

ORIGINAL ARTICLE

A study on Knowledge, Attitude and Practice about rabies among Pharmacy students in a tertiary care hospital

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Abstract

Background: Rabies, a disease of antiquity, continues to be a major public health problem in India and its 100% fatal. **Objective:** To assess the knowledge, attitude and practice about rabies among pharmacy students of Assam Medical College and Hospital, to assess whether there is any difference of knowledge, attitude and practice among male and female students and study the socio-demographic profile of the students. **Materials & Methods:** A cross sectional study was conducted among 156 pharmacy students by purposive sampling using pre designed structured close ended questionnaire. Knowledge and attitude was assessed by a scoring system. Statistical analysis was done by percentage and chi square test. **Results:** The mean age of the students was 20.64 ± 1.42 years. Most (63.5%) of the students were males and most (46.7%) of them belong to the Hindu religion. Almost all (97.4%) the students had heard the word rabies. **Conclusion:** Most (61.2%) of the students had average knowledge, 38.8 % had good knowledge, 48.7 % had negative attitude and 51.3 % had positive attitude about rabies.

Keywords

Animal bite; Rabies; DALY

Introduction

It has been recognized in India since the Vedic period (1500–500BC) and is described in the ancient Indian scripture Atharvaveda, where in Yama, the mythical God of Death, has been depicted as attended by two dogs as his constant companions, the emissaries of death. (1)

Rabies is a fatal viral infection that can infect all mammals, but domestic dogs are responsible for 99 % of all human deaths from rabies. (2) According to WHO report in 2006 more than 3.3 billion people are

at risk for rabies in over 85 countries worldwide. (3,4) An estimated 59000 human deaths from rabies occur every year with 95% of cases occurring in Africa and Asia. (5) The annual incidence of animal bites in many countries can be as high as 100-200 bites per 100000 population. (6) Deaths caused by rabies are responsible for 3.74 million DALYs lost every year. (7)

Rabies is the only disease that had a 100% fatality rate amongst 97 cases reported in India in 2017, according to the data from the National Health Profile 2018.

As no study regarding rabies has been conducted in this part of the country (Assam) among paramedical students so, this study has been undertaken

Aims & Objectives

1. To study the socio demographic profile of the students
2. To assess the knowledge, attitude and practice about rabies among pharmacy students of Assam Medical College and Hospital, Dibrugarh.
3. To assess whether there is any difference of knowledge, attitude and practice about rabies among male and female students

Material & Methods

Study Area: Institute of Pharmacy, AMCH, Dibrugarh, Assam.

Type of Study: Cross sectional study

Study Population: 1st and 2nd year Pharmacy students.

Study duration: June 2018.

Sample size calculation: 156 students by Total enumeration method **Inclusion criteria:** Students present on the day of study and willing to participate in the study.

Exclusion criteria: Students absent on the day of study.

Data collection tools: A pre designed structured close ended questionnaire which consisted of 4 sections: socio-demographic profile, 13 questions on knowledge about rabies epidemiology, wound care management and prevention along with 3 questions each on attitude and practices towards rabies.

Data collection method: The institute was visited according to a prefixed day wise schedule. The students were approached in their classroom without disturbing their academic classes and after explaining them the purpose of the study, they were given the questionnaire in English which was self-administered by each student.

Knowledge section part of the questionnaire was administered to only those students who had heard about rabies. Questions pertaining to attitude and practice were administered to all 156 students.

Assessment of knowledge and attitude was done using a scoring system. Each correct answer was given a score of 1 and every wrong answer /don't know /not heard about rabies was given a score of 0 with maximum score of 22 and minimum score of 0. Total knowledge score was calculated for each student. Out of total questions regarding knowledge, score more than 75% was considered as good, more

than 50 % average and below 50 % poor. The attitude section comprised of 3 questions and students answering correct responses for any two or all three questions were considered as having positive attitude and rest were considered as having negative attitude towards that aspect.

Ethical Approval: Approval for study was obtained from the Vice Principal of Institute of Pharmacy, AMCH and informed verbal consent from the students was obtained after assuring confidentiality.

Data analysis: The data was analyzed using SPSS version 20.0 software. Statistical analysis was done by percentage and chi square test. A P value <0.05 was taken to be statistically significant

Results

The mean age of the students was 20.64 ± 1.42 which was ranged from 18 to 26 years. Out of 156 students, most (63.5%) of the students were males and most (46.7%) of them belong to the Hindu religion. Out of 152 students, 93 (61.2%) of the students had average knowledge and only 59 (38.8%) had good knowledge about rabies. Regarding attitude scores, out of 156 students 76(48.7%) of the students had a negative attitude and 80(51.3 %) had positive attitude towards animal bite and rabies.

Almost all (97.4%) the students (97 % male & 98.2% female) had heard the word rabies and only 2.6% of the students had not heard about rabies although the difference was statistically insignificant. Among those who had heard about rabies (48.2 %) female students have acquired information from Television than male students (39.6 %) which was statistically significant. ([Table 1](#))

Majority (80.9%) of the students(70.8% male & 89.3% female) were aware that dog is the most common source of rabies and only 19.1 % knew other animals as source of infection and the difference of knowledge between male and female was statistically significant. ([Table 1](#))

Majority (80.9%) of the students (85.4% male & 73.2% female) knew that mode of transmission of rabies was through animal bite. Only 13.1 % knew scratch and 5.9 % knew licks as modes of transmission other than animal bite which was also statistically significant. ([Table 1](#))

Regarding clinical features of rabies in human beings, fear of water was known to most (67.1%) of the students (68.8% male & 64.3% female) and 63.8 % mentioned aggressiveness (67.7% male & 57.1% female) as major clinical feature in animals and there

was no statistical significant difference between male and female students. (Table 1)

Only half (51.9%) of the students (64.6 % male & 30.4% female) correctly answered about the incubation period of rabies which was statistically highly significant. (Table 1)

Majority (78.2%) of the students (83.3 % male & 69.6% female) were aware about the fatal nature of rabies which was also statistically significant. (Table 1)

Majority (78.9%) of the students (83.3% male & 71.4% female) were aware about the availability of vaccine for animal bite and among them, most (65%) of the students (71.3% male & 60.05 female) knew the Schedule of vaccination to be followed. Regarding the site of vaccination, half (50.8 %) of the students (42.5% male & 67.5% female) correctly knew that the recommended site was deltoid and only 11.7 % of the students (11.3% male & 12.5% female) did not know the site of vaccination. Both intramuscular and intradermal route of vaccination was correctly known to (54.0% & 20.8%) of the students. Almost half (59.2%) of the students (60.4% male & 57.1% female) were aware about the availability of Rabies immunoglobulin. There was no statistically significant difference of knowledge regarding rabies prevention between male and female students. (Table 2)

With regard to local wound management, majority (68.4%) of the students (60.4% male & 82.1% female) knew that they have to wash the site of wound with soap and water following animal bite and the difference of knowledge was statistically significant. (Table 3)

Majority (82.1%) of the students (78.8% male & 87.7% Female) were willing to seek medical advice immediately if bitten by a dog. Majority (92.9%) of the students (90.9% male & 96.4% Female) said that they would consult a doctor or go to a hospital for treatment if bitten by a dog. Most (48.7%) of the students (50.5 % male & 45.6 % Female) were of the opinion that children are at more risk of animal bite. Only (28.8%) of the students (27.3 % male & 31.6 % Female) had pet (dog) at home and out of them, Most 68.9 % of the students (63 % male & 77.8 % Female) got their pet vaccinated. Most (42.8%) of the pet owners replied that since the vaccines were expensive, they didn't vaccinate their dog. There was no statistically significant difference of attitude and practice regarding rabies between male and female students. (Table 4)

Discussion

As there is no published literature on awareness about rabies among pharmacy students, so we have compared the findings of our study with studies done on medical students.

The current study observed significant differences among male and female student's knowledge about rabies epidemiology, wound care management but difference of knowledge about rabies prevention, attitude and practices about animal bite were not found to be statistically significant.

In our study, majority 80.9% of the students were aware that dog is the most common source of rabies which is in accordance with the findings by Tiwari A (8) where majority 93.4% of medical students knew that the dog as main reservoir of rabies.

In our study 19.1 % knew other animals as source of infection that was better than the findings of the study by Tiwari A (8) where only 2.8% of medical students knew about rabies transmission by animals other than dogs

In our study, majority (80.9%) of the students knew that mode of transmission of rabies was through animal bite which is in accordance with the findings by Tiwari A (8) where 91.8% of medical students knew that the main mode of transmission of rabies by bites of rabid animal.

In our study, only 13.1 % knew scratch and 5.9 % knew licks as modes of transmission other than animal bite which was still higher than found in a study by Praveen G et al, (9) where only 3.33% knew that it could be transmitted by scratch but only one knew that it could be transmitted by licks.

Regarding clinical features of rabies in human beings, fear of water was known to most 67.1% of the students which is in accordance with the findings by Tiwari A (8) where 74.3% of medical students knew that hydrophobia as a symptom of rabies in human. In our study 78.2% of the students were aware about the fatal nature of rabies which was contrary to the findings reported by Tiwari A (8) where the correct knowledge about fatality of rabies was found in 68.8% of medical students and Praveen G et al (9) where 60% of students knew that rabies is 100% fatal.

In our study, only half 51.9 % of the students correctly answered about the incubation period of rabies which was near to finding of a study done by Tiwari A (8) where 45.9% of medical students knew about incubation period of rabies

In our study, regarding local wound management, 68.4% of the students knew that they have to wash the site of wound with soap and water following animal bite which was near to finding of a study done by Tiwari A (8) where 72.7% of medical students had correct knowledge regarding the immediate wash of the wound with soap and water. Again, 26.9 % answered that antiseptic solution can be applied which is contrary to the findings by Tiwari A(8) where 42.1% of medical students had correct knowledge regarding antiseptic use. In our study, most 65% of the students knew the Schedule of vaccination to be followed which was higher than a study done by Tiwari A (8) where the correct schedule of vaccine administration was identified by 43.7% of medical students

Regarding the site of vaccination, in our study 50.8 % of the students knew that the site was deltoid, which is contrary to the findings by Tiwari A (8) where 71% were aware of correct site of anti-rabies vaccine administration

In our study, intramuscular route of vaccination was known to 54.1 % of the students which is almost similar to the findings by Tiwari A (8) where 50.8% of medical students knew about intramuscular route of vaccination.

In our study, half (59.2%) of the students were aware about the availability of Rabies immunoglobulin. Comparable if not similar was reported by Mali A (9) where 66.6 % were aware about anti rabies immune globulin. This finding shows that there was lack of knowledge about rabies immunoglobulin among pharmacy students which is very essential for management of dog bite.

Conclusion

The current study observed that knowledge of the male students was good on few aspects of Rabies epidemiology like majority of students knew dog as the most common animal transmitting rabies through bite, clinical features of rabies, awareness about the fatal nature of disease and availability of antirabies vaccine than female students. Majority of the female students had a positive attitude towards visiting hospital/consult doctor immediately following animal bite.

Recommendation

There is need to generate awareness among the pharmacy students about rabies through health education.

Limitation of the study

Sample size is small and study has been conducted only among pharmacy students, so study findings could not be generalized to the community and practice of the students was not assessed by scoring system

Relevance of the study

The study highlights that awareness about rabies should be included in their curriculum in order to enhance the knowledge of students.

Authors Contribution

CB: Study design, Data collection, Literature search, data analysis, manuscript writing and drafting. APR: Concept, Study design, Data collection, revising the article critically and final approval

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Tables**TABLE 1 SEX WISE DISTRIBUTION OF STUDENTS REGARDING THEIR KNOWLEDGE ABOUT RABIES EPIDEMIOLOG**

Variables				Test of significance
Heard of Rabies?	Male(N=99)	Female(N=57)	Total (N=156)	$\chi^2=0.23$ df=1 P=0.6273
Yes	96 (97.0)	56(98.2)	152 (97.4)	
No	03 (3.0)	01 (1.8)	4(2.6)	
Source of information	Male (N=96)	Female(N=56)	Total (N=152)	$\chi^2= 9.97$ df=2 P=0.0068
TV	38(39.6)	27(48.2)	65(42.7)	
Newspaper	36(37.5)	27(48.2)	63(41.4)	
Hospital	22(22.9)	02(3.6)	24(15.8)	
Source of infection	Male (N=96)	Female(N=56)	Total (N=152)	$\chi^2=6.93$ df=1 P=0.0085
Dog	68(70.8)	50 (89.3)	118(77.6)	
Animal other than dog	28(29.2)	06(10.7)	34(22.4)	
Mode of transmission	Male (N=96)	Female(=56)	Total (N=152)	$\chi^2 =12.66$ df=.2 P=0.0018
Animal bite	82(85.4)	41(73.2)	123(80.9)	
Scratch	06(6.3)	14(25.0)	20(13.1)	
Licks	08(8.3)	01(1.8)	9(5.9)	
Clinical features of rabies in human	Male (N=96)	Female(N=56)	Total (N=152)	$\chi^2=0.379$ df=3 P=0.9445
Fear of water	66(68.8)	36(64.3)	102(67.1)	
Fear of air	05(5.2)	03(5.4)	08(5.3)	
Behave like animal	14(14.6)	10(7.8)	30(19.7)	
Mad	11(11.4)	07(12.5)	12(7.9)	
Clinical features of rabies in animals	Male (N=96)	Female(N=56)	Total (N=152)	$\chi^2=4.22$ df=3 P=0.2352
Aggressiveness	65(67.7)	32(57.1)	97(63.8)	
Excess Salivation	15(15.6)	08(14.3)	23(15.1)	
Change in behavior	10(10.4)	07(12.5)	17(11.2)	
Change in voice	06(6.3)	09(16.1)	15(9.9)	
Incubation Period	Male (N=96)	Female(N=56)	Total (N=152)	$\chi^2 =16.59$ df=1 P<0.0001
Correctly knows	62(64.6)	17(30.4)	79(51.9)	
Don't know	34(35.4)	39(69.6)	73(48.1)	
Rabies is a fatal disease	Male (N=96)	Female(N=56)	Total (N=152)	P=0.0483 d.f 1 $\chi^2=3.90$
Yes	80(83.3)	39(69.6)	119(78.2)	
No	16(16.7)	17(30.4)	33 (21.7)	

*Figures in parenthesis indicate percentage

TABLE 2 SEX WISE DISTRIBUTION OF STUDENTS REGARDING THEIR KNOWLEDGE ABOUT RABIES PREVENTION

Variables				Test of significance
Heard of any vaccine for animal bite	Male(N=96)	Female(N=56)	Total(N=152)	$\chi^2= 3.01$ d.f = 1 P=0.0825
Yes	80(83.3)	40(71.4)	120(78.9)	
No	16(16.7)	16(28.6)	32(21.1)	
Schedule of vaccination	Male(N=80)	Female(N=40)	Total(N=120)	$\chi^2= 1.53$ df=1 P=0.2148
Yes	57(71.3)	24(60.0)	78(65.0)	
No	23(28.7)	16(40.0)	42(35.0)	
Site of vaccination	Male(N=80)	Female(N=40)	Total(N=120)	$\chi^2= 9.29$ df=4 P=0.0541
Deltoid	34(42.5)	27(67.5)	61(50.8)	
Abdomen	23(28.8)	03(7.5)	26(21.7)	
Thigh	03(3.7)	01(2.5)	04(3.3)	
Gluteus	11(13.7)	04(10.0)	15(12.5)	
Don't know	09(11.3)	05(12.5)	14(11.7)	
Route of vaccination	Male(N=80)	Female(N=40)	Total(N=120)	$\chi^2= 5.82$ df=3 P=0.1203
Intramuscular	39(48.8)	26(65.0)	65(54.1)	

Intradermal	21(26.2)	04(10.0)	25(20.8)	χ ² = 0.15df =1P= 0.6920
Subcutaneous	14(17.5)	05(12.5)	19(15.8)	
Don't know	06(7.5)	05(12.5)	11(9.2)	
Heard of Rabies Immunoglobulin	Male(N=96)	Female(N=56)	Total(N=152)	
Yes	58(60.4)	32(57.1)	90(59.2)	
No	38(39.6)	24(42.9)	62(40.8)	

*Figures in parenthesis indicate percentage

TABLE 3 SEX WISE DISTRIBUTION OF STUDENTS REGARDING THEIR KNOWLEDGE ABOUT WOUND CARE MANAGEMENT FOLLOWING ANIMAL BITE

Variables	Male(N=96)	Female(N=56)	Total(N=152)	Test of significance
Wound care management	No. (%)	No (%)	No. (%)	χ ² = 7.93 df= 2 P=0.0189
Wash wound with soap and water	58(60.4)	46(82.1)	104(68.4)	
Apply antiseptic	33(34.3)	08(14.3)	41(26.9)	
Apply dressing	05(5.3)	02(3.6)	07(4.6)	

*Figures in parenthesis indicate percentage

TABLE 4 SEX WISE DISTRIBUTION OF STUDENTS REGARDING THEIR ATTITUDE AND PRACTICES OF ANIMAL BITE AND RABIES

Variables	Male(N=99)	Female(N=57)	Total (N=156)	Test of significance
Following dog bite how soon would you seek medical advice?	No. (%)	No. (%)	No. (%)	χ ² =2.55 df=3 P=0.4648
Immediately	78(78.8)	50(87.7)	128(82.1)	
Within 1 week	14(14.1)	04(7.0)	18(11.5)	
Within 1 month	04(4.0)	01(1.8)	5(3.2)	
Don't know	03(3.0)	02(3.5)	5(3.2)	
Following dog bite from whom would you seek Treatment?	Male(N=99)	Female(N=57)	Total (N=156)	χ ² =2.12 df= 2 P=0.3450
Visit traditional healers	07(7.1)	01(1.8)	08(5.1)	
Visit hospital/Doctor	90(90.9)	55(96.4)	145(92.9)	
No one	02(2.0)	01(1.8)	03(1.8)	
Whom do you think animal bite more?	Male(N=99)	Female(N=57)	Total (N=156)	χ ² =4.74df= 2 P=0.0931
Children	50(50.5)	26(45.6)	76(48.7)	
Old aged people	14(14.1)	16(28.1)	30(19.2)	
All age group	35(35.4)	15(26.3)	50(32.1)	
Pet owner	Male(N=99)	Female(N=57)	Total (N=156)	χ ² = 0.32df= 1 P= 0.5675
Yes(Dog)	27(27.3)	18(31.6)	45(28.8)	
No	72(72.7)	39(68.4)	111(71.2)	
Whether Pet vaccinated?	Male(N=27)	Female(N=18)	Total(N=45)	χ ² =0.52 df=1 P=0.4688
Yes	17(63.0)	14(77.8)	31(68.9)	
No	10(37.0)	04(22.2)	14(31.1)	
Reasons for not vaccinating pet	Male(N=10)	Female (N=4)	Total(N=14)	χ ² = 1.34df =2 P=0.5113
Expensive	05(50.0)	01(25.0)	6(42.8)	
Lack of knowledge	03(30.0)	01(25.0)	4(28.6)	
No nearby veterinary hospital	02(20.0)	02(50.0)	4(28.6)	