

**Title:** KNOWLEDGE AND ATTITUDE ON PREVENTION OF RABIES AMONG WILD ANIMAL HANDLERS WORKING IN A BIOLOGICAL PARK

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**Keywords** Knowledge attitude rabies, wild animal handlers, Biological Park

**Abstract** The wild animal handlers are at risk of continuous exposure to rabies, which is a significant occupational hazard. Timely and correct post exposure prohylaxis is invariably effective in preventing rabies even in high risk exposures.

## Original Article:

## KNOWLEDGE AND ATTITUDE ON PREVENTION OF RABIES AMONG WILD ANIMAL HANDLERS WORKING IN A BIOLOGICAL PARK

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### ABSTRACT

**Need for the study:** The wild animal handlers are at risk of continuous exposure to rabies, which is a significant occupational hazard. Timely and correct post exposure prophylaxis is invariably effective in preventing rabies, even in high risk exposures. Therefore, it is important that all the animal handlers should have adequate knowledge to prevent the disease.

**Objectives:** 1) To describe the socio-demographic profile of the study subjects 2) To assess the knowledge and attitude regarding prevention of rabies 3) To find out the difference between knowledge & attitude scores.

**Methodology:** The study was conducted at a Biological park in Karnataka. The details on socio-demographic profile and knowledge & attitude regarding prevention of rabies from each study subject was collected and analysed. Descriptive statistics like percentage, mean, median, inter-quartile range & standard deviation were calculated. Wilcoxon sign rank test was applied for inferential statistics.

**Results:** The study included 74 animal handlers of both sex, most of them were from rural areas. Among the study subjects, the median score of knowledge was 17 with the inter-quartile range of 13 and the median score of attitude was 28 with the inter-quartile range of 5. The difference between median scores of knowledge & attitude was calculated by Wilcoxon signed rank test, which showed that there was statistically significant difference between the scores ( $Z=7.348$ ;  $P<0.001$ ).

**Conclusion:** The knowledge and attitude on prevention of rabies was inadequate among the study subjects, which has to be improved for the better health seeking behaviour and in order to prevent the fatal disease.

**Key Words:** Knowledge, attitude, rabies, wild animal handlers, Biological Park

### INTRODUCTION

Rabies is a neglected zoonotic disease caused by single stranded RNA virus belonging to genus *Lyssavirus* of the family *Rhabdoviridae* causing acute viral encephalitis, which is almost always fatal.<sup>1</sup> The virus is transmitted by the saliva of rabid animals and generally enters the body via infiltration of virus-laden saliva from a rabid animal to other animals/ humans through bites, scratches, licks on broken skin and mucous membrane. All carnivores species including wild animals serve as natural reservoirs of the virus.<sup>2</sup>

A combination of large human and animal interactions has led to more exposures in World Health Organization's South East Asia Region than in any other part of the World. More than 1.4 billion

people in this region are at risk of rabies infection. Therefore, it continues to be a major public health and economic problem throughout the Region.<sup>3</sup> India is also a rabies endemic country, where animal bites to humans are a major public health problem and an estimated 17.4 million animal bites occur annually which accounts to an incidence of 1.7 %. An estimated 20,000 human rabies deaths occur in India every year.<sup>4</sup>

Therefore, in rabies endemic country like India, every animal bite is potentially suspected as a rabid animal bite, more so, all exposures to wild animals must be considered as high risk in countries enzootic for rabies.<sup>5</sup> Though wild animals contribute to rabies transmission there is very little documentation of wildlife rabies throughout the

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region of Asia and there is little knowledge whether wild rabies is independent of dog rabies or not. But, there is a recent evidence regarding spillover of rabies virus from dogs to certain endangered species of wild animals in Africa which can be a possible threat and a similar situation in Asia is also possible.<sup>3</sup>

The wild animal handlers are at significant risk of exposure to rabies everyday, which is a significant occupational hazard. Fortunately, rabies is a 100% vaccine-preventable disease. Timely and correct post exposure prophylaxis (PEP) consisting of proper wound wash with soap & running water, administration of full course of rabies vaccines and local infiltration of rabies immunoglobulin in all category III exposures almost invariably effective in preventing rabies, even after high-risk exposure.<sup>3</sup>

Therefore, it is important that all the animal handlers have proper & adequate knowledge to prevent the disease. Hence, the present study was conducted to assess the knowledge and attitude on prevention of rabies among animal handlers working in a zoo & biological park in Karnataka.

#### OBJECTIVES

1. To describe the socio-demographic profile of the study subjects.
2. To assess the Knowledge and Attitude regarding prevention of rabies among wild animal handlers working in a biological park
3. To find out the difference between knowledge & attitude scores.

#### METHODOLOGY

The present study was done after getting the Institutional Ethical committee clearance. The forest department and zoo authorities were briefed regarding the purpose of the study and written permission was taken from them, before starting the study.

The study was conducted from May 2015 to June 2015 at the Biological park in Karnataka and all the animal handlers working in various sections of the zoo and biological park, handling animals of different species and working at for a period of more than 6 months were included in the study. Data was collected using a pre-tested, semi-structured proforma in the local language from

each study subject, which was administered by the trained investigators after obtaining informed consent and ensuring confidentiality. The details included socio demographic profile and knowledge and attitude regarding prevention of rabies. The knowledge was assessed using (0-1) scale, in which every wrong question on knowledge was given a score of zero and a correct knowledge was given a score of one. The attitude was assessed using 5-point Likert scale in which for all positive attitude the scores were given as 1, 2, 3, 4, and 5 in the order of strongly disagree, disagree, do not know or cannot say, agree & strongly agree respectively. Whereas, the scoring order was reversed for negative attitude questions. Further, the history of previous animal bite or receiving PEP/ pre-exposure prophylaxis (PrEP) among the study subjects was collected. Similarly, an enquiry was also made regarding any history of animal/ human rabies death in the past.

The obtained data was entered and analyzed using SPSS version 21.0 and descriptive statistics like percentage, mean, median, inter-quartile range & standard deviation was calculated. Inferential statistics like Wilcoxon signed rank test was used to find out the difference between knowledge and attitude scores.

#### RESULTS:

The study included 74 animal handlers working in various sections of the zoo and Biological Park handling animals of different species and working for a period of more than 6 months. Majority of the study subjects were males (97.3%) and the median age of the study subjects was 35.5 years with an inter-quartile range of 15 years. Majority 33(44.6%) of the study subjects had education upto high school and most of them 53(71.6%) were from the rural area and 63(85.1%) of the study subjects were contractually employed.

The overall knowledge on rabies prevention was low among the study subjects with a median score of 17 and inter-quartile range of 13. Majority of the study subjects 54 (73.1%) had heard of rabies and the information obtained was mainly from the friends 19 (25.7%); but, only 30 (40.5%) of the study subjects had correct knowledge that rabies was a fatal disease. 45(60.8%) of the study subjects were aware that rabies is preventable (**Table 1**).

The present study also showed that the attitude regarding rabies prevention was not favourable as the response to most of the questions was don't know and the median attitude score was 28 with the inter-quartile range of 5. The difference between median scores of knowledge & attitude was calculated by Wilcoxon sign rank test, which showed that there was a statistically significant difference between the scores ( $Z=7.348$ ;  $P<0.001$ ).

The present study also showed that, most of the study subjects i.e, 59 (79.7%) had received pre-exposure prophylaxis against rabies subsequently booster dose of vaccine was administered during the study. Similarly, 42(73.7%) subjects had animal bite/ scratch in the past, following which majority 26 (61.9%) had consulted an allopathic doctor and among them only 13 (50.0%) had received ARV and none of them had received rabies immunoglobulin. However, there are no human or animal deaths due to rabies are reported in the park.

#### DISCUSSION

Rabies can be effectively prevented by means of pre-exposure or post-exposure prophylaxis, but still continues to pose a significant public health problem in rabies endemic countries. Therefore in rabies endemic countries like India, every animal bite case should seek early & correct post exposure prophylaxis to prevent rabies.

According to WHO all exposures to wild animals have to be considered as Category III exposures and should seek immediate health care. Therefore, animal handlers should have the correct knowledge & attitude regarding prevention of rabies. In the present study, the knowledge & attitude regarding prophylaxis against rabies was not satisfactory. Similarly, a community based study from West Bengal on perception regarding animal bite showed that, the overall knowledge on prevention of rabies among the rural population was only 6.2%.<sup>6</sup>

Another study on awareness of the ASHA workers regarding prophylaxis against rabies, showed that 64% of the trained ASHA's had knowledge on prophylaxis against rabies.<sup>7</sup>

Similar study on knowledge, attitude & practice on rabies prevention in health workers at Dehradun district showed that the 73.4% of ANM & 86.9% of Multi purpose workers had correct knowledge regarding first aid following animal bite.<sup>8</sup>

A study about perception of people regarding animal bite in urban area of Dehradun showed that 15.8% of the study subjects had correct knowledge regarding first aid following animal bite.<sup>9</sup>

All these studies showed that, the knowledge is relatively incomplete among all the study subjects, which demands IEC activities. Therefore, health education has to be considered as increasing knowledge will result in changing attitudes and seeking timely and correct post exposure prophylaxis which is effective in preventing rabies, as evidenced in a study conducted in a tertiary care hospital in Bangalore, where all the subjects were healthy and alive, even after 1 year of follow up after complete post exposure prophylaxis.<sup>10</sup>

Right knowledge & attitude will help in preventing rabies among the vulnerable group which in turn helps to minimize the disease burden and ultimately lead to elimination of the disease.

#### CONCLUSION

The knowledge and attitude on prevention of rabies was inadequate among the wild animal handlers and there was a statistically significant difference between median scores of knowledge & attitude. Hence, it is important to provide health education to all the animal handlers along with regular booster pre-exposure prophylaxis.

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