

**Title:**        **Awareness on prevention and control of rabies among medical college interns in Bangalore city**

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**Keywords** Rabies, Ayurveda, Interns, Awareness.

## **Abstract**

Rabies is a neglected zoonotic disease caused by a single-stranded RNA virus belonging to genus Lyssavirus of the family Rhabdoviridae. Knowledge, attitudes and practices (KAP) studies are important for different applications in public health. Interns are the practising physicians of tomorrow. The present study was undertaken with an objective to assess and compare the knowledge on prevention and control of rabies among interns of allopathic [MBBS] and Ayurvedic medicine [BAMS]. Rabies is a 100% vaccine preventable disease only if there is correct and timely administration of post exposure prophylaxis.

## ORIGINAL RESEARCH ARTICLE

## Awareness on prevention and control of rabies among medical college interns in Bangalore city

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**ABSTRACT****Introduction:**

Rabies is a neglected zoonotic disease caused by a single-stranded RNA virus belonging to genus Lyssavirus of the family Rhabdoviridae. Knowledge, attitudes and practices (KAP) studies are important for different applications in public health. Interns are the practising physicians of tomorrow. The present study was undertaken with an objective to assess and compare the knowledge on prevention and control of rabies among interns of allopathic [MBBS] and Ayurvedic medicine [BAMS]. Rabies is a 100% vaccine preventable disease only if there is correct and timely administration of post exposure prophylaxis.

**Material & methods:**

The study was conducted using pre tested questionnaire using google forms after obtaining informed consent from the study participants. The knowledge was assessed based on 20 questions with each correct answer given one mark and each wrong answer given zero mark.

**Results:**

This study involved 146 subjects with 73 interns of allopathy and 73 interns of Ayurveda. All the study subjects were working as interns in various departments of their respective medical college hospitals. The mean knowledge score was 18 with a standard deviation of 1.8 for interns of allopathic medicine and 13.8 with standard deviation of 2.6 for interns of Ayurvedic medicine. The allopathic medical college interns had better knowledge as compared to interns of ayurvedic medical college. The difference between mean knowledge scores of the two groups was statistically significant with t value of 11.35 and  $p < 0.001$ .

**Key words:** Rabies, Ayurveda, Interns, Awareness.

**Introduction:**

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

The magnitude and epidemiological pattern differs from country to country. It is a disease of poverty, affecting vulnerable populations and children. A combination of large human and dog populations in congested habitable areas, combined with widespread poverty has led to more exposures in World Health Organization (WHO)'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% with an estimated 20,000 deaths due to rabies

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every year.<sup>1</sup>

Rabies is a 100% vaccine preventable disease, taking into consideration the endemicity of rabies in India every animal bite is potentially suspected as rabid animal bite; hence there is a need for correct and timely administration of post exposure prophylaxis.<sup>4</sup>

Knowledge, attitudes and practices (KAP) studies are important for different applications in public health, based on the principle that, increasing knowledge will result in changing attitudes and practices to minimize the disease burden.<sup>5</sup>

Interns are the practising physicians of tomorrow. After graduating from the medical school these interns will take up jobs at various government and private health care facilities acting as primary care physicians. In this regard, it is important that interns have correct knowledge regarding prevention and control of rabies.<sup>6</sup>

In view of main streaming of AYUSH under National health mission and ayurvedic doctors getting posted in various government health facilities including primary health centres; it is important that ayurvedic doctors also have adequate knowledge on management of animal bite cases to prevent rabies.<sup>7</sup>

The present study was undertaken with an objective to assess and compare the knowledge on prevention and control of rabies among interns of allopathic [MBBS] and Ayurvedic medicine [BAMS].

**Material & Methods:**

The study was conducted after obtaining required permission from college authorities. A descriptive study was done between February to May 2022 in one medical and one ayurvedic medical college in Bangalore. The interns in the respective colleges consenting to participate in the study constituted the study subjects. The data was collected after obtaining an informed consent from the study participants using google forms. The knowledge on prevention and control of rabies was assessed based on 20 questions. Each correct answer was awarded a score of 1 & wrong answer was awarded zero. Data was presented using descriptive statistics as mean, standard deviation, frequencies & percentages. Data was analysed using t test & chi-square test for comparison. Data was analysed using Microsoft Excel and Open epi software.

**Results:**

This study involved 146 subjects with 73 interns of allopathy and 73 interns of Ayurveda. All the study subjects were working as interns in various departments of their respective medical college hospitals. The mean knowledge score was 18 with a standard deviation of 1.8 for interns of allopathic medicine and 13.8 with standard deviation of 2.6 for interns of Ayurvedic medicine. The allopathic medical college interns had better knowledge as compared to interns of ayurvedic medical college. The difference between mean knowledge scores of the two groups was statistically significant with t value of 11.35 and p < 0.001.

All the study subjects (100%) in both the groups knew the deadly disease transmitted by mad dog bite and the microorganism causing rabies. There was a gross difference in knowledge scores in few questions like only 20% of the ayurvedic interns knew that there is no cure/ treatment for rabies. Only 23.8% ayurvedic interns knew the correct site for rabies immunoglobulin administration. The detailed responses to each question with proportion of correct responses are presented in table below.

**Table 1: Awareness on rabies prevention among the study subjects:**

Sl. no	Question	Frequency of correct responses	
		Allopathy interns (n=73)	Ayurveda interns (n=73)
1.	Which is the deadly disease transmitted by mad dog bite?	73 (100%)	73 (100%)
2.	Which microorganism causes Rabies?	73 (100%)	73 (100%)
3.	What is the shape of Rabies virus?	70 (95.8%)	58 (79.4%)
4.	How many people die due to Rabies every year in India?	30 (41%)	38 (52%)
5.	How is Rabies transmitted to humans?	73 (100%)	68 (93.1%)
6.	Which are the animals that transmit rabies to humans?	65 (89%)	37 (50.64%)
7.	Is there any treatment for Rabies?	48 (65.75%)	15 (20%)
8	Can rabies be prevented?	73 (100%)	72 (98.6%)
9	Which of the following is an effective treatment for Rabies prevention?	71 (97.2%)	53 (72.6%)

Sl. no	Question	Frequency of correct responses	
		Allopathy interns (n=73)	Ayurveda interns (n=73)
10	What is the first aid following animal bite?	72 (98.6%)	67 (91.7%)
11	How many doses of Anti-Rabies vaccination should be given to prevent rabies?	55 (75.3%)	36 (49.3%)
12	Which is the site for administration of Anti rabies vaccine?	64 (87.6%)	44 (60.2%)
13	Can Anti-Rabies vaccination be given intra dermally (ID)?	66 (90.4%)	37 (50.64%)
14	If a person is bitten by a vaccinated dog/ animal, should he/she should take vaccination?	66 (90.4%)	38 (52%)
15	Where is Anti-Rabies vaccine available?	70 (95.8%)	52 (71.23%)
16	For which type of wound, Rabies Immunoglobulin should be given?	72 (98.6%)	60 (82.19%)
17	Where the Rabies immunoglobulin should be administered?	67 (91.7%)	17 (23.28%)
18	Who are more prone for dog bites?	66 (90.4%)	63 (86.3%)
19	How can the dog bite be avoided?	71 (97.26%)	71 (97.26%)
20	Did you know that pre-exposure Rabies prophylaxis can be given to people who are prone to dog bite?	72 (98.6%)	39 (53.42%)

#### Discussion:

Rabies is preventable by timely and complete administration of rabies immuno biologicals either as pre/ post exposure prophylaxis.<sup>8</sup> Unlike other infectious diseases, where vaccines are typically administered to healthy populations before onset of infection, human rabies vaccine in most cases, is administered post-exposure.<sup>5</sup>

The present study showed that the knowledge of rabies prevention among both the study groups was inadequate as the average knowledge score in both the study groups was about 50%. The knowledge was much better in allopathic interns compared to ayurvedic interns. Similar finding was observed in a study done in urban Maharashtra and a study done in Punjab.<sup>9,10</sup>

In this study, only 75.3% of allopathic interns and 49.3% of ayurvedic interns had correct knowledge concerning the number of doses of ARV, which are independent of the age of the victim and severity of the bites (single or multiple). These findings are almost similar to the observations made by Ravish et al.<sup>5</sup> the study also revealed that only 50.64% ayurvedic interns knew that anti rabies vaccine can be administered intra dermally the above finding is better when compared to a study findings of Chowdhury et al where in only 10% of the interns knew that anti rabies vaccine could be administered intradermally.<sup>12</sup>

The present study also showed that, only 23.28% ayurvedic interns knew the correct site of rabies immunoglobulin administration compared to 91.7% allopathic interns. The knowledge regarding immunoglobulin was much better in allopathic interns contrary to a study done in Goa where none of the interns were aware regarding the immunoglobulin administration.<sup>6</sup>

All these studies showed that, there is a need and scope for increasing knowledge and health education sessions are recommended to improve their knowledge on rabies prevention.

#### Conclusion:

The knowledge on prevention and control of rabies has to be further improved, so that they can practice the correct management of animal exposure and contribute towards achieving rabies elimination by 2030.

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