



Knowledge, Attitude, and Practice Regarding Coronavirus Disease-19: Population-Based Study in Iraq

Hasanain Faisal Ghazi^{1*}, Taqi Mohammed Jwad Taher², Mohammed A. AbdalQader¹, Rana Hussein Raheema³, Mohammed Faez Baobaid¹, Tiba Nezar Hasan¹

¹Department of Community Medicine, International Medical School, Management and Science University, Selangor, Malaysia; ²Department of Community Medicine, College of Medicine, University of Wasit, Iraq; ³Department of Microbiology, College of Medicine, University of Wasit, Iraq

Abstract

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***Correspondence:** Dr. Hasanain Faisal Ghazi, International Medical School, Management and Science University, Selangor, Malaysia. E-mail: dr.hasanainhabasha@gmail.com

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INTRODUCTION: In March 2020, the world health organization declared Coronavirus Disease (COVID)-19 a pandemic global communicable disease, there is neither a vaccine nor a treatment for this virus. The aim of the current study was to assess knowledge, attitude, and practice (KAP) of Iraqi population toward COVID-19.

METHODS: A cross-sectional study was conducted among 272 respondents from different states of Iraq using online administered questionnaires. The questions were adopted from the previous study and consist of three parts mainly socio-demographic, KAP.

RESULTS: The majority of the respondents had good knowledge regarding COVID-19 (95.2%). A total of 97.8% of the respondents knew that COVID-19 caused by a virus. Regarding incubation period, 75% of them answer correctly that it is 2–15 days. Higher percent (39%) and 37.9% of participant people considered the disease as a very dangerous and seriously dangerous disease, respectively. The majority (85.3%) of the sample thought that no vaccination available for the disease. More than two-thirds of the sample (76.5%) were wearing face mask sometimes while only 19.5% wearing it all the time. The majority (265) out of 272 was ready to stay home if it required to prevent the spread of the disease. There was a significant association between gender, living state, and COVID-19 knowledge ($p = 0.009, <0.0001$), respectively.

CONCLUSION: The overall knowledge, practice of respondents was good regarding COVID-19. People need to stay at home to prevent the infection and reduce the number of cases.

Introduction

The new epidemic virus infection 2019-novel coronavirus (nCoV) (now named Severe acute respiratory syndrome [SARS]-CoV-2) that rise in china with about tens of thousands of people infected give worldwide attention and response as it infects people in about 28 countries [1]. The first record of this nCoV was in Wuhan, China, at the end of 2019 [2]. This virus is belonging to a large family of viruses that can infect a wide range of organisms such as birds and mammals, including humans, according to the world health organization (WHO) [3].

For its more pronounce symptom, the new diseases are called the SARS-CoV-2 [4], [5]. The features of the nCoV (2019-nCoV) are summarized as a positive-sense single-stranded RNA virus mainly with respiratory illness. Hence, the new SARS-CoV-2 disease is a contagious in humans it gets attention and the WHO announced it as an ongoing pandemic disease with public health emergency of international concern [6], [7].

Each infection results in 1.4–3.9 new cases according to epidemiological studies when there is no immune previously done and no preventive measures are taken. The primary route of infection of this virus appears related to close contact with infected people and through coughs or sneezes which release a respiratory droplet [8]. After contact, the virus starts to invade the human cells by binding to the angiotensin-converting enzyme receptor 2 [9].

In Iraq, the first CoV disease (COVID)-19 cases was discovered in February 2020. As of August 1, 2020, there are 126,704 confirmed cases with 4805 deaths [10].

No approved SARS-CoV-2 therapy or vaccine is currently available. Primary step to reduce the spread of the virus both in health-care settings and the population is to introduce effective infection controls [11]. Public awareness of the treatment of highly infectious respiratory diseases plays a key role in limiting infection spread, especially in middle and low revenue countries, where health systems at best have moderate capacity to respond to outbreaks. Egypt had over 800 confirmed

cases by the beginning of April 2020 and over 50 deaths, with a fast growth trend [12]. The development of vaccines is estimated to take months, and so crisis management mainly depends on adherence of people to the measures recommended. The awareness, perceptions, and behaviors (knowledge, attitude, and practice) of the public have a significant impact on these measures [13].

The aim of the current study was to find out the level of knowledge and practice about COVID-19 among general population in Iraq.

Methods

A cross-sectional study was conducted among 272 adults living in Iraq using internet-based platform. The respondents were chosen using non-probability convenience sampling. The questionnaires link was distributed to respondents through Facebook groups and a Google form was used to host and distribute the questions. After accessing the link, respondent needs to read the consent form carefully and agrees to participate in the study. A full explanation of the study aims, and objectives were written in the introduction part of the questionnaires. All the questionnaires are compulsory to answer. The questionnaires consist of three parts, Part 1 about socio-demographic data (age, gender, educational level, working status, and state), Part 2 about COVID-19 knowledge (transmission method, treatment availability, incubation period, and patient presentation), and Part 3 about practice and attitudes toward COVID-19 (hand washing, hand sanitizer, and home quarantine). The questionnaires were adopted from the previous study [14].

Knowledge questionnaires consist of seven questions and maximum score of 7. Those who answered more than 50% considered to have good knowledge.

The sample size was calculated based on the previous study [13] where good knowledge was 90% and using single population proportion formula.

$N = 1.96^2 \times (0.90 (1-0.90)/0.05^2) = 139 + 20\%$ non-response rate = 167 the minimum sample size required.

We decided to use internet-based method in data collection due movement restriction and curfew imposed by Iraqi government on March 17, 2020, that make it difficult to use physical data collection methods and also to decrease the contact between people to minimum as much as possible.

Data were analyzed using SPSS software version 24. All respondents filled up a consent form and agreed to participate in the study before proceeding to the questionnaires and ethical approval was taken

from International Medical School, Management and Science University.

Results

Table 1 demonstrates the socio-demographic features of the study participants. The mean age for the 272 respondents was 36.35 ± 7.87 , with more than half of them (58.1%) were males. Only nine states were involved in answering the survey questions, with a higher percentage in Baghdad city which represents about 182 (66.9%) of the whole sample, followed by 37 persons (13.65%) were from Basra city. The majority (87.5%) of the sample were working at the same period of data collection with 202 (74.3%) of them had postgraduate educational level. The internet and different social media such as Facebook and Instagram were the major source of information about COVID-19 in 130 (47.8%) of the sample, followed by medical doctors in about 30 (25.8%) of the participants. Only 9 (3.3%) of the sample were mentioned as a relative to positive COVID-19 test patients.

Table 1: Socio-demographic characteristics of the respondents

Variables	Min.	Max.	Mean	SD
Age	23.0	65.0	36.35	7.87
	N		%	
Gender				
Male	158		58.1	
Female	114		41.9	
State				
Erbil	6		2.2	
Basra	37		13.6	
Sulaymaniyah	7		2.6	
Mosul	7		2.6	
Baghdad	182		66.9	
Diyala	6		2.2	
Dhi Qar	5		1.8	
Kirkuk	2		0.7	
Wasit	20		7.4	
Currently Working				
No	34		12.5	
Yes	238		87.5	
Educational level				
Secondary	4		1.5	
University degree	66		24.2	
Postgraduate	202		74.3	
Source of information				
Television	49		18.0	
Internet (Facebook, WhatsApp, Instagram)	130		47.8	
Medical doctors	30		25.8	
Radio	23		8.4	
Relatives with COVID-19				
No	263		96.7	
Yes	9		3.3	

Table 2 shows the knowledge of respondents about COVID-19. Most of the sample 266 (97.8%) were aware of the nature of the disease and agreed with the answer (virus) as a cause of the disease. In this study, 250 respondents (91.9%) mentioned infected persons who transmit the disease, while only 15 (5.56%) were mentioned Bats. Two-thirds of the sample (75%) were informed about the true incubation period of COVID-19. Most of the study participants (83.82%) knew that washing hands can be an effective preventive method for the disease rather than covering face while sneezing and vaccination. About patients'

Table 2: Knowledge on COVID-19 among respondents

Knowledge	n (%)
COVID-19 caused by	
Virus	266 (97.8)
I do not know	6 (2.2)
COVID-19 transmitted by	
Camel	7 (2.6)
Bats	15 (5.56)
Infected person	250 (91.9)
COVID-19 Incubation period	
2–10 days	25 (9.2)
2–20 days	33 (12.1)
2–15 days	204 (75.0)
I do not know	10 (3.7)
Patient presentation	
Sore throat, vomiting and diarrhea	19 (6.99)
Fever and body ache	48 (17.65)
I do not know	3 (1.10)
Lower respiratory syndrome (cough and shortness of breath)	183 (67.28)
Upper respiratory syndrome (Runny nose, Sore throat)	19 (6.99)
Prevention possible through	
Vaccine	6 (2.21)
Cover face when sneezing	27 (9.93)
Wash hands regularly	228 (83.82)
No method for prevention	11 (4.04)
COVID-19 treatment	
Supportive at home	91 (33.46)
At hospitals	70 (25.74)
ICU	23 (8.46)
No treatments	88 (32.35)
Most affected areas in the world	
China	257 (94.49)
Iraq	2 (0.74)
USA	13 (4.78)

presentations, 183 (67.28%) persons mentioned lower respiratory symptoms. It was obvious for 257 (94.49%) participants that China is the most affected area in the world. About 33.46% and 32.35% answered the using of a supportive treatment at home and no treatment, respectively, for the treatment of this disease.

In Table 3, about 80.2% of participants mentioned that COVID-19 is a contagious disease and can lead to death, higher percent (39%) and (37.9%) of participant people considered the disease as a very dangerous and seriously dangerous disease, respectively. The majority (85.3%) of the sample thought that no vaccination available for the disease. Regarding the practices performed by the respondents toward COVID-19, Table 3 shows more than that

Table 3: Attitudes and practice regarding COVID-19

Attitude	n (%)
I think COVID-19 is	
Contagious and cannot lead to death	54 (19.8)
Contagious and can lead to death	218 (80.2)
I feel COVID-19 is dangerous	
Dangerous	56 (20.6)
Very dangerous	106 (39.0)
Seriously dangerous	103 (37.9)
Not dangerous	7 (2.6)
There is vaccine for COVID-19	
No	232 (85.3)
Yes	17 (6.2)
I do not know	23 (8.5)
I wear face Mask	
Sometimes	208 (76.5)
All the times	53 (19.5)
No benefit	11 (4.0)
I wear gloves	
Sometimes	184 (67.7)
All the times	81 (29.8)
No benefit	7 (2.5)
I wash my hands	
More than 10 times/day	136 (50.0)
More than 3 times/day	125 (45.0)
1–2 times/day	11 (4.1)
I use hand sanitizer	
No	63 (23.2)
Yes	209 (76.8)
I will stay at home if require	
No	7 (2.6)
Yes	265 (97.4)

two-thirds of the sample (76.5%) were wearing face mask sometimes while only 19.5% wearing it all the time. About a third (29.8%) wears gloves all the time. Very little percent (4.1%) were washing hands <3 times/day, while the majority (76.8%) using hand sanitizer. As mentioned above, the majority 265 out of 272 was ready to stay home if it required to prevent the spread of the disease.

Table 4 demonstrates the association between socio-demographic characteristics and COVID-19 knowledge, there was a significant association between gender, living state, and COVID-19 knowledge (p = 0.009, <0.0001) respectively.

Table 4: Association between socio-demographic characteristics and COVID-19 knowledge

Variables	Knowledge		X ²	p-value
	Poor n (%)	Good n (%)		
Gender				
Female	1 (0.9)	113 (99.1)	6.56	0.009 ^a
Male	12 (7.6)	146 (92.4)		
Working Status				
No	0 (0)	34 (100.0)	1.95	0.163 ^a
Yes	13 (5.5)	225 (94.5)		
Educational level				
Secondary	0 (0)	4 (100.0)	5.16	0.076 ^b
University	0 (0)	66 (100.0)		
Postgraduate	13 (6.4)	189 (93.6)		
Living states				
Erbil	6 (100.0)	0 (0)	124.10	<0.001 ^b
Basra	0 (0)	37 (100.0)		
Sulaymaniyah	0 (0)	7 (100.0)		
Mosul	0 (0)	7 (100.0)		
Baghdad	7 (3.8)	175 (96.2)		
Diyala	0 (0)	6 (100.0)		
Dhi Qar	0 (0)	5 (100.0)		
Kirkuk	0 (0)	2 (100.0)		
Wasit	0 (0)	20 (100.0)		

^aChi-square test was performed, ^bFisher exact test was performed

Discussion

Our findings suggest that general population in Iraq have good knowledge regarding COVID-19 with good level of practice just few weeks into the global pandemic announced by the WHO of COVID-19 and after declared public health emergency of international concern.

The level of good knowledge in our study was 95.2% which is similar to previous studies done [13]. Regarding the source of information, overall, the internet and social media (Facebook, WhatsApp, and Instagram) account for the main source of information of 47.8% of all other sources, second highest from medical personnel of 25.8% and least through radio 8.4% and that is persistent with another study done in China in year 2020 which found that the internet (93.5%) was the primary health information channel for the general public during the initial stage of COVID-19 epidemic in China [15].

In this study, it was found that the level of knowledge was good overall the major parameters of knowledge and as compared to other study done in mainland China in 2020 it was similar result to us such

as COVID-19 knowledge where respondents indicate that droplets (92.1%), infected artifacts (73.7%), and airborne transmission (60.5%) are the most frequently seen transmission path. Nearly all respondents learned of an increase in infected people (98.8%), an increase in deaths (97.8%) and an increase in the number of persons recovered (93.3%). The Web was the most popular source of health information on COVID-19 (93.5%). The majority, 75.1%, were very satisfied with the quantity of available health data [15].

This study showed high knowledge about the transmission mode through infected person 91.9% and that is consistent with the finding of other study which stated human-to-human transmittances for COVID-19 are well-established, with the WHO at present estimated to be 1.4–2.5 for R0 (expected number of secondary cases produced by a single typical) infected population [16].

The present study showed that the respondents had a strong understanding of the Cause-Inductor for the COVID-19, which was the 97.8% CoV, and this was similar to the international findings that a novel beta-CoV now called SARS-CoV-2 causing clinical disease called COVID-19. SARS-CoV-2 shares 79% SARS-CoV sequence identity, which resulted in a major outbreak in 2002–2003 [17], [18], [19].

The respondent's knowledge about the clinical symptoms was mainly toward the lower respiratory syndrome (67.28%) for cough and shortness of breath, and next mentioned fever and body ache (17.65%), and 1.1% stated they know nothing about the symptoms. A research was done in the United Kingdom (UK) mentioned that the most common symptoms being reported are fever, cough or chest tightness, and dyspnea, also added that cases are reported to experience a mild illness course [20].

Another research in the UK found fever (98%), cough (76%), dyspnea (55%), and myalgia or weakness (44%) to be the most common signs of disease launch. Not least of all, few patients had strong signs of the upper airway tract like coryza and only one patient had diarrhea. Other clinical characteristics include development of sputum (28%), headache (8%), and hemoptysis in two cases [21].

This study has several limitations. Given the limited resources available and time-sensitivity of the COVID-19 outbreak that forced the authors to collect the data virtually through online questionnaires. Bigger study with more participants is needed also need to measure the impact of home stay on people's daily life.

Conclusion

The overall knowledge, practice of respondents was good regarding COVID-19. People need to stay at

home and follow the health authorities' instructions to prevent the infection and reduce the number of cases.

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