- human bites and 5-organ transplantation) | 112 (80.6%) | 6 (26.1%) (5- human bites and 2- organ transplantation) | 17 (73.9%) |
| Knowledge about clinical features of rabies in animals | 137 (98.6%) (includes all who even knew one symptom) | 2 (1.4%) | 23 (100%) (includes all who even knew one symptom) | 0 (0.0%) |
| Knowledge about clinical features of rabies in humans | 134 (96.4%) (includes all who even knew one symptom) | 5 (3.6%) | 21(91.3%) (includes all who even knew one symptom) | 2 (8.7%) |

TABLE 3 KNOWLEDGE OF STUDY PARTICIPANTS REGARDING PREVENTION OF RABIES

| Knowledge regarding rabies prevention | ANM (n=139) | | MPW (n=23) | |
|--|--------------------|------------------------------------|--------------------|------------------------------------|
| | Answered correctly | Answered incorrectly/ Not answered | Answered correctly | Answered incorrectly/ Not answered |
| Proper Knowledge about First aid after bite | 102 (73.4%) | 37 (26.6%) | 20 (86.9%) | 3 (13.1%) |
| Knowledge about vaccination of humans | 123 (88.5%) | 16 (11.5%) | 21 (91.3%) | 2 (8.7%) |

| | | | | |
|--|------------|-------------|-----------|------------|
| Knowledge about full course of vaccine | 21 (15.1%) | 118 (84.9%) | 5 (21.7%) | 18 (78.3%) |
| Knowledge about antirabies human immunoglobulin | 21 (15.1%) | 118 (84.9%) | 6 (26.1%) | 17 (73.9%) |
| Knowledge about pre-exposure prophylaxis | 25 (18.0%) | 114 (82.0%) | 7 (30.4%) | 16 (69.6%) |
| Knowledge about vaccination of pets | 92 (66.2%) | 47 (33.8%) | 9 (39.1%) | 14 (60.9%) |

TABLE 4 ATTITUDES AND PRACTICES OF STUDY PARTICIPANTS REGARDING RABIES AND ITS PREVENTION

| Attitudes and Practices | ANMs(n=139) | MPWs(n=23) |
|---|--------------------|-------------------|
| Willing to encourage pet owners to vaccinate pets | 139 (100%) | 23 (100%) |
| Willing to go for complete vaccination in case of animal bite | 139 (100%) | 23 (100%) |
| Willing to take proper care of bite wound | 139 (100%) | 23 (100%) |
| In favour of mass vaccination | 25 (17.9%) | 5 (21.7%) |
| Would like to euthanize stray dogs | 11 (7.9%) | 3 (13.0%) |
| What they have been doing till now –whether encouraging pet owners for Vaccination | 27 (19.4%) | 10 (43.5%) |
| Going for vaccination in case of animal bite | 139 (100%) | 23 (100%) |
| Proper wound management | 84 (60.4%) | 15 (65.2%) |
| No. of pet owners among them | 47 (33.8%) | 11 (47.8%) |
| Whether vaccinated their pet? | 15 (10.8%) | 4 (17.4%) |