

## ORIGINAL ARTICLE

# Assessment Knowledge for Some Zoonotic Disease Among People Attending Health Center in Bab Al- Muadham - Baghdad City

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## ABSTRACT

**Introduction:** The serious of zoonotic diseases is often attract by public health as the incidence is difficult to evaluate and the severity of disease has socioeconomic impacts on public health. **Methods:** A descriptive cross sectional study was carried out during the period between 12 December 2018to 10 March 2019 to assessing knowledge regarding some zoonotic disease among people attending health center at Bab Al - Muadham - Baghdad city . A purposive sample of 150 volunteers was selected. So that questionnaire and the structured interview technique were used as means of data collection and consisted three sections. **Results:** Ages of the participants ranged 18 - 34 years. While third of participants were females. Regarding education level of third of participants was higher educated. 28.7% of participants were students. 83.3% of participations said yes when asked about animals can transmit rabies .23.3 have the knowledge of clinical feature of Echinococcosis and only 31.3 % awareness of clinical features anthrax. **Conclusion:** Lack knowledge regarding causative agent of *Bovine tuberculosis* and causative agent of *Echinococcosis cyst*. Few participants know causative agent of Anthrax. Good knowledge about mode of transmission of rabies while only third of participants know transmission rout of *bovine tuberculosis* and anthrax.

**Keywords:** Zoonotic diseases, Bab Al- Muadham , Health center, Echinococcosis cyst ,Knowledge

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## INTRODUCTION

Zoonosis is those infections that can be transmitted between animals and human hosts. Animals not infected by microorganism pathogen by itself therefore microorganism need to find rout to enter the body of the animals (1). Majority animal related problems which the negative impact global individual health and economy including Zoonosis, food borne diseases or environment pollution from the animal sources. It could be atypical agents or any kind of microorganism (2). Zoonosis includes high percentage of whole recent diagnosis infectious diseases add to many existing ones (3). There are diseases as HIV, begin as a zoonosis but later change to human strains. It may be can causes frequent disease outbreaks, such as Ebola virus disease and salmonellosis

(4). Numerous of zoonotic diseases have the ability to spread to human by direct contact with live animal as Brucellosis (5). Most zoonosis endemic in the developing countries where found conditions for their stay and spread and it may lead to epidemic (6). Worldwide, zoonosis is responsible for about 1,000,000,000 conditions with about 1,000,000 of dying that occurs annually. Furthermore, zoonosis accounts more than half of recently discovered contagious illnesses that are recorded globally. In the recent 30 years up to thirty emerging human pathogens that have been exposed, three quarter of these pathogens had animal origin (7).

## MATERIALS AND METHODS

Zoonosis is those infections that can be transmitted between animals and human hosts. Animals not infected by microorganism pathogen by itself therefore microorganism need to find rout to enter the body of the animals (1). Majority animal related problems which the negative impact global individual health and economy

including Zoonosis, food borne diseases or environment pollution from the animal sources. It could be atypical agents or any kind of microorganism (2). Zoonosis includes high percentage of whole recent diagnosis infectious diseases add to many existing ones (3). There are diseases as HIV, begin as a zoonosis but later change to human strains. It may be can causes frequent disease outbreaks, such as Ebola virus disease and salmonellosis (4). Numerous of zoonotic diseases have the ability to spread to human by direct contact with live animal as Brucellosis (5). Most zoonosis endemic in the developing countries where found conditions for their stay and spread and it may lead to epidemic (6). Worldwide, zoonosis is responsible for about 1,000,000,000 conditions with about 1,000,000 of dying that occurs annually. Furthermore, zoonosis accounts more than half of recently discovered contagious illnesses that are recorded globally. In the recent 30 years up to thirty emerging human pathogens that have been exposed, three quarter of these pathogens had animal origin (7).

**Study Instrument**

A questionnaire consisted of 3 sections. Section one was about socio-demographic profiles of the participants. Section two was designed to evaluate the knowledge related to assess causes, clinical features and diagnosis of anthrax, bovine tuberculosis, rabies, echinococcosis and brucellosis. Section three was asked for sources information about zoonotic diseases were required to complete the rest of the questionnaire.

**Data Collection**

Data were collected through utilization of the interview technique with each subject means of data collection process and by using a structured questionnaire .Whilst the time required for each volunteer interview was (5) minutes.

**Data Analysis**

Statistical analyses of data in this study that has been used for to analyze the results of the study by implementation of the statistical package for social sciences (SPSS) ver. (10.0): The frequencies and percentages were representing descriptive data analysis.

The study was confirmed by the Committee of Research Ethics in Technical Medical Institute of Middle Technical University No:7/ 27 / 4074 / date 25/11/2019

**RESULTS**

**Demographic distribution**

The observed frequencies and percent of demographic characteristics of the studied samples are show in the table one. Ages of the participants ranged 18 - 34 years. 49.3% were males and 50.7% were females. Regarding education level of 42.7% were highly educated. 28.7% were students and 12.7% were farmers (Table I).

**Table I: Demographic distribution of study sample**

Variables	N (150)	%
<b>Age groups</b>		
18-22	61	40.7
23- 27	25	16.7
28-33	23	15.3
34>=	41	27.3
<b>Gender</b>		
Males	74	49.3
Females	76	50.7
<b>Education level</b>		
Illiterates	9	6
Read and write	14	9.3
Primary school	35	23.3
Secondary school	28	18.7
Higher education	64	42.7
<b>Occupation</b>		
Government employee	20	13.2
private employee	21	14
House wife	28	18.7
Student	43	28.7
Unemployed	19	12.7
Farmer	19	12.7

**Knowledge regarding causative agent**

42% of participants heard about *Bovine tuberculosis* and only 22.7% know causative agent of *Echinococcus*. 70.7 % heard about *Echinococcosis* but only 30% know causative agent. Few participants know causative agent of Anthrax (Table II)

**Knowledge regarding mode of transmission**

83.3% of participants said yes when asked about animals can transmit rabies and 71 .3%. know ways can rabies be transmitted to people.Only 46% of people know transmission rout of BTB from animal to human and also few numbers of participants said yes when asked of who can be infected by anthrax (Table III).

**Table II: Distribution of study samples according to their Knowledge regarding causative agent**

Items	N (150)	%
<b>Have you ever heard about Bovine tuberculosis</b>		
Corrected answer	63	42
uncorrected answer	87	58
<b>Do you know causative agent of Bovine tuberculosis</b>		
Corrected answer	34	22.7
uncorrected answer	116	77.3
<b>Heard about echinococcosis</b>		
Corrected answer	106	70.7
uncorrected answer	44	29.3
<b>Do you know causative agent of echinococcus</b>		
Corrected answer	46	30.7
uncorrected answer	104	69.3
<b>Do you know causative agent of Anthrax</b>		
Corrected answer	31	20.7
uncorrected answer	119	79.3

**Table III: Distribution of study samples according to their Knowledge regarding mode of transmission**

Items	N(150)	%
<b>Do you know animals can transmit rabies</b>		
Corrected answer	125	83.3
Uncorrected	25	16.7
<b>Do you know method can rabies be transmitted to human</b>		
Corrected answer	107	71.3
Uncorrected	43	28.7
<b>Is rabies transmitted from person to person</b>		
Correct answer	81	54
Uncorrected	69	46
<b>The Brucella bacteria can pass from a sick animal through the milk</b>		
Corrected answer	110	73.3
Uncorrected	40	26.7
<b>Is TB of cattle communicable to man</b>		
Corrected answer	81	54
Uncorrected	69	46

CONTINUE

**Table III: Distribution of study samples according to their Knowledge regarding mode of transmission (CONT.)**

Items	N(150)	%
<b>Do you know transmission rout of Bovine tuberculosis from animal to human</b>		
Corrected answer	69	46
Uncorrected	81	54
<b>Are you aware that it could be dangerous to eat raw vegetables contaminated with dog faeces</b>		
Corrected answer	110	73.3
Uncorrected	40	26.7
<b>Awareness of who can be infected by anthrax</b>		
Corrected answer	55	36.7
Uncorrected	95	63.3

**Knowledge regarding clinical features**

71% practitioners say uncorrected answers regarding clinical features, while 85.3% of participants know *Brucellosis* can cause weakness and high temperature. 23.3 have the knowledge of clinical feature of *Echinococcosis* and only 31.3 % have the awareness of clinical features of anthrax (Table IV)

**Table IV: Distribution of study sample according to their Knowledge regarding clinical features**

Items	N(150)	%
<b>Awareness of Clinical features of Bovine tuberculosis</b>		
Corrected	43	28.7
Uncorrected	107	71.3
<b>The disease caused by Brucella causes weakness and high temperature</b>		
Corrected	128	85.3
Uncorrected	22	14.7
<b>Seen hydatid disease in animal organ</b>		
Corrected	66	44
Uncorrected	84	56
<b>Seen hydatid disease in man</b>		
Corrected	51	34
Uncorrected	99	66
<b>Do you know if echinococcosis disease can be dangerous to human health</b>		
Corrected	35	23.3
Uncorrected	115	76.7

CONTINUE

**Table IV: Distribution of study sample according to their Knowledge regarding clinical features (CONT.)**

Items	N(150)	%
<b>Awareness of Clinical features anthrax</b>		
Corrected	47	31.3
Uncorrected	103	68.7

**Knowledge regarding treatment**

66% of people said yes when asked about receiving rabies vaccination if bitten by a suspected rabid animal and 35% know that a person with rabies could be healing after symptoms appears. 77.3% know the Brucellosis can be treated in humans with medication. Only 43.3% from participants said correct answer when asked Brucella bacteria can be killed when the milk is pasteurized or boiled to at least 63°C (Table V).

**Table V: Distribution of study samples according to their Knowledge regarding treatment**

Items	N(150)	%
<b>Do you know from where receive rabies vaccine if bitten by a suspected rabid animal</b>		
Corrected answer	99	66
Uncorrected	51	34
<b>Do you know can patient with rabies be cured after symptom appear</b>		
Corrected answer	53	35.3
Uncorrected	97	64.7
<b>In order to control of zoonotic diseases the pet animals must be vaccination</b>		
Corrected answer	112	74.7
Uncorrected	38	25.3
<b>Brucellosis can be treated in humans with medication</b>		
Corrected answer	116	77.3
Uncorrected	34	22.7
<b>Brucella can be killed when the milk is pasteurized or boiled to at least 63 (C<sup>o</sup>)</b>		
Corrected answer	65	43.3
Uncorrected	85	56.7

**Sources information**

Data showed that the main source of information about zoonotic diseases was internet 47.3%. TV and radio were 44.6 % and, while 16.7% said newspapers and magazine (Table VI).

**Table VI: Distribution of study sample according to the sources information**

Sources information	N(150)	%
Media	67	44.6
Internet	71	47.3
Newspapers, magazine	25	16.7
Where did you hear about zoonotic diseases		
Medical books	30	20
Medical workers	27	18

More than one answer

**DISCUSSION**

In this study the participant’s ages ranged from 18 - 34 years. 49.3% were males and 50.7% were females. Regarding education level of 42.7% were with higher education. 28.7% were students and 12.7% were farmers of demographic characteristics of the studied samples were collected personality from 150 person.

Regarding knowledge of causative agent 42% of participants heard about *Bovine tuberculosis* and few numbers of participants know the causative agent of BTB. Nearly half of participants heard about *Echinococcosis* but only 30% known the causative agent and few participants determined causative agent of Anthrax. This may be due to existing and continues the zoonotic disease in Iraqi community therefore participants heard about it but not have enough aware to know causative agent and these diseases as rabies, hemorrhagic fever and anthrax had significant national health of population concern currently present in Iraq (9) . These results was in agreement with Hundal et al.,(2016) who said Livestock farmers had knowledge regarding rabies, while the responses regarding last zoonotic diseases was blow to equal the average. Farmers said that they did not hear about causative agent of *Echinococcus* (10) . Most of participant said yes when asked about animals can transmit rabies and know ways can rabies be transmitted to people while less than half people transmission routes of BTB from animal to human and also few numbers of participants said yes when asked of who can be infected by anthrax. These results may due to rabies was endemic disease in Iraq compare *Bovine tuberculosis* bacteria and anthrax. These results disagree with Sitali, et al.,in 2017 who found that knowledge about anthrax were 85.1% of participant said it transmitted by eating infected meat also more than half had knowledge that humans and animals can be infected with anthrax and consistent with Jagadeesh, et al., in 2015 who found that 14% of respondents knew that zoonotic diseases are transmitted through consumption of milk and meat(11,12).

Most participants say uncorrected answers regarding clinical features of *Bovine tuberculosis* bacteria and only 31.3 of them aware clinical features anthrax. 85.3% of participation know *Brucellosis* can cause weakness and high temperature while 76.7% have the right knowledge of clinical feature of *Echinococcosis* these results regarding Brucellosis may be due to endemic disease comparative Echinococcosis these results are in agreement with Khan et al 2018 who found awareness among community of Rawalpindi/Islamabad were low (13). As well agreement with Islam and Ahmed in Bangladesh 2019 who found that minimum educational level and non-health education makes the professionals unconcerned about this type of diseases (14). About 66% of subjects said that people should be receive rabies vaccination when exposure to bitten suspected rabid animal and 35% said yes can a person healing after symptoms appear. In addition 77.3% know that *Brucellosis* can be treated in humans with medication. While 43.3% from participants give the correct answer when asked if *Brucella* bacteria can be killed when the milk is pasteurized or boiled to at least 63°C . This likely caused by the lack of proper guidance and activities to raise community awareness about these zoonotic diseases by health institutions. These results in agreements with other authors who found the relationship between people and animal are relatively closer especially in middle and poor societies, the reasons of that these animals considered as the cornerstone of nutrition, agriculture application and mobility this relation alongside with absent aware make human more exposure to health risks and can cause zoonotic diseases (10, 14). The internet was main source of information about zoonotic diseases were 47% .While 44% were from media and 30% were from medical books as the sources information . However the least sources of information were from newspapers 16% only. These results are in agreement with Jagadeesh et al., 2015 who found that the main source of information about zoonotic disease was media (12).

## CONCLUSION

Regarding education level third of participants were higher . Only few participants know the causative agent of Anthrax. Participants had a good knowledge about mode of transmission of rabies while only third of participants knows the transmission rout of *Bovine tuberculosis bacillus* and anthrax. Nevertheless, we concluded that awareness of clinical features regarding zoonotic diseases was low. Also awareness regarding preventive measures and therapy of rabies was unsatisfactory, while nearly half of participants have aware regarding of *Brucellosis*. The main sources of information about zoonotic diseases were internet and media.

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