KNOWLEDGE AND PRACTICE ON RABIES IN AN URBAN COMMUNITY OF MANIPUR, INDIA

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ABSTRACT

BACKGROUND

Rabies is a zoonotic disease, which affects all warm blooded animals including human. It is a neglected disease of poor and vulnerable population, whose deaths are rarely reported.

OBJECTIVES

To assess the knowledge and practice on rabies among the adult residents in an urban community and to determine the association between knowledge on rabies and variables such as age, sex, education and income.

MATERIALS AND METHODS

A cross-sectional study was conducted among the adult residents in an urban community in Imphal West District of Manipur, India, in November 2013 to January 2014. Data were collected using structured interview schedule after obtaining informed consent. Median score was taken as a cut-off for deciding adequacy of knowledge.

STATISTICAL ANALYSIS

Descriptive statistics like mean, standard deviation and percentages were used. To determine the association, Chi-square test was used and a p-value of <0.05 was taken as significant.

RESULTS

A total of 350 respondents participated in the study. Mean age was 32.97 (± 13.02) years. Majority (42.6%) of the respondents belonged to the age group of 20-29 years. Male and female respondents were equal in number. Three hundred and forty respondents (97.1%) had ever heard of rabies, but only 8.6% knew that it was caused by a virus. More than half of the respondents, i.e. 175 had inadequate knowledge (51.5%). Nearly 88% were aware that rabies was a fatal disease. Age, educational status and income were significantly associated with adequate knowledge. Of all the respondents, 98 (28%) have at least one pet dog or cat and only 1% of the pets were vaccinated against rabies.

KEYWORDS

Animal Bite, Dog Bite, Rabies, Cross Sectional Study, Awareness.

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INTRODUCTION

Rabies is a zoonotic disease that is caused by a virus. The disease affects domestic and wild animals and it spreads to human through close contact with infectious material, usually saliva, via bites or scratches. Rabies is present on all continents with the exception of Antarctica, but more than 95% of human deaths occur in Asia and Africa. Once symptoms of the disease develop, rabies is nearly always fatal. More than 55,000 people die of rabies every year, mostly in Asia and Africa; 40% of people who are bitten by suspect rabid animals are children under 15 years of age.¹ In India 15 million people are bitten by animals, mostly dog bites every year and need post exposure prophylaxis. Since 1985, India has reported 25000-30000 human deaths from rabies annually.²

Majority of people who die of rabies are of poor or low socio-economic status.³ In India there is no organised surveillance system of human and animal cases of rabies, the actual number of deaths may be much higher. The latest figure projected from the National Multicentre Rabies survey conducted in 2004 by the association for prevention and control of Rabies in India in collaboration with World Health Organisation is 205656 deaths from rabies per year.⁴ Most animal bites in India (91.5%) are by dogs, of which about 60% are strays and 40% pets. The incidence of animal bites is 17.4 per 1000 population. A person is bitten every 2 seconds and someone dies from rabies every 30 seconds.²

One of the reasons the disease has been neglected is because "Deaths are scattered" and never amount to the kind of crisis that get epidemics top billing. Indeed, experts say that the main constraint to rabies elimination in India is the lack of coordination and the lack of a comprehensive national programme.⁵ To the best of our knowledge, no study regarding rabies has been conducted so far in Manipur. Hence, this study was undertaken with the objectives to assess the knowledge and practice on rabies among the adults in an urban community in Manipur and to determine the association between knowledge on rabies and some selected variables of interest like age, education, monthly income.

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MATERIALS AND METHODS

A cross-sectional study was conducted among the adult residents in an urban community of Imphal, Manipur, during November 2013 to January 2014. This urban community is located in the urban field practice area of the Department of Community Medicine, Regional Institute of Medical Sciences (RIMS), Imphal, Manipur. Adults aged 18 years and above and who are permanent residents of the area were included in the study. There were a total of 370 families in this community. One adult member aged 18 years and above who gives consent was selected from each family to participate in the study. In case when there were more than one adult available in a family at the time of our visit, we selected one by lottery method. We intended to cover all the families in this community, so sample size was not calculated. Those who refused to participate and those who could not be contacted even after 3 successive visits were excluded from the study.

Data were collected using structured interview schedule which consists of socio-demographic variables, questions on knowledge and practice on rabies. Score was given for 12 questions on knowledge. The obtainable score ranges from 0 to 35. Median score was taken as a cut-off for deciding the adequacy of knowledge. Those who obtained less than and equal to median score were considered as having inadequate knowledge and those who obtained more than median score were considered having adequate knowledge.

The study was approved by the Institutional Ethics Committee, RIMS, Imphal, Manipur. Verbal informed consent was obtained from all the participants. Those who refused to participate and those who could not be contacted even after 3 successive visits were excluded from the study. Confidentiality was maintained.

Data were checked for consistency and completeness and entered in SPSS 16. Descriptive statistics like mean, standard deviation and percentages were used to describe the findings. Analysis was done using Chi-square test and a p-value of <0.05 was taken as significant.

RESULTS

A total of 350 respondents participated in our study. Out of 370 families, 8 refused to participate and members of 12 families could not be contacted even after 3 consecutive visits. Response rate was 94.6%. Mean age of respondents was 32.97±13.02 years. Males and females were equal in number. Little more than half of the respondents (53.1%) were Hindu by religion. Majority of them had education level between class X-XII (41.8%). More than 4 in 10 participants were self-employed and majority (72.3%) of them had a monthly family income of ten thousand rupees and more.

Median knowledge score obtained by the respondents was 11 with maximum of 30 and minimum of 0. More than half of the respondents, i.e. 175 had inadequate knowledge (51.5%). Majority of the respondents [340 (97.1%)] had ever heard of rabies and all of them knew that dogs harbour rabies organism. But only 8.6% of them knew correctly that the causative organism was a virus. Almost 9 out of 10 participants told that bite of suspected animals like dogs, cats could spread this disease and 67% respondents told that head was the most dangerous site of bite. Almost 9 in 10 participants told that the disease was fatal. Majority, i.e. 73% of them said that washing with water and antiseptics should be done following animal bite.

Almost half of the respondents said that rabies could be prevented by vaccination. When asked whom they would consult after a dog bite or any bite by a suspected rabid animal, more than 92% said that they would consult a doctor or go to a hospital for treatment. Only 9.1% knew about pre-exposure anti-rabies vaccination for human. When asked about the symptoms of rabies in dog, aggressive behaviour and excessive salivation were the most common responses (Table 1).

Among the respondents, 28% of them had pets and dog constituted the majority of them (68%). But only 1% of the dogs were vaccinated. Only 1.1% of the respondents had ever been bitten by a dog and one-fourth of them had washed the wound with water, another one-fourth had washed with water and antiseptics. But half of those bitten by a dog did not wash the wound (Table 2).

Respondents aged 60 years and more had more adequate knowledge compared to other age groups and it was statistically significant. There was no association between gender and knowledge. When we see the association between knowledge and educational status, it was found that those who were graduates and above had higher knowledge. Those respondents whose monthly income was more than ten thousand rupees had more knowledge and that was found to be statistically significant (Table 3).

Knowledge Questions	N (%)
Have you Ever Heard of Rabies?	
Yes	340 (97.1)
No	10 (2.9)
Which Organism Causes Rabies?	
Correct Response (Virus)	29 (8.6)
Incorrect Response	311 (91.4)
Which Animal Harbours Rabies Organism? *	
Dog	340 (97.1)
Cat	75 (21.4)
Bat	6 (1.7)
Monkey	5 (1.4)
How does Rabies Spread? *	
Bite of Suspected Animals (Dog, Cat, etc.)	314 (89.7)
Licks on Broken Skin	3 (0.9)
Contamination of Mucous Membrane with Saliva	62 (17.7)
What are the Danger Sites of Bite? *	
Head	236 (67.4)
Face	68 (19.4)
Neck	9 (2.6)
Is the Disease Fatal? *	
Yes	299 (87.9)
No	40 (11.8)
Don't know	1 (0.3)
What should be done following Dog/Cat/Other Suspected Animal Bite? *	
Wash with Water only	2 (0.6)
Wash with Soap and Water	4 (1.1)
Wash with Antiseptics	251 (73.8)
Injection TT	241 (70.8)
Can Rabies be prevented by Vaccination?	
Yes	168 (49.4)
No	168 (49.4)
Don't Know	4 (1.2)

Whom will you Consult After Dog/Cat/other Suspected Animal Bite? *	
Doctor/Hospital	314 (92.3)
Local Quack/Traditional Healer	145 (42.6)
No one	2 (0.50)
How to Avoid Rabies Infection? *	
Pre-exposure Vaccination of Human	31 (9.1)
Avoiding Animal Contact	217 (63.8)
Anti-rabies Vaccination of Animals	256 (75.2)
Don't know	5 (1.4)
What are the Symptoms of Rabies in Dogs? *	
Aggressive	267 (78.5)
Bites unusual objects	93 (27.3)
Change in Voice	62 (18.2)
Excessive Salivation	171 (50.2)
Paralysis	2 (0.6)
After a Dog has Bitten you will you kill it if Rabies is suspected?	
Yes	10 (2.9)
No	327 (96.2)
Don't know	3 (0.9)

Table 1: Knowledge on Rabies

*Multiple answers allowed

Practice Questions	N (%)
Do you have any Pet Animal?	
Yes	98 (28.0)
No	252 (72.0)
If yes, which Animal?	
Cat	31(31.6)
Dog	67(68.3)
Are your Pets Vaccinated for Rabies?	
Yes	1(1.0)
No	97(99.0)
Have you ever bitten by Dog/Cat?	
Yes	4(1.1)
No	346(98.9)
If yes, what did you do as First Aid?	
Wash with Water	1(25.0)
Wash with Antiseptic Solution	1(25.0)
Injection Tetanus Toxoid	2(50.0)

Table 2: Practice on Rabies

Variables	Knowledge		X ² value	P- value
	Inadequate, n(%)	Adequate, n(%)		
Age (Years)				
<20	10(43.5)	13(56.5)		
20-29	62(44.0)	79(56.0)		
30-39	50(58.1)	36(41.9)	12	0.02
40-49	20(54.1)	17(45.9)		
50-59	27(71.1)	11(28.9)		
≥60	5(35.7)	9(64.3)		
Sex				
Male	86(51.5)	81(48.5)	0.37	
Female	88(51.2)	84(48.8)		1.0
Educational Status				
Illiterate	30(55.6)	24(44.4)		
< Class 10 pass	76(61.5)	47(38.5)	13	0.000
Class 10-12 pass	62(44.6)	77(55.4)		
Graduate and above	7(29.2)	17(70.8)		

Income (₹/Month)				
<5000	6(46.2)	7(53.8)		
5000-9999	54(65.9)	28(34.1)	13.3	
10000-14999	64(53.3)	56(46.7)		
15000 and above	50(40.3)	74(59.7)		0.00

Table 3: Association Between Knowledge and Selected Variables

DISCUSSION

This study showed that majority of the respondents had heard about rabies. Majority (97.1%) of them said that dog harbours rabies organism, which was consistent with the findings of Piyaphene et al⁶, Mitabug et al⁷, Singh et al.⁸ Almost 9 in 10 of the participants told that bite of the dog could spread the disease, which was consistent with Piyaphene et al⁶, Mitabug et al⁷, Prakash et al.⁹ Eighty seven percent respondents told that rabies was a fatal disease, which was concurrent with the finding where 84.9% of the respondents said that rabies could lead to death.⁶ Two-third of the respondents said that head was the most dangerous site of bite, which was in contrast with Prakash et al.⁹

In our study 49.4% of respondents said that rabies could be prevented by vaccination which was in contrast with one study.⁶ which found almost 90% of the respondents had the idea that vaccination could prevent rabies, but similar with the finding of Prakash et al.⁹ In our study, nearly 1% of the respondents said that they should wash the bite wound with either water or water and soap which is in contrast with the study findings where more than 50% of them were aware of it.^{6,8-11} In this study, 92.3% respondents said that they would consult a doctor or go to a hospital after a dog bite or bite by other suspected rabid animals. This was much higher than that reported by Singh et al⁸ where only 36.4% would like to visit a doctor.

Our study showed that 28% of the respondents who own pets and dog was the most common which was comparable to other studies.^{6,9} Only 1% of the pets were vaccinated in this study, which was in contrast to a study.⁹ where 52% of the respondents got their pets vaccinated. Only 1% of the respondents had been bitten by dogs and only 25% of them washed the wound with water, which was in contrast with other study finding.^{6,9,12,13,14} Since the number of respondents ever bitten by a dog is very less, this finding should be interpreted cautiously.

Respondents aged 60 years and above had more adequate knowledge and it was statistically significant. This might be attributed to their life experiences. Those respondents who were below 30 years had better knowledge than those aged 30-59 years. As younger people are more exposed to mass media and this could have influenced their knowledge. Those who were graduates and above had more knowledge as compared to other group and this came out as expected as education and knowledge go hand-in-hand.

Those respondents whose monthly income was more than ten thousand rupees had more adequate knowledge and it was found to be statistically significant as those from higher socio-economic status tend to be more educated and are supposed to be more knowledgeable.

CONCLUSION

Though majority of the respondents had ever heard of rabies, more than half of them had inadequate knowledge on rabies. Knowledge was found to be statistically associated with age, educational status and monthly family income. Though people knew that dog bite could cause rabies, vaccination of pets for rabies was low in this community. The strengths of this study are that it is the first study in Manipur regarding knowledge and practice on rabies and our study findings can be generalised to any urban community in Imphal, Manipur. Confining our study to only one urban community was a limitation of the study. We recommend that a study with larger sample size including both urban and rural areas should be conducted. Awareness about rabies can be increased by undertaking IEC activities in print and electronic media and by undertaking targeted awareness campaigns.

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