Knowledge about COVID-19 among Citizens in Thi-Qar Governorate/Iraq: an Online Survey

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Abstract

Epidemics of infectious disease, such as coronavirus disease 2019 (COVID-19), necessitates knowledge assessment of pertinent populations as fast as possible because the findings are of great importance to the public health response. This study aims to (i) Assess the knowledge of Iraqi residents about COVID-19 and (ii) Identify the relationship between certain demographic features and the overall knowledge. This study was conducted in Thi-Qar governorate/Iraq, the researcher used an electronic survey questionnaire (using google form), the Uniform Resource Locator was distributed through social media platforms with brief introduction concerning the study. The tool of the study (questionnaire) involved of two parts: demographics (4 items) and knowledge questionnaire (3 sub-domains including 12 items). The total correct answers rate was (88.1%). Lowest answers rate scored in routes of transmission sub-domain (82.5%) while control and prevention (92.7%) sub-domain scored the highest rate. Mean knowledge score of 10.57 (standard deviation: 1.5, Range: 0-12). Also, results display highly significant relationships between overall knowledge and demographic characteristics ($P < 0.001$).

Conclusion: Most well-educated Iraqi residents, particularly males, are knowledgeable about COVID-19. However, this result should be generalized with caution due to limited sample representativeness.

Keywords: *COVID-19, Coronavirus disease, Knowledge, Control, Iraq.*

Introduction

COVID-19 was reported for the first time in Wuhan, China, in December 2019 as unknown cause pneumonia cases in a cluster of individuals [(1)]. On 11th of March 2020, the World Health Organization (WHO) declared Covid-19 a pandemic [(2)] and by June 30th 2020, there were 10,185,374 confirmed cases and 503,862 reported deaths internationally [(3)]. Therefore, an organized universal reaction is needed urgently to help in preparation of health systems to encounter this exceptional challenge. Even though the measures of containment applied in China have lowered new incidents by over than 90%, the situation is different in other countries (ex: Italy and Iran) [(4)]

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Studies identified various risky groups, infection appears to be more severe in older adults, obese people, and individuals with previous medical conditions. However, severity of infections during pregnancy have not been reported, and a small number of incidents have been reported in children [(5)]. Majority of COVID-19 patients have exhibited mild manifestations including sore throat, fever, and dry cough. Most of cases have cured spontaneously. Still, some have showed multiple deadly complications such as septic shock, pulmonary edema, severe pneumonia, organ failure, and Acute Respiratory Distress Syndrome (ARDS) [(6)]

Multiple actions can be taken to contain an emergent infection such as COVID-19. Globally, the previous months has seen an increasing countries number that declare precautions on travel or complete entry prohibitions on individuals from certain affected areas. These restrictions of mobility can be evaluated to confirm their potential efficiency in hindering local

epidemics [7]. Furthermore, it may give an idea how and when to stop such restrictions [8]

In Iraq, various exceptional actions have been taken in order to delay the spread of COVID-19, including schools and universities closure, mass transportation prohibition, public spaces lock up, prevention of Human gatherings, and separation and care for people with infection and suspected individuals. In March 17, government had declared complete curfew, and started Awareness campaigns for people to stay at home and avoid unnecessary contact with each other.

Covid-19 pandemic course is highly impacted by the way individuals behave, and that is affected by what their knowledge and beliefs about this disease [9]. Misinformed people in regard to COVID-19 spread (especially through social media) needs an urgent and serious handling, and that's why WHO has established "myth busters" page on their website [10]

The world still continuing to fight against COVID-19 to ensure the ultimate victory, and the commitment and adherence of population to the measures of control are indispensable. previous experience with the 2003 SARS outbreak recommend that fright sensation among the individuals from infectious diseases will have negative effects toward knowledge and attitudes, and this have further confuse efforts to control the infestation of the disease [11,12]. This needs quick population's assessments of knowledge about COVID-19 [13]. In this study, authors aimed to investigate the knowledge about COVID-19 of Iraqi citizens in Thi-Qar governorate and to Identify any significant relationship between certain demographic characteristics with the overall knowledge.

Methods

Design, sitting, and sample

Cross-sectional study was conducted from 10 to 22 of April in Thi-Qar governorate, and because of this special circumstances, population-based assessment was not feasible. So, authors collected the data online using random sampling technique. Goggle form was prepared and the Uniform Resource Locator (URL) was distributed through social media platforms (i.e. Facebook, WhatsApp, WeChat, Twitter) counting on the authors' connections with local citizens living in Thi-Qar governorate. Also, recruitment poster was posted on official accounts of Thi-Qar health directorate on previously mentioned platforms, with brief information about importance, aims, measures, voluntary contribution with anonymity, and notes about how to fill the questionnaire. Contributors have to choose yes or no options to approve their readiness for voluntary participation. Individuals of Iraqi nationality who aged 15 years or more were directed to answer the questionnaire.

Instruments

The tool of the study (questionnaire) involved of two parts: demographics and knowledge questionnaire. Demographic characteristics involves (gender, age, educational level, and source of information about COVID-19), knowledge questionnaire was adapted from [14] with permission. The authors translated the questionnaire into Arabic following the recommended guidelines [15], internal consistency was at acceptable level (the alpha-Cronbach coefficient of the questionnaire was 0.83).

Knowledge questionnaire is consisted of 12 items: clinical manifestations (4 items) (ex: Fever, dry cough, myalgia, and fatigue are the chief clinical manifestations of COVID-19 infection), routes of transmission (3 items) (ex: Eating or contacting wild animals would cause COVID-19 infection), and control and prevention (5 items) (Isolation and treatment of people who are infected with the COVID-19 virus are effective ways to reduce the spread of the virus). True, false, and I don't know options were provided as answers. 1 point awarded to correct answer and for incorrect/I don't know answers, 0 point was awarded. Higher score indicates higher knowledge.

Statistical Analysis

The analysis of data was accomplished through the usage of statistical package for social sciences (SPSS) version 26. Frequency, percentage, mean, and standard deviation were used. Independent sample t-test and Analysis of variance (ANOVA) were used to determine differences in mean knowledge scores among groups as convenient, Multiple linear regression was conducted to identify demographic factors association with overall knowledge.

Results

Demographic Characteristics

Study involved the contribution of 5280 participant. majority of study sample were males (65.8%) with (55%) of 15-29 age group. (41.9%) of participant have bachelor degree, and (45.6%) were depending on social media as a source for information about COVID-19. Other demographics are showed in (Table 1).

Knowledge Score

The correct answers rate was (88.1%), sub-domains show different rates as follow: clinical manifestations (86.6%), routes of transmission (82.5%), and control and prevention (92.7%). Item 10 was the highest correct answered item (98.3%) while item 6 was the lowest with (74.1%), other individual rates of correct answers as shown in Table 2. The mean knowledge score about COVID-19 was 10.57 (standard deviation: 1.5, Range: 0-12).

Table (3) Predictors of significance to participant knowledge in this study were age, gender, educational level, and source of information about COVID-19. Age was the factor of highest effect on overall knowledge (β = .234; p <.001), followed by gender (β = -.202; p <.001), educational level (β = .131; p <.001), and source of information about COVID (β = .105; p <.001).

Table (1) knowledge score by socio-demographic variables of participants (N = 5280)

Variable		Number of participants (%)	Knowledge score M (SD)	t/F	P
Age	15-29 years	2904 (55)	11.07 (1.58)	7.513	<0.001
	30-49 years	2211 (41.9)	10.44 (1.07)		
	50 years and above	165 (3.1)	10.19 (1.69)		
Gender	Male	3475 (65.8)	10.11 (1.92)	4.787	<0.001
	Female	1805 (34.2)	11.02 (1.54)		
Educational level	Secondary school and below	936 (17.7)	9.48 (1.19)	20.821	0.013
	Associate degree	1132 (21.4)	10.28 (1.70)		
	Bachelor degree	2210 (41.9)	11.12 (0.94)		
	Master degree and above	1002 (19)	11.37 (1.01)		
Source of information about COVID-19	Social media	2409 (45.6)	9.56 (1.71)	9.525	<0.001
	Official governmental and health sources	2211 (41.9)	11.62 (1.15)		
	Television	627 (11.9)	11.38 (1.14)		
	Family and friends	33 (0.6)	9.72 (1.58)		

Table (2) COVID-19 knowledge questionnaire

Items	Percentage of correct answers
1. Fever, dry cough, myalgia, and fatigue are the chief clinical manifestations of COVID-19 infection	93.8
2. Unlike the common cold, runny nose, stuffy nose, and sneezing are less common in individuals infected with the COVID-19 virus.	83.3
3. There is no effective cure for COVID-19 currently, but initial supportive and symptomatic treatment can assist majority of patients to recover from the infection	89.4
4. Not all cases of COVID-19 will progress to severe cases. usually old age people, who have chronic diseases, and who are obese are more expected to develop severe cases	79.8
5. Eating or contacting wild animals would cause COVID-19 infection	78.2
6. When fever disappears, individuals with COVID-19 cannot transmit the virus to others	74.1
7. COVID-19 virus spreads through respiratory droplets of infected individuals.	95.2
8. Residents can use general medical masks to avoid infection with COVID-19	82.5
9. children and young adults are not required to take actions to avoid infection by COVID-19 virus	90.4
10. Individuals should avoid going to overcrowded places such as train stations and stop taking public transportations to prevent the infection by COVID-19	98.3
11. Isolation and treatment of people who are infected with the COVID-19 virus are effective ways to reduce the spread of the virus	95.4
12. People who have contact with someone infected with the COVID-19 virus should be immediately isolated in a proper place. In general, the observation period is 14 days	97.1

Table (3) Relationship between total knowledge and demographic characteristic

Independent variables	B	SE	β	t	P
(Constant)	.779	.008		93.950	<0.001
Gender	-.053	.003	-.202	-15.594	<0.001
Age	.055	.004	.234	14.437	<0.001
Educational level	.036	.003	.131	5.946	<0.001
Source of information about COVID-19	.020	.002	.105	8.091	<0.001

B= unstandardized coefficients, SE= Standard error of B, β= standardized coefficients, t: t-test.

Discussion

Rapid and unpredictable spread of COVID-19 disease made it the most international pressing health issue currently with a close follow up from the concerned authorities. Also, this disease has become a cross topic for the public with a lot of inaccurate material from variety of sources, and that reflect the importance of taking the reliable information and apply it in our daily actions. Hence, good base of knowledge will help in the eradication efforts and in spreading of healthy behavior among the population.

As far as the author know, this is the first study to assess the knowledge of residents about COVID-19 in Iraq. The findings exhibit average correct rate of 88.1% in the questionnaire compared to studies from America and China which show approximate rates of 80% and 90% respectively [14,16]. Our results reflect that majority of sample have a good level of knowledge. This may be related to the fact that majority of sample was well-educated and have the proper awareness to look for accurate information from its official sources and this assumption is supported by the significant positive association between knowledge scores on COVID-19 and educational level. Also, this study was conducted after approximately 1 month of pandemic declaration by WHO and a significant amount of information were published to the public during this period.

From the beginning of this crises, Iraqi authorities started awareness campaigns through all media platforms to ensure that individuals commit to international guidelines on COVID-19. However, not all of the community is expected to percept these instructions equally and some of the underprivileged groups such as emigrants, poor people, and residents of rural areas may even not have the means to reach for such information. Therefore, knowledge about COVID-19 in such vulnerable groups needs superior attention by both authorities and researchers. Factors such as poor socioeconomic status and low educational levels may be a determinants of knowledge levels [17]. Specific educational programs can be tailored to target specific populations and may be of a huge benefit in increasing knowledge levels.

Individuals who depend on social media and on family and friends as a source of information have the lower knowledge score (9.04 and 9.10 respectively) in comparison to those who takes information from official sources (11.10) and television (10.96). This result emphasize on the importance to investigate the accuracy of information on COVID-19, responsible health authorities and relevant studies advised that wide-spreading unsupported information about COVID-19 is a significant issue that may cause xenophobia internationally [18,19]

Other findings show significant association between demographic variables and overall level of knowledge. Age was the factor of highest effect on overall knowledge, followed by gender, educational level, and source of information about COVID. This result is reinforced by multiple studies that have disclosed that older, females, and higher educated respondents are more knowledgeable about emerging communicable diseases [14,20,21;22]. However, even with the large sample in this study which may be considered as a favorable point, sample was more demonstrative of male and well-educated participants. So, the results may be generalized with caution.

Multiple limitation was encountered during this study, one of them is that due to limited internet access and low socioeconomic status, some groups were less representative in the study sample as mentioned above. Also, study was limited to one governorate in Iraq and that is another reason why findings are not fully representative. Another one concerning that the data presented in this study depends on participants recall of information which may be subjected to bias.

Conclusion/Recommendation

Most well-educated Iraqi residents, particularly males, are knowledgeable about COVID-19. However, this result should be generalized with caution due to limited sample representativeness. Authors recommend that wider and more representative sample should be studied to get more applicable results.

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Ethical Permissions

Ethical Board of Thi-Qar health directorate permitted the study plan and procedures [Reference no: 33/3588 in 23/4/2020]. Informed consent was introduced before the official questionnaire were offered. Contributors have to choose yes or no options to approve their readiness for voluntary participation.

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