Original Article

Knowledge, Attitudes and Practice of Rabies in Kirkuk City/Iraq

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Abstract

Introduction: Community knowledge, attitudes and practices are important both for prevention of human deaths due to rabies and for control of disease in animals. This studywas a cross-sectional survey investigation the level of community knowledge as well as attitudes and practice about rabies in Kirkuk city, north of Iraq.

Methods: A convenience sample (n= 311) was interviewed randomly from Kirkuk city from November 2018 – April 2019.

Results: A total of (311) respondents were interviewed, of which 140 (45.02 %) were males and 171 (54.98%) were females. More than (81%) from participant knew the rabies can be transmitted from dogs, and more than (59%) knew the virus is the causative agent of rabies. Only (10 %) from participants knew the signs of rabid dog which shows nervous signs, However, (63.6 %) do not know the signs of rabid dogs.

Conclusion: This study showed that Kirkuk community have poor knowledge on rabies and its risk. The statistical analysis showed P-value of (0<0.05) was considered statistically significant.

Key words: KAP: Knowledge Attitude Practice, Rabies, Kirkuk, Iraq.

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INTRODUCTION

Rabies is a very lethal disease as causes damage to CNS, it is transmitted via the bite of infected animals, licking and scratching can also transmit the disease. The principle vector of the virus is the dog although wild animals can also infect humans [1,2].

The annual number of deaths, world-wide caused by rabies is estimated to be 55,000,mostly in rural areas of Africa and Asia [3].

It is endemic in Iraq especially in rural areas (75%). Dogs are the main animals to beaffected in Iraq and may induce the disease in human by dog bite [4].

The case of rabies in Iraq is reported in Iraqi ministry of health (2010 – 2017) was 87 cases [5].

Thousands of human deaths from Rabies occur annually despite availability of effective vaccinations for humans following exposure [6],

Usually people with bites start to notice the early symptoms about 3-12 weeks after beingbitten or scratched by infected dogs; however, symptoms may be delayed by many years giving a false illusion that the danger has passed [7].

The disease progresses from nonspecific prodromal phase to paresis or paralysis, spasms of swallowing muscles can be stimulated, and provision of baseline data for planning, implementation and evaluation of national control programs. These data would be useful for designing a rabies prevention and control program in future targeting both the animal sources and the human population at risk. [8,9].

Material and methods Study design.

This study was conducted in Kirkuk city during November 2018 to April 2019, to assessthe, attitude and practice of the Kirkuk community on rabies. Kirkuk city is located at north of Iraq, with a population of 752,745 according to last census conducted by Iraqi authorities in 1977.

Questionnaire design

A questionnaire was designed for this study, it consisted of three parts: items regarding demographic information of respondents (age, sex, educational level, occupation, region, ownership of pets and farm animals); questions related to the knowledge and perception of rabies; questions targeting the attitude and perception of rabies and its control activities and questions on pet care practice.

Data analysis

The data was analyzed and evaluated by using Chi-square test, as appropriate.to evaluate the statistical significance of the differences in responses of participants. A P-value of <0.05 was considered statistically significant.

Official agreements taken from the directory personal for the completion of study.

No financial support present neither governmental nor from privates for completing allsteps of study.

RESULTS

Demographic characteristics of the respondent

A total of 311 respondents were interviewed in this study. Table 1 shows the profile of respondents from Kirkuk city and other areas. 140 (45.02 %) of the respondents were males and 171 (54.98 %) were females. The majority of the respondents age groups included in the range of (12 – 22 and 23 – 31 year) and 68.8 % of the respondents were university graduates. More than 62 % of respondents were other works and more than96% were Muslims.

Knowledge

Table 2 shows the knowledge of the participants. The majority of sample population (69. 9 %) was not have pet animals, and (54.58 %) of population not have knowledge on the rabies, however, the majority of the samples were from Kirkuk (57.8 %). The majority of respondents believed that the rabies can be transmitted by dogs (81.8 %) 57.8% of participants believed that the rabies can be transmitted from other animals.

72.6% have knowledge that the rabies can be treated. Only 59.8% indicated that the virus is causative agent of rabies. Seventy four percent believed that the rabies can be prevented and the method of transmission from dog bite (80. 13 %). There were significantly number of respondents they do not know the signs of disease in dogs (63.6%) and (67.5 %) from Kirkuk city population.

Attitude

Table 3 shows the results concerning the attitude of the respondents on rabies. More than 80 % of population were annoyed from stray dogs, more than 62 % they can ride of stray dogs by other ways Almost seventy percent of respondents said it is the government responsibility to control stray dogs by and only 43 % going to inform the responsible bodies on stray dogs, and 65.3 % get vaccination from Governmental institution.

Practice

Table 4 shows the results concerning the practice of participants on rabies. The majority of responded on rabies target is the children (73.3 %) and seventy one percent prefer to keep dogs outdoors. Only twelve percent have dogs vaccinated against the rabies, however, 25.1% have dogs but not vaccinated against rabies and 62.5 % were not have dog. More than (49 %) of the participants indicated that the vaccine is not always available against the rabies. Only 55.7 % of respondents are not trained for looking after the dogs. Thirty two percent replied to kill the rabid dogs and more than seventy four percent go to hospital when they betting by the dog.

Table 1: Characteristics of respondents in KAP study. (n = 311)

	Total		Kirkuk city		Outside	
	N	%	N	%	N	%
Gender						
Male	140	45.02	116	43.1	24	57.1
Female	171	54.98	153	56.9	18	42.9
Age						
12-22	109	35.05	95	35.32	14	33.3
22-31	135	43.41	111	41.26	24	57.14
32-41	33	10.61	33	12.27	0	0
42-51	18	5.8	17	6.32	1	2.38
52-61	10	3.21	8	2.97	2	4.76
> 62	6	1.92	5	1.86	1	2.38
Education level						
not stated	3	0.96	3	1.12	0	0
Elementary	14	4.5	14	5.2	0	0
Primary	8	2.6	6	2.23	2	4.8
Secondary	52	16.72	45	16.72	7	16.7
University	214	68.8	183	68.03	31	73.8
other studies	20	6.43	18	6.7	2	4.7
Profession						
Officer	43	13.8	42	15.6	1	2.4
Lawyer	12	3.85	12	4.4	0	0
Teacher, school teacher	22	7.07	21	7.8	1	2.38

Engineer	8	2.6	7	2.6	1	2.38
Medical	26	8.3	19	7.1	7	16.66
Other works	194	62.4	163	60.6	31	73.8
House wife	6	1.93	5	1.9	1	2.38
Religion						
Muslim	300	96.46	259	96.2	41	97.62
Christian	6	1.93	5	1.9	1	2.38
Other religion	5	1.61	5	1.9	0	0

Table 2: Descriptive and bivariate analysis of responses to questions related to knowledge and perception of rabies in Kirkuk and outside.

	Total		In Kirkuk		Outside		Sig	P value
	N	%	N	%	N	%		
Do you have pet animals?								
Yes	93	30.1	78	29.21	15	35.7	0.393	0.729
No	216	69.9	189	70.79	27	64.3		
Do you have knowledge on the rabies?								
Yes	139	45.42	112	42.4	27	64.3	0.008	6.986
No	167	54.58	152	57.6	15	35.7		
Can people get rabies from dogs?								
Yes	249	81.6	216	81.8	33	80.5	0.838	0.42
No	56	18.4	48	18.2	8	19.5		
Can rabies transmitted from other animals to human?								
Yes	167	57.6	144	57.8	23	56.1	0.835	0.043
No	123	42.4	105	42.2	18	43.9		
Can rabies treated?								
Yes	217	72.6	184	71.32	33	80.5	0.539	2.165
No	21	7.0	18	6.97	3	7.3		
I do not know	61	20.4	56	21.71	5	12.2		
What is the causes of the rabies?								
virus	186	59.8	156	57.99	30	71.4	0.278	6.303
bacteria	39	12.5	32	11.9	7	16.7		
starve and thirst	12	3.9	11	4.09	1	2.4		
I do not know	74	23.8	70	26.02	4	9.5		
Can rabies be prevented by vaccinated dog?								
yes	230	74.4	201	75.3	29	69.05	0.304	2.385
No	15	4.9	11	4.1	4	9.52		
I do not know	64	20.7	55	20.6	9	21.43		
Method of transmission of rabies?								
dog bite	246	80.13	212	80	34	80.9	0.011	11.121
Other ways	17	5.54	11	4.2	6	14.3		
I do not know	44	14.33	42	15.8	2	4.8		
what is your source of information ?								
From health institution	90	29.4	76	28.7	14	34.2	0.969	3.432
From TV	33	10.78	30	11.3	3	7.3		
From newspaper	23	7.5	10	3.8	1	31.7		

					3			
other sources	160	52.3	149	56.2	11	26.8		
What are Symptoms and signs of rabies in a rabid dog?								
Nervous signs	28	10	24	9.9	4	10.81	0.544	13.764
Hypersalivation	16	5.71	12	4.9	4	10.81		
Attack human and vixenish	31	11.1	23	9.5	8	21.62		
I do not know	178	63.6	164	67.5	14	37.84		
Hydrophopia	13	4.6	11	4.5	2	5.41		
photophopia	14	5	9	3.7	5	13.51		

Table 3: Responses of participants to the questions related to attitude

	Total		In Kirkuk		Outside		Sig	P value
	N	%	N	%	N	%		
Are you annoyed from stray dogs?								
Yes	248	80.3	218	81.3	30	73.17	0.519	2.266
No	51	16.5	41	15.3	10	24.39		
I don't know	10	3.2	9	3.4	1	2.43		
How we can get rid of stray dogs?								
prevent pregnancy in dogs	35	11.5	33	12.5	2	5	0.404	2.924
Other ways	190	62.3	161	60.7	29	72.5		
I do not know	80	26.2	71	26.8	9	22.5		
Who is responsible about control on stray dogs?								
Community	56	18.1	45	16.8	11	26.83	0.027	10.964
Government	215	69.6	191	71.3	24	58.54		
I do not know	38	12.3	32	11.9	6	14.63		
Are you going to inform the responsible bodies about stray dogs?								
Yes	132	43.4	112	42.4	20	50	0.600	1.023
No	121	39.8	106	40.2	15	37.5		
I don't know	51	16.8	46	17.4	5	12.5		
can we get vaccination from governmental institution								
Yes	203	65.3	182	67.6	21	50	0.002	18.656
No	31	9.9	26	9.7	5	11.9		
I do not know	77	24.8	61	22.7	16	38.1		

Table 4: Responses of participants to questions related to practice

	Total		In Kirkuk		Other		Sig.	p-value
	N	%	N	%	N	%		

Rabies target is?								
Children	222	73.3	188	71.8	34	82.93	0.703	6.361
Young	63	20.8	57	21.7	6	14.63		
Old man	18	5.9	17	6.5	1	2.44		
Where you advise the dogs to live?								
in the house	31	10.09	24	9.0	7	17.1	0.375	3.110
Outdoors	221	71.99	193	72.6	28	68.3		
I do not know	55	17.92	49	18.4	6	14.6		
Do you have a dog vaccinated against the rabies?								
Yes	38	12.4	35	13.2	3	7.3	0.717	1.352
No	77	25.1	67	25.2	10	24.4		
I not have a dog	192	62.5	164	61.6	28	68.3		
Is the vaccine available against the rabies?								
found always	97	32.2	89	34.2	8	19.5	0.345	5.616
Sometime	149	49.5	122	46.9	27	65.9		
not found	55	18.3	49	18.9	6	14.6		
Are you trained about looking after the dogs?								
Yes	40	13.0	33	12.4	7	17.5	0.519	2.267
No	171	55.7	147	55.1	24	60		
Do not interest	96	31.3	87	32.5	9	22.5		
What do you do with a rabid dog?								
avoid from the dog	63	20.5	49	18.3	14	35	0.037	17.882
kill the dog	99	32.3	84	31.5	15	37.5		
Keep away from the dog	90	29.3	84	31.5	6	15		
do not do any thing	55	17.9	50	18.7	5	12.5		
What should you do if you get bitten by a dog?								
Wishing by water and soap	30	9.8	25	9.4	5	12.2	0.280	10.932
Treatment by ointment	11	3.6	9	3.4	2	4.9		
Sterilization bite side	37	12.1	34	12.8	3	7.3		
Go to hospital	228	74.5	197	74.3	31	75.6		

Discussion

The result of current study has revealed that the importance of rabies in the study area. The questionnaire survey on public awareness indicated that the community (45%) is familiar with the disease, but, many fallacies regarding the cause and means and source transmission were observed.

Only 45% of the participants had knowledge about rabies. This means that the public awareness in Kirkuk city is very poor concerning rabies in comparison with some Asian countries which showed high level of knowledge of rabies and its transmission. (Agarvval and Reddaiah, 2003; Sharma, 2005; Ichhpujani et al., 2006; Matibag et al., 2008; Matibag et al., 2009). However, the present study also revealed important knowledge gaps, 54% of respondents had no idea about the rabies.

Understanding the community attitude and perception of treatment-seeking behaviors is important for rabies prevention in humans (Matibag et al., 2008). Immediate PEP is required to neutralize the rabies virus in the wound

before it spresds in to central nervous system and brain (Warrell and Warrell, 2004; WHO, 2010). The current study showed good treatment-seeking behaviors as a majority of the respondents (74%) would report to the hospital for dog bite wound treatment. Among these participants 72% knew that the dog bite is the mode of transmission, vaccination of the dogs (74%) will avoid dogs from getting the infection and PEP is crucial to prevent the spread of the disease.

Majority of participant in this study (81.3%) from Kirkuk city annoyed from stray dogs in contrast to the study carried out in Sri Lanka the 51 % of participant were annoyed with stray dogs (10). In the present study 61% of participants preferred control of the stray dogs by any means and the 11.5% selected birth control in dogs. Similar survey to this study 44.8 % participants were selected killing of stray dog and 7.8 % selected the animal birth control (11). However, the study done in and around Dessie city Ethiopia the action for rabid animals 89.9 % selected the killing of the animals (12). 67.6 % of participant from Kirkuk city stated that the vaccine of rabies can be obtained from government institutions, in contrast to KAP study on rabies in community in SRI LANKA 90.6 % of participants obtained vaccines from authorized government offices (13).

The majority of participants in the present study (73.3 %) stated that the children ismajor target by rabid dogs,

However, in similar study carried out around Dessie in Ethiopia showed the risky population is children (98.6 %) (14).

The majority of participants (71.99%) advised the dogs should live outdoors (15).

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