Knowledge Level of Dog Owners towards Rabies Prevention and Control

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ABSTRACT

Rabies is a viral disease of all warm blooded animals which causes acute fatal encephalitis, with almost 100 per cent fatality rate. This disease occurs in more than 150 countries and territories and about 55,000 people die of rabies every year, mostly in Africa, Asia, and South America. Worldwide, dogs are the source of 99% of human rabies deaths (WHO, 2010). Canine rabies is endemic and occurs throughout the year in all parts of India causing heavy mortality of human beings. To know the knowledge level of dog owners related to rabies and their preparedness, a study was conducted with 100 respondents in Bhubaneswar city. Structured questionnaires were prepared and administered to dog owners by face to face interview. The study revealed that majority of the dog owners (86 %) were aware that rabies can be spread through the saliva of a rabid animal. But, majority of respondents (89%) did not know the age for first vaccination of dogs against rabies. Dog owners who were public servants were having good knowledge about rabies than those of other occupation groups. Female dog owners do have less knowledge as compared to their male counterparts. Inadequate knowledge of some aspects of rabies, negative attitude and practice of dog owners towards rabies put the dog owners in high risk of exposure to the fatal disease. There is, therefore a need for educational programmes targeted at dog owners to increase their level of knowledge and reduce the risk of exposure to rabies.

Keywords: *Knowledge, Practice, Rabies, Vaccination, Dog owners.*

Rabies is a viral disease of all warm blooded animals, which causes acute fatal encephalitis, with almost 100% case fatality rate. The disease originated about 3000BC and is one of the most typical zoonoses that have been well known since ancient times. Every year, more than 15 million people worldwide receive a post-exposure preventive regimen to avert this disease, this is estimated to prevent 327, 000 rabies deaths annually (WHO, 2010). The disease is endemic in developing countries like India (Harry et al., 1984) and is often misdiagnosed, under-diagnosed and underreported. As per report of 19th livestock census, Government of India, the dog population in India is around 25 million and the dog to man ratio is estimated to be 1:36. The annual estimated number of dog bites in India is 17.4 million which cause an estimated 18,000-20,000 human rabies cases per year. The dog population of Capital city of Odisha i.e. Bhubaneswar city is around 25, 000 and the Capital Hospital of the city where post bite human antirabies vaccine are given free of cost receives 30 to 40 dog bite cases every day. As per data of the Kennel Club of India which registered some 50,000 pet dogs last year, every year on an average the number of new pets increases by 15 per cent. Another 30-40 per cent of the canine population is not registered with kennels.

The pet dog population in India is growing for a number of reasons. On top of the list is a love for dogs. Some of the factors responsible for the growing trend of pet dog ownership in urban India are nuclear families, double income households, and changing lifestyles. The one-child norm has also contributed towards increase in pet dog population .Other believes that holds increase in pet dog population is that of security. With a rise in prosperity, more and more people are keeping pet dogs for safety. Dog owners' family members and their neighbors are placed in the high risk group for rabies because of their frequent exposure to dogs. The data on dog bites are scanty, unreliable and controversial since they are not notifiable in the routine surveillance system.

Studies on knowledge, attitude and practice (KAP) towards rabies among dog owners have been carried out in different parts of the country and these have shown that KAP is an important factor in the control of rabies in India. Poor public awareness towards rabies is considered as one of the bottle necks for the prevention and control of the disease. In India, understanding dog owner's knowledge level on cause, mode of transmission, symptoms, treatment and possible intervention measures of rabies is an important step towards developing strategies aimed at controlling the disease and determining the level of implementation of planned activities in the future. Therefore, this study was designed to assess the level of knowledge of dog owners in Bhubaneswar city of Odisha towards prevention and control of rabies. The present study was carried out with three important

objectives: (i) to study the socio economic profile of the dog owners, (ii) to assess the knowledge level of dog owners towards control and prevention of rabies and (iii) to study the co-relation between selected independent variables and the knowledge level of the respondents.

METHODOLOGY

This study was carried out in Bhubaneswar, the state capital of Odisha. The Teaching Veterinary Clinical Complex (TVCC) of The College of Veterinary Science and Animal Husbandry was selected purposefully because it is the ultramodern clinical complex of the city with latest facilities for treatment of animals .The pet owners from all corners of the city came here for consultancy and treatment of their pets. 100 dog owners who visited to TVCC for treatment of their dogs during the month of January and February 2016 were selected on the basis of their willingness to participate in the study. They were first informed the purpose of the study, and data from them were collected personally by using structured questionnaire. Data obtained were analyzed using slandered statistical procedures .Demographic variables were presented using descriptive statistics and the mean knowledge scores were calculated. Respondents with knowledge scores equal or greater than the mean scores were considered to have good knowledge while those who had scores below the mean were categorized as having poor knowledge. Associations between demographic variables and the categorized scores were assessed using ÷2 test.

RESULTS AND DISCUSSION

Demographic characteristics of the respondents

Out of 100 respondents that participated in the study, 76 per cent were males and 24 per cent were females. 14 per cent of the respondents were public servants while majority of them were i.e. 74 per cent were self employed. So far, education level of the respondents are concerned majority of them i.e. 46 per cent of them were graduates and only 2 per cent of them are professionals.

Table 1
Demographic characteristics of the respondents

Characteristics		Total number of respondents (N=100)	Speci?c rates (%)
Age (years)	<19	12	12
	20	72	72
	30	10	10
	>40	6	6
Educational status	Under matriculate	8	8
	Up to class 12	40	40
	Graduate	46	46
	Post graduate	4	4
	professional	2	2
Gender	Male	76	76
	female	24	24
Religion	Hindu	92	92
	Muslim	8	8
	Christian	-	-
Occupation	Unemployed	12	12
	Public servant	14	14
	Self employed	74	74

Association of dog owners with dogs : The analysis of data presented in Table 2 reveals that majority of respondents i.e. 66 per cent have a single dog with them and 80 per cent of them have more than five years of experience in of dog keeping and 54 per cent of the respondents are of the opinion that they keep dog for both luxury and guarding their house .Majority of the respondents i.e. 56 per cent had constructed kennel

for their pet and only14 per cent allowed the dog to stay with the family members in the house. Study revealed that 60 per cent of the respondent did not allow their dogs to roam freely in the neighborhood whereas 24 per cent of the respondents reported that they allow their dog to roam freely in the neighborhood.

Table 2
Associations of dog owners with dogs

Association item		Total number of respondents	Percentage (%)
Period of dog keeping (years)	1-5	62	62
	6-10	18	18
	11-15	14	14
	>15	6	6
Number of dogs owned	1	66	66
	2	26	26
	3	6	6
	>3	2	2
Reason for keeping dogs	Companionship	18	18
	For guarding	10	10
	For luxury	18	18
	for both guarding and luxury	54	54
Type of dog housing	Kennel (Dog house)	56	56
	Anywhere in the premises	30	30
	With the family member in the house	14	14
Control of dog movement	Never allowed leaving the premises	60	60
	Allowed to roam freely in the neighborhood	24	24
	Allowed movement with owner only	14	14

Knowledge of rabies : Dog owners in this study showed an acceptable level of knowledge on mode of transmission of rabies, clinical signs of the disease and effects of licensing and registration of dog, but had poor knowledge of age of first vaccination of dogs. With a mean knowledge score of 5.01 in contrast to this finding higher knowledge and higher scores in practice indicators regarding rabies was reported from Sri Lanka (Gino et al., 2009). This difference probably is explained by the lack of health education programs about rabies in India. The respondents were categorized in to two categories , one category as good knowledge level having mean score above 5.01 and another one of poor knowledge level having less than or equal to mean score of 5.01. The number of respondents as per the category above presented in Table 3.

Table 3
Number and per cent of respondents according to knowledge score levels about rabies

Knowledge score levels	Number	Percentage
Poor(< or = 5.01scores)	67	67
Good (> 5.01scores)	33	33

The responses of the respondents on various questions related to knowledge of rabies are compiled and presented in Table 4. The majority of the respondents (86 per cent) said that dogs are common source of rabies in India. Sixty Six per cent of the respondents agreed that humans as well as dogs can be infected with rabies. However, 86 per cent of the respondents are of the opinion that dog owners are more vulnerable to rabies than the non-dog owners. The study also revealed that majority of the respondents i.e. 89 per cent do not know at what age should dogs receive first dose of rabies vaccine and even 68 per cent of respondents do not have the knowledge that vaccination of dogs against rabies should be repeated annually.

Table 4
Assessment of knowledge of the respondents towards rabies

Knowledge items		Frequency	(%)
Dogs are common source of rabies in India	Yes	86	86
	No	14	14
Humans as well as dogs can be infected with rabies	Yes	66	66
	No	34	34
Rabies virus can be spread through the saliva of a rabid animal	Yes	86	86
	No	14	14
Dog owners are at more risk of being infected with rabies virus	Yes	79	79
	No	21	21
At what age should dog receive first dose of rabies vaccine	Yes	11	11
	No	89	89
Vaccination of dogs against rabies should be repeated annually	Yes	32	32
	No	68	68

Practices towards control of rabies : Respondents were asked number of questions related to rabies and their responses were compiled, and presented in Table 5. The majority of the respondents i.e. 92 percent were of the opinion that a mad dog should not be allowed to roam freely, and around 94 per cent of them were in the view that dog registration and licensing helps in control of rabies. This indicates that the dog owners do have some knowledge towards effective control and prevention of rabies. Out of the 100 respondents, 28 per cent of the respondents had the history of dog bite but majority of the respondent i.e. 74 per cent do not have the knowledge about the first aid treatment required in case of their own dog bite. Though a good percentage i.e. 92 per cent of them said that dog handlers should wash their hand after feeding, grooming etc, but 84 percent of them are not aware that dog handlers and owners should take human anti rabies vaccine as a preventive measure towards rabies. Study revealed that 68 percent of the respondents go for wound treatment and vaccination in case of post dog bite still 10 per cent of them go for traditional treatment like herbal therapy which is against WHO guideline of rabies treatment. Though animal birth control programme is the only programme to control rabies world wide as recommended by WHO, a large section of the sample population 74 per cent of them were not aware about the government initiated animal birth control programme.

Table 6
Assessment of practice of respondents towards rabies

Practice items		**Frequency**	**(%)**
A mad dog should not be allowed to roam freely	Yes	92	92
	No	8	8
Dog registration and licensing helps in control of rabies	Yes	94	94
	No	6	6

Have you been bitten by a dog?	Yes	28	28
	No	72	72
Do you have the knowledge about ?rst aid treatment for dog bite?	Yes	26	26
	No	74	74
Dog handlers should wash their hand after feeding, grooming, etc.	Yes	92	92
	No	8	8
It is good to wash dog bite wounds with soap	Yes	46	46
	No	54	54
Dog handlers should take human anti rabies vaccine	Yes	16	16
	No	84	84
What do you do in case of dob bite?			
a) Wound treatment and vaccination		68	68
b) Traditional medicine treatment		22	22
c) Herbal therapy		10	10
Knowledge about government animal birth control programme	Yes	26	26
	No	74	74

CONCLUSION

The study reveals that dog owners of Bhubaneswar have knowledge about mode of transmission of rabies, clinical signs of the disease and importance of post bite vaccination to humans. But, they have poor knowledge on age of first vaccination, repeated annual vaccination and first aid measure for dog bite. The sate animal husbandry department, NGOs and civil societies may take up educational programme to aware the dog owners for adoption of recommended practices to control occurrence of rabies. The awareness campaign should focus on dog vaccination practices and knowledge of first aid treatments.

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