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Perception Of The Public On Common Zoonotic Diseases In Taif Region, Kingdom Of Saudi Arabia.

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Abstract

The objective of this study was to assess the perception of the public on common zoonotic diseases in Taif region, kingdom of Saudi Arabia, using a face-to-face interviewing method. 18% of the sample under study had no information about corona disease, 7 % heard of the disease from the media, relatives or colleagues in work or study, 23% are aware of the disease and its mode of transmission, 52% have complete information of the disease its mode of transmission and clinical signs. There was no statistically significant difference ($P<0.05$) in the level of awareness about rabies in the four respondents groups.

Keyword: zoonotic diseases in Taif region

1. INTRODUCTION

Zoonosis are defined as those diseases and infections naturally transmitted between people and vertebrate animals (WHO, 2005; Jaffry et al., 2009). The link among humans, animal populations and the surrounding environment is very close in many developing countries, where animals are used for transportation, draught power, fuel, clothing

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and sources of protein (that is, meat, eggs, and milk). In the absence of proper care, this contact can lead to a serious risk to public health with huge economic consequences (WHO, 2010).

Zoonosis constitute a diverse group of viral diseases like Ebola (Leroy et al., 2005), bacterial like anthrax (Braderic and Punda-Polic, 1992) and brucellosis (Young, 1989), fungal, parasitic like echinococcosis. (Steele, 1982), and prion disease with a variety of animal reservoirs, including wild life, livestock, pet animals, and birds the transmission may occur through direct contact with the animal, through vectors (such as fleas or ticks), or through food or water contamination. Globally, zoonosis are said to account for 60% of all infectious disease pathogens and 75% of all emerging pathogens. In both developing and developed countries, a number of new zoonosis have emerged (Tesfaye et al., 2013), Vector borne transmissible zoonoses are becoming more and more important in the group of emerging and reemerging infections (Andric et al., 2012)

Emerging and re-emerging zoonosis are infectious diseases that are newly recognized, or newly evolved, or that have occurred previously but have recently shown an increase in incidence or expansion into a new geographic, host or vector (Wong et al., 2002). In the last 25 years, 38 new pathogens have emerged, of which 75 per cent originated as animal disease producing agent. It is reported that 80 per cent of bioterrorist agents are zoonotic and could be used as biological weapons. Moreover, zoonotic diseases account for the majority of infectious diseases. The concept of emerging infectious disease appeared in the last 1980's when major outbreaks occurred around the globe. Disease emergence often follows ecological change caused by human activities such as agricultural changes, urbanization, migration, deforestation and dam building (Pal. M, 2013).

According to (Elsheikh, et al., 2011), results revealed the prevalence of both human and animal brucellosis with an infection rate ranging from 7.3% in diseased humans to 15% in diseased animals. The Prevalence of tapeworm infections among sheep slaughtered in Riyadh City were studied by (Al-Qureishy, 2008) , the results showed that the highest infection rate was in autumn (8.1%), and the lowest one was in summer (1.7%). (Hayajneh et al., also described the prevalence of hydatidosis which is a common zoonotic disease in sheep and goats in Taif, Kingdom of Saudi Arabia), the increase in tuberculosis cases over a four-year period (1995-1998), from 504 to 726 patients (44%) indicates a serious need to study the zoonotic diseases in The kingdom of Saudi Arabia (Al-Hajjaj, 2000), a case of neurocysticercosis (teniasis) was reported in Saudi Arabia by Al (Shahrani, 2003)

2. MATERIALS AND METHODS

1.1. Study area

Al Taif is the third city of Saudi Arabia. It covers about 540 km2, of which 18.2 km2 is rural. It lies between 2200 and 2500 m above sea level. In Al Taif, there is one municipal abattoir where cattle, sheep, goats and camels are slaughtered and animals for slaughter come from different regions of the western province in Saudi Arabia. The

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main purposes of the Al Taif abattoir are processing of one or several classes of livestock into fresh meat for human consumption, hygienic processing and storage of meat and edible by-products (Hayajneh et al., 2014).

1.2. Sampling method

The method employed to select the respondents was a simple random sampling method. Respondents were selected during questionnaire administration in different parts of the town and peasant associations around the town. During the questionnaire administration, any member of the households who was willing to participate in the interview was taken as a sampling unit. The language used in the questionnaire was the Arabic language.

1.3. Study methodology

A semi-structured questionnaire was pretested and used for the face-to-face interview to evaluate the perception of the community about the common zoonotic disease (Unger and Munstermann, 2004). Arabic language was used for the interview. On average, 25 min were spent with each respondent. Questions in the questionnaire contained questions that can evaluate the perception of the respondents about zoonotic diseases' importance, their transmission cycle and major clinical signs in humans and animals.

1.4. Data management and analysis

The data collected was properly coded and entered into an excel spreadsheet, which was later on entered into SPSS version 17, which was used to analyze the results.

3. RESULTS

Table 1: Methods of disease transmission

	From animal to human by direct contact			Transmission by eating contaminated products		
Sex	Yes	No	Total	Yes	No	
Male	59	20	79	52	27	79
Female	16	5	21	12	9	21
	P<0.05		100	P<0.05		100

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Table 2: Awareness of zoonotic diseases

Sex	Do you know zoonosis		Do you know any zoonotic disease			
	Yes	No	No	1 Disease	2 Diseases	3 Diseases
Male	31	48	17	28	29	5
Female	13	8	4	14	3	0
	44	56	21	42	32	5

Table 3:Awareness of the different zoonotic diseases

		education level				
		Elementary	secondary	high school	university degree	Total
Tuberculosis	no information	0	5	25	25	55
	only heard of	0	6	8	6	20
	know mode of transmission	3	3	6	9	21
P<0.05	know the signs	0	3	0	1	4
rabies	no information	1	5	22	20	48
	only heard of	0	6	14	6	26
	know mode of transmission	2	3	3	15	23
	know the signs	0	3	0	0	3
brucellosis	no information	2	5	21	15	43
	only heard of	1	6	11	16	34
	know mode of transmission	0	3	7	10	20
	know the signs	0	3	0	0	3
Teniasis	no information	3	14	27	34	78
	only heard of	0	3	10	7	20
	know mode of transmission	0	0	2	0	2
	know the signs	0	0	0	0	0
Corona P<0.05	no information	1	5	6	6	18
	only heard of	0	0	6	1	7

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	know mode of transmission	0	5	9	9	23
	know the signs	2	7	18	25	52
Ebola virus disease	no information	0	5	19	16	40
P<0.05	only heard of	1	9	14	21	45
	know mode of transmission	2	0	6	4	12
	know the signs	0	3	0	0	3
Anthrax	no information	3	8	33	27	71
	only heard of	0	6	5	11	22
	know mode of transmission	0	3	1	2	6
	know the signs	0	0	0	1	1
Echinococcus	no information	3	11	34	36	84
	only heard of	0	6	3	3	12
	know mode of transmission	0	0	2	2	4
	know the signs	0	0	0	0	0

18% of the sample under study had no information about corona disease, 7 % heard of the disease from the media, relatives or colleagues in work or study, 23% are aware of the disease and its mode of transmission, 52% have complete information of the disease its mode of transmission and clinical signs., the second well recognized was brucellosis and rabies which were recognized by 3%, who had very good awareness of the disease which included mode of transmission and the clinical signs. Echinococcosis and teniasis were not well known by the sample under study where no one had information about the clinical signs of the two diseases (Table 1).

In table 2 the awareness of the sample under study of the different methods of disease transmission is clear where 75% are aware that zoonotic diseases could be transmitted to humans by direct contact, 64% are aware that zoonotic diseases could be transmitted by eating contaminated animal products. Table 3 shows that the sample does not really understand the term *zoonotic disease*, only 44% know that the meaning of this term, whereas 21% of the sample couldn't mention any zoonotic disease, 5% of the sample mentioned 3 zoonotic diseases, most of the sample mentioned coronavirus, Ebola virus disease, aids and influenza as zoonotic diseases.

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4. DISCUSSION

In general, the present study revealed a low level of awareness by the public about major zoonotic diseases, signifying the need for public health promotion through education and inter-disciplinary health approach with close collaboration among veterinarians, public health practitioners and policy makers, in the present time there is an Advertising campaign in the newspapers, television, in public clinics to educate the people about corona virus disease, its mode of transmission, and clinical signs, the results of this campaign are so clear in this study, where the samples are aware of this disease in the region, it is advised to do a similar campaign to educate the public on the other zoonotic diseases.

According to (Al-qureishy, 2008) cestode parasites are present in sheep slaughtered in riyadh city, (Hayajneh et al., 2014) also showed that hydatid cyst cases are present among sheep and goat slaughtered in Al Taif abbatoir. 162 (13.5%) sheep and 18 (6.1%) goats were found harboring hydatid cysts. Zoonotic diseases can cause serious problems to humans, (Almogren et al., 2013) reported cases of Qfever (query fever), which is a zoonosis caused by Coxiella burnetii (C burnetii) that can cause acute or chronic human disease in Riyadh. In developing countries in Asia and Africa, poor sanitation conditions lead to outbreaks of transmissible diseases like acute hepatitis E (Yugo and Meng, 2013).

With regard to the perception of Tuberculosis, Coronavirus disease and Ebola virus disease as a zoonotic diseases, there was a significantly ($P<0.05$) different level of awareness among the different respondent which can imply that these diseases are well known disease in the area. This is evidenced by the fact that a higher proportion (75% direct contact transmission, 64% through contaminated products) of the respondents knew the means of transmission these diseases to humans. Also the means of transmission of the different diseases to humans was clear ($p<0.05$) which indicates a good understanding of this issue among the representants. Tuberculosis, which is an endemic disease in Saudi Arabia. Efforts to control this disease started in 1992 with the establishment of a National Tuberculosis Control Committee (Al-Hajjaj, 2000).

5. CONCLUSION.

It is not possible to predict, which zoonotic diseases are likely to emerge next or cause the problems to humans. Given the obvious link between human health and pathogens that circulate in domestic animals and wildlife, we must be alert and able to deal with such serious issues, this can be best done through education of the public on zoonotic diseases around us.

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