
RESEARCH PAPER

Knowledge, attitude and practices regarding COVID-19 outbreak among people in Basrah city

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Abstract

Background: The World Health Organization (WHO) declared COVID-19 an international public health emergency on January 30th and demanded coordinated action from all countries to contain its rapid spread, and a pandemic on March 11th due to its continued spread across countries and continents. During a pandemic, the information gap can have negative consequences by increasing stress and instability. Furthermore, unfavorable attitudes and practices, as well as other misconceptions and beliefs, can intensify the disaster's devastating effects.

Aims: 1. To determine the knowledge, attitude and practices of people in Basrah about COVID-19 pandemic. 2. To know the main source of peoples' information.

Method: This study is a cross-sectional study conducted on a sample of persons selected throughout the period from 25th April to 1st August 2021. The study involved 402 individuals who attended primary health care centers in Basrah city center.

Results: In this study, 25.6% of the participants aged 30-39 years and 34.6% of them had secondary school education, 51.7% were females. Majority of the study sample (71.6%) were married. More than half (62.4%) showed self or family history of COVID-19. Half of the participants in this study had moderate level of knowledge, social media was the source of information for 54.2% of the participants, 67.4% of the participants didn't know the correct symptoms of COVID-19 disease, and also 82% didn't know the incubation period, while 90.8% know the mode of transmission. Highest percentage (40.5%) had poor attitude, and 59% had poor practice level.

Conclusions: The highest percentage of the participants had moderate knowledge, poor attitude and poor practices. Social media is the main source of information about COVID-19 among the studied sample.

Recommendation: This study recommends enhancing awareness of people about the importance of control and preventive measures against COVID-19 virus in decreasing the prevalence of the disease.

Keywords: COVID-19, Basrah, knowledge, attitude, practices

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Introduction

The world has seen severe changes in the fatal virus's unprecedented development, specifically Novel Coronavirus (nCOVID-19). Since the report of the first cluster of

Coronavirus infections on 31st December 2019 in Wuhan, a metropolitan metropolis of China, it has showed a rapid spread over a short period.¹ The World Health Organization (WHO) declared COVID-19 as an international public health emergency on January 30th and demanded coordinated action from all countries to contain its rapid spread, and a pandemic on March 11th due to its continued spread across countries and continents.^{2,3} Low pathogenicity and high transmissibility are two alarming

characteristics of this virus, which have resulted in an extremely high prevalence and mortality when compared to its predecessors.⁴ The disease causes respiratory disease (similar to the flu) with key clinical symptoms such as a dry cough, fever, and, in more severe cases, breathing problems. COVID19 is a highly contagious disease with a high fatality rate that has been classed as a class B disease and managed as a class A infectious disease in China in January 2020. SARS-COV-2 spread from person to person through inhalation of infected person's aerosols.^{3,5} It also spread directly from person to person when a COVID-19 case coughs or exhales, causing droplets to enter another person's nose, mouth, or eyes. Other people contract the virus by handling fomites and then touching their faces,⁶ Patients with pre-existing illnesses (such as hypertension, cardiomyopathy, lung disease, cancer, or diabetes) have been identified as possible risk factors for severe disease and mortality.^{7,8} The WHO upgraded the COVID-19 emergency from a public health international emergency (30 January 2020) to a pandemic on March 11, 2020.⁹ Social media is a primary source of disseminating various fallacies about disease prevention and resistance.¹⁰ Previous epidemics, such as MERS and SARS, have shown that evaluation of knowledge, attitudes, and practices aids in the identification of myths, taboos, and disinformation about the epidemic, as well as the development of effective methods to minimize its negative consequences.¹⁰

The study aims to determine the knowledge, attitude and practices of people in Basrah about COVID-19 pandemic and to know the main source of peoples' information.

Methodology

This study is a cross-sectional study conducted in the city center of Basrah governorate, in the south of Iraq during the period from 25th of April to the 1st of August 2021 on a sample of 402 adults attended the six randomly selected primary health care centers during the study period. Verbal agreement to contribute in the

study was acquired for each participant. Information were obtained by interviewing the participants, a directly-administered questionnaire specially designed for the study purpose was used, the questionnaire had been constructed after verifying various similar previous studies. To measure the knowledge of each participant, we assigned a true response for each question in the questionnaire as correct, and false answers as incorrect ones. For questions with multiple choices, answers of participants who assigned half or more than half of the correct choices were considered correct, while those who assigned less than half of the correct choices were considered incorrect. The same was carried out regarding attitude and practices. People who scored 75% or more in the area of the knowledge assessment section are considered with good knowledge about Covid-19. Those with a score of 50-75%, and those score less than 50%, are those with moderate and poor knowledge respectively, the same is applied for attitude and practices. Data of the studied sample were entered, managed and analyzed using the statistical package for social sciences (SPSS) version 26.

Results

In this study the highest percent (25.6%) of the sample aged between 30-39, and only 1% of them aged 70 years and more, people who had secondary school education showed the highest percentage (34.6%) and only 12.2% of them had university and postgraduate education, 48.3% of the sample were males and 51.7% were females. Majority of the study participants (71.6%) were married, and only 2.7% were divorced, 40.8% had 1-4 children and 27.9% had no children. This study showed that 60.45% had average monthly income and 3.7% had very good income. The highest percent (41.8%) were governmental employees. (Table-1)

Table 1. Socio-demographic characteristics

Age	Frequency	Percent
<20	20	5.0
20-29	75	18.7
30-39	103	25.6
40-49	90	22.4
50-59	79	19.7
60-69	31	7.7
≥70	4	1.0
Total	402	100.0
<i>Education</i>		
Illiterate/just read and write	70	17.4
Primary	79	19.7
Intermediate	65	16.2
Secondary	139	34.6
University & post graduate	49	12.2
Total	402	100.0
<i>Gender</i>		
Male	194	48.3
Female	208	51.7
Total	402	100.0
<i>Marital status</i>		
Married	288	71.6
Single	90	22.4
Divorced	11	2.7
Widowed	13	3.2
Total	402	100.0
<i>Number of children</i>		
0	112	27.9
1-4	164	40.8
More than 4	126	31.3
Total	402	100.0
<i>Monthly income</i>		
Bad	32	8.0
Average	243	60.4
Good	112	27.9
Very good	15	3.7
Total	402	100.0
<i>Occupation</i>		
Governmental Employee	168	41.8
Self-employed	114	28.4
Student	26	6.5
Housewife	94	23.4
Total	402	100.0

Personal and/or family history of COVID-19 disease

Participants answers to the question (Have you or any of your family members infected with Corona virus?) is shown below (table-2). Approximately 40% of the study sample had history of COVID-19 disease and 44% of them reported positive family history of the disease.

Table 2. Personal / family history of COVID-19 disease

Personal/family history of COVID-19 disease	Frequency	Percent
Yes, I am	73	18.2
Me and another member/s of the family	87	21.6
Yes, a member of the family	91	22.6
No	151	37.6
Total	402	100.0

Levels of knowledge, attitude and practices of the participants about covid-19

Half of the participants in this study had moderate level of knowledge (table-3), the social media was the source of information for more than half of the participants (54.2%), followed by family and friends (30.8%), TV. And radio (33.3%) and finally lectures and conferences (7.7%) (table-4). Highest percentage (40.5%) had poor attitude, and (59%) had poor practice level. (Table-3)

Table 3. Levels of knowledge, attitude and practices about COVID-19

A. knowledge level	Frequency	Percent
Good	112	27.9
Moderate	201	50.0
Poor	89	22.1
Total	402	100.0
B. Attitude level	Frequency	Percent
Good	91	22.7
Moderate	148	36.8
Poor	163	40.5
Total	402	100.0
C. Practice level	Frequency	Percent
Good	39	9.7
Moderate	126	31.3
Poor	237	59
Total	402	100.0

Table 4. Sources of information about COVID-19

Source of information	Frequency	Percent
Social media	218	54.2
Family and friends	124	30.8
TV. And radio	134	33.3
Lectures and conferences	31	7.7

Answers of the participants about the knowledge, attitude and practice questions

All the participants knew name of the epidemic, 81.8% of them classified it as a viral one, and 77.6% identify it as an infectious one, while 22.4% thought that COVID-19 is a political conspiracy or an issue between countries, 67.4% were not able to determine at least half of the disease correct symptoms, and also 82% didn't know the correct incubation period, 90.8% know the disease mode of transmission,

62.9% of them believed that hot weather can kill or weaken the virus, 79.6% knew that old people and those with chronic diseases are more liable for severe disease. Fifty-seven percent said that children can be infected and 65.4% knew that they are capable of transmitting the virus, 63.2% said that alcohol sterilizers can kill the virus, 72.1% knew that people can be infected without symptoms and 69.7% said that those without symptoms can transmit the virus, 88.4% said that a person will absolutely be infected if goes nearby a person with covid-19, and 82.1% said that people can be infected more than once, 86.1% said that the disease can be prevented, 67.7% didn't know how COVID-19 disease can be diagnosed, and 56% said that there are useful treatments against the virus, 61.7% said that people who take vaccine should continue on preventive measures and (58.7%) said that taking the vaccine would not prevent infection (table-5). More than half (57%) said that they will not attend hospitals if they had got symptoms, 58.9% prefer treatment at home, 66.7% answered that they will stay home for quarantine if they got contact with an infected person, 57.7% of them answered that they will meet persons with history of past infection. Half of the participants (50.5%) are afraid from virus transmission between people. Majority of people (84.8%) wish the situation to return normal and 56.5% of them said that they will provide help if needed, 80.1% think that they learned more from this pandemic, 73.9% followed the news about the disease in the world and in Iraq, 32.8% of them considered the situation in Iraq as mild and the situation was considered sever by approximately similar percent (31.3%), 22.9% expected that the situation will be worse while 46.5% of them said that the disease will be like seasonal flu, 42.5% of the participants said that they will not take the vaccine, the main reasons for them were fear from vaccine side effects (47.9%) or from the manufacturing country (19.2%) and 39.1% think that the vaccine is useless.(table-5)

More than half of the participants (59%) had poor practice level. Only 22.6% of the study sample practiced hand washing with soap and water by the correct way and time, 70.4% wash their hands frequently, 84.1% use the mask regularly, 91.5% of the sample discharged the mask in the trash after using it, 58% were using

sanitizers,71.4% were not sterilize surfaces frequently, 59.7% did not practice social distancing,71.1% did not avoid shaking hands and kissing when welcoming relatives and friends, 66.4% said that they will continue on preventive measures till the pandemic end. (Table-5)

Table 5. Answers of the participants about the knowledge, attitude and practice questions

A/ Knowledge Questions (1-19)	Correct Frequency (%)	Incorrect/Don't know Frequency (%)
1- For more than a year, the world has been exposed to an epidemic disease. Do you know what this disease's name is?		
Corona	402 (100.0)	0 (0.0)
2- What do you think of Corona disease, is it a viral, bacterial, toxic disease or others?		
Viral	329 (81.8)	73 (18.2)
3- What is your opinion about Corona disease?		
An infectious disease	312 (77.6)	90 (22.4)
4- Do you know the symptoms of COVID-19 disease?		
	131 (32.6)	271 (67.4)
5- Do you know when the symptoms appear after infection? Mention the incubation period		
2-14 days	72 (17.9)	330 (82.1)
6- Do you know the disease mode of transmission?		
Direct contact/respiratory droplets and contaminated surfaces	365 (90.8)	37 (9.2)
7- Who are people at risk of severe disease?		
Elderly and those with chronic diseases	320 (79.6)	82 (20.4)
8- Are children vulnerable to infection/disease?		
Yes	229 (57.0)	173 (43.0)
9- Can children transmit the infection?		
Yes	263 (65.4)	139 (43.6)
10- Do alcohol/sterilization kill/weaken the virus?		
Yes	254 (63.2)	148 (36.8)
11- Can a person get infected without symptoms?		
Yes	290 (72.1)	112 (27.9)

12- Can the infected person transmit the infection in the absence of symptoms?			
Yes	280	(69.7)	122 (30.3)
13- What are the factors that are important for transmission/ severity of infection in case of contact with an infected one?			
Immunity, duration of contact	46	(11.4)	356 (88.6)
14- Is it possible for someone to be infected more than one time?			
Yes	330	(82.1)	72 (17.9)
15- Can the infection be prevented?			
Yes	346	(86.1)	56 (13.9)
16- Do you know the main methods of diagnosis?			
CT scan and PCR	130	(32.3)	272 (67.7)
17- Is there any useful treatment against corona virus?			
Yes	177	(44.0)	225 (56.0)
18- Are wearing mask and following preventive measures necessary for a person who had been vaccinated?			
Yes	248	(61.7)	154 (38.3)
19- Can a vaccinated person be infected?			
Yes	236	(58.7)	166 (41.3)
B/ Attitude Questions (1-11)	Correct Frequency (%)		Incorrect/Don't know Frequency (%)
1- If you have symptoms of the disease will you go to the hospital?			
Yes	160	(39.8)	242 (60.2)
2- What will you do if you contact an infected person?			
Stay home for quarantine	268	(66.7)	134 (33.3)
3- Are you afraid of the transmission of the virus between people?			
No, I know how to protect myself	204	(50.2)	198 (49.8)
4- Do you wish that the epidemic ends and the return of normal life schools?			
Yes	341	(84.8)	61 (15.2)
5- Do you think that you will be more precautionary in the future for such an epidemic?			
Yes, I learned more	322	(80.1)	80 (19.9)
6- If society needs you, will you help?			
Yes, I will help	227	(56.5)	175 (43.5)
7- Do you follow the news about the progress of the virus in the countries?			
Yes	248	(61.7)	154 (38.3)
8- Are you following the news or progress of the virus in Iraq?			

Yes	297 (73.9)	105 (26.1)
9- What are your expectations about the virus in Iraq in the nearby future?		
for better	142 (35.3)	260 (64.7)
10- Do you expect that the infections will be like the seasonal flu?		
Yes	187 (46.5)	215 (53.5)
11- Will you or did you take the vaccine?		
yes I took	89 (22.1)	-
yes I will	99 (24.6)	-
		214 (53.3)
C/ Practices, Questions (1-9)	Correct No. (%)	Incorrect No. (%)
1- Way and duration of hand washing		
	91 (22.6)	311 (77.4)
2- Proper mask wearing and way of discharge		
	368 (91.5)	34 (8.5)
3- Do you wash your hands frequently?		
Yes	283 (70.4)	119 (29.6)
4- Do you use masks frequently?		
Yes	338 (84.1)	64 (15.9)
5- Do you use sanitizers?		
Yes	233 (58.0)	169 (42.0)
6- Do you sterilize surfaces?		
Yes	115 (28.6)	287 (71.4)
7- Do you keep social distancing?		
Yes	162 (40.3)	240 (59.7)
8- Do you avoid shaking hands and kissing for welcoming relatives and friends?		
Yes	116 (28.6)	286 (71.4)
9- For how long are you ready to continue in using the preventive measures?		
Till virus end	267 (66.4)	135 (33.6)

Discussion

In the near future, living with COVID-19 appears to be unavoidable. Thus, the enforcement of personal protective measures should be followed by a reduction in incident cases.¹¹ The findings of the current study demonstrated that half of the studied people had moderate knowledge. Studies, such as a research conducted in Addis Ababa, Ethiopia in 2020, indicated that 58.6 percent of the population possessed moderate knowledge.¹² A study conducted in various continents (Asia, Americas - North and South, Europe, Africa, and other - Australia and Antarctica) and another one in Nepal showed that the respondents demonstrated good knowledge constituted 93.2% and 84.25% respectively.^{10,13} A study in Mosul showed that 86% of the participants had high level of knowledge.¹⁴ The moderate level of knowledge among the participants in this study may be because most participants had secondary school education, which education could be owing to the high level of media coverage, which included all media outlets, and the influence of the pandemic on social life, which forced people to follow. The present study revealed that almost all the participants 99.5% had heard about COVID-19 or knew the name of the disease, similarly the same was reported by a study in Jordan.¹⁵ One probable explanation is that, in comparison to the traditional media sources, social media apps have grown in popularity and accessibility, hastening the distribution of information. Majority of the study sample (90.8%) knew that mode of the transmission can be by respiratory droplets or by direct contact. In a research in Pakistan, only 70.5 % of the participants agreed that the virus spreads through air droplets and touch.¹⁶ While the study in Asian developing countries showed that 93.1% were knowledgeable regarding transmission mode.¹⁷ And in Lebanon study, 61.5% of participants know the correct modes

of transmission.¹⁸ In this study around 79.6% of all the participants, correctly identified the elderly and those with comorbidities as high-risk groups for COVID-19 disease; however, only about 20.4% incorrectly identified adults, adolescents, and children as high-risk groups. Similar to a study in Lebanese population in which about 62.7% of the participants correctly identified the elderly and those with comorbidities as high-risk groups for COVID-19.¹⁸ In a study which was done in Mosul, majority of the respondents confirmed that COVID-19 disease is more dangerous in patients with chronic diseases and the elderly,¹⁴ the fatal outcomes are predicted by severity, older age, and presence of co-morbidity according to a study about the pandemic of COVID-19 in Eastern Mediterranean Region.¹⁹ In this study, the percent of accurate knowledge regarding symptoms of COVID-19 was 32.6%, which is much lower than those reported in Pakistan and Saudi Arabia in whom 93% and 98% were well-aware about COVID-19 symptoms respectively.^{18,20} And also lower than that estimated in Lebanese study which revealed that 54.7% of the participants were aware about the clinical symptoms.²¹ This study showed that only 17.9% of the study sample, knew the correct incubation period. In another study conducted by Zegarra et al., 86.2% of the participants knew the correct incubation period.²² In Asian developing countries study, 93.8% of the participants knew the correct incubation period,¹⁷ while only 15.4% of the participants knew the correct incubation period in Lebanon study.¹⁸ This study showed that the opinion of 44% of the participants was that there was no useful treatment for the disease caused by the virus but only preventive measures, in a study done in Pakistan around 79% said that there is only supportive treatment available for the virus.¹⁶ Bangladesh is a country, where only 18.3 percent of the participants thought that

COVID-19 had no treatment, while 47.3 percent thought it was a treatable disease.²³ In this study, evaluation of the information obtained from the participants to ascertain about COVID-19 disclosed substantial dependence on the social media of 54.2%, this result agreed with the results of a study conducted during this pandemic in which more information in Venezuela had been shared through social media and on the internet compared to the national radio and television broadcast media.²⁴ Another study in Asian developing countries (China, India, and Pakistan), suggested financial and media related difficulties as the reasons that prevent their people from obtaining accurate information.¹⁷ The World Health Organization defined the present situation of excessive correct and incorrect information about the COVID-19 pandemic posted on social media as an infodemic.²⁵ Social media platforms provide direct access, they may amplify rumors and present problematic information depending on users' interests and attitudes assessed by algorithms to mediate and encourage content promotion, but they may also amplify rumors and present questionable information.²⁶ By the present study, 40.5% of the participants had poor attitude toward COVID-19. Findings of this study showed that more than half of the participants (57%) stated they would go to a health facility if they had symptoms in contrast to a study in Iran in which 75% of the sample stated they would go to a health facility if they had a fever.²⁷ This study showed that 61.7% of the participants were following news about the virus progression in another countries, and 73.9% of the participants were following news about the virus progression in Iraq. According to a study in China, 97.1 percent of the participants monitored COVID-19 closely.²⁸ This study showed that 35.1% of the studied sample said the situation will be for better, while in Pakistan despite the less faith in government 67.3% were optimistic that

COVID-19 would be successfully controlled,²⁹ this is relatively low as compared to that in China and Malaysia. A study in china 2020, showed that 90.8% of the participants believed that COVID-19 will finally be successfully controlled.^{30,31} A study in Sudan showed that 99.1% of the participants agreed that COVID-19 will finally be successfully controlled.³² This study shows that 59% of the participants had poor practices. Level of practice was good for both of the Malaysian population and Chinese residents.^{30,31} The majority of Venezuelans self-reported that they were following recommended practices.³³ A study in Sudanese population revealed that only 48.5% had a good practice toward the COVID-19.³² The present study found that 84.1% of the participants were wearing mask when going outside and 70.4% were washing their hands frequently and 40.3% avoid crowded places. This is in stark contrast to a recent study of Chinese citizens, in which nearly all (98.0%) of study population reported using masks while leaving their houses and nearly all (96.4%) avoided busy venues and wore masks when leaving the house 98.0%.³⁰ In Saudi Arabia 2020, 94% avoided crowded locations, and 88% avoided shaking hands.³⁴ In Jordan precautionary measures such as hand washing was practiced by 87.0% and only 9.7% wear a face mask often.³⁵ In the Sudanese research 2020, 49.2 percent of the participants said they had not visited any crowded area recently,³² while in India 2020, more than 95% of the participants had avoided crowded places recently.³⁶ These variations could be attributed to the disparities in state-enforced rules, cultural experience with previous pandemics, and the two subpopulations' educational levels. In conclusion, the highest percentage of the participants had moderate Knowledge, poor attitude, and poor practice. Social media is the main source of information about COVID-19 among the studied sample. This study recommended enhancing awareness of people

about the importance of control and preventive measures against Covid-19 virus to help in decreasing prevalence of the disease.

References

1. Schwartz J, King CC, Yen MY. Protecting healthcare workers during the coronavirus disease 2019 (COVID-19) outbreak: lessons from Taiwan's severe acute respiratory syndrome response. *Clinical Infectious Diseases*. 2020 Jul 28; 71(15): 858-860.
2. World Health Organization. The 2019-nCoV outbreak is an emergency of international concern. 2020.
3. Wang J, Du G. COVID-19 may transmit through aerosol. *Irish Journal of Medical Science (1971-)*. 2020 Nov;189(4):1143-4.
4. Jiang S, Shi Z, Shu Y, Song J, Gao GF, Tan W, Guo D. A distinct name is needed for the new coronavirus. *The Lancet*. 2020 Mar 21; 395(10228): 949.
5. Li Q, Guan X, Wu P, Wang X, Zhou L, Tong Y, Ren R, Leung KS, Lau EH, Wong JY, Xing X. Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. *New England journal of medicine*. 2020 Jan 29.
6. To KK, Tsang OT, Yip CC, Chan KH, Wu TC, Chan JM, Leung WS, Chik TS, Choi CY, Kandamby DH, Lung DC. Consistent detection of 2019 novel coronavirus in saliva. *Clinical Infectious Diseases*. 2020 Jul 28; 71(15): 841-843.
7. Shi H, Han X, Jiang N, Cao Y, Alwalid O, Gu J, Fan Y, Zheng C. Radiological findings from 81 patients with COVID-19 pneumonia in Wuhan, China: a descriptive study. *The Lancet infectious diseases*. 2020 Apr 1; 20(4): 425-434.
8. Tian S, Hu N, Lou J, Chen K, Kang X, Xiang Z, Chen H, Wang D, Liu N, Liu D, Chen G. Characteristics of COVID-19 infection in Beijing. *Journal of infection*. 2020 Apr 1; 80(4): 401-6.
9. Malik YS, Sircar S, Bhat S, Vinodhkumar OR, Tiwari R, Sah R, Rabaan AA, Rodriguez-Morales AJ, Dhama K. Emerging Coronavirus Disease (COVID-19), a pandemic public health emergency with animal linkages: Current status update. Preprints 2020.
10. Alkot M, Albouq MA, Shakuri MA, Subahi MS. Knowledge, attitude, and practice toward MERS-CoV among primary health-care workers in Makkah Al-Mukarramah: an intervention study. *Int J Med Sci Public Health*. 2016 May 1; 5(5):952-960.
11. Sayed AA. The progressive public measures of Saudi Arabia to tackle covid-19 and limit its spread. *International Journal of Environmental Research and Public Health*. 2021 Jan;18(2):783.
12. CSSE J. Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU). 2020
13. Cennimo DJ. Coronavirus disease 2019 (COVID-19) treatment & management: approach considerations, medical care, prevention. *Medscape online*. 2020.
14. Gao J, Tian Z, Yang X. Breakthrough: Chloroquine phosphate has shown apparent efficacy in treatment of COVID-19 associated pneumonia in clinical studies. *Bioscience trends*. 2020.
15. Wang M, Cao R, Zhang L, Yang X, Liu J, Xu M, Shi Z, Hu Z, Zhong W, Xiao G. Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) in vitro. *Cell research*. 2020 Mar; 30(3):269-271.
16. Chu DK, Pan Y, Cheng SM, Hui KP, Krishnan P, Liu Y, Ng DY, Wan CK, Yang P, Wang Q, Peiris M. Molecular diagnosis of a novel coronavirus (2019-nCoV) causing an outbreak of pneumonia.

- Clinical chemistry. 2020 Apr 1; 66(4):549-55
17. Kramer A, Schwebke I, Kampf G. How long do nosocomial pathogens persist on inanimate surfaces? A systematic review. *BMC infectious diseases*. 2006 Dec; 6(1):1-8.
 18. Kampf G, Todt D, Pfaender S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. *Journal of hospital infection*. 2020 Mar 1; 104(3): 246-51.
 19. Chang D, Lin M, Wei L, Xie L, Zhu G, Cruz CS, Sharma L. Epidemiologic and clinical characteristics of novel coronavirus infections involving 13 patients outside Wuhan, China. *Jama*. 2020 Mar 17; 323(11): 1092-1093.
 20. Bai Y, Yao L, Wei T, Tian F, Jin DY, Chen L, Wang M. Presumed asymptomatic carrier transmission of COVID-19. *Jama*. 2020 Apr 14; 323(14):1406-1407.
 21. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, Zhang L, Fan G, Xu J, Gu X, Cheng Z. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The lancet*. 2020 Feb 15; 395(10223): 497-506.
 22. Wang D, Hu B, Hu C, Zhu F, Liu X, Zhang J, Wang B, Xiang H, Cheng Z, Xiong Y, Zhao Y. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China. *Jama*. 2020 Mar 17; 323(11): 1061-1069.
 23. World Health Organization. Global Surveillance for human infection with novel coronavirus (2019-nCoV): interim guidance, 31 January 2020. World Health Organization; 2020.
 24. Zhou P, Yang XL, Wang XG, Hu B, Zhang L, Zhang W, Si HR, Zhu Y, Li B, Huang CL, Chen HD. A pneumonia outbreak associated with a new coronavirus of probable bat origin. *nature*. 2020 Mar; 579(7798):270-273.
 25. World Health Organization. Novel coronavirus (2019-nCoV): situation report-13 [Internet]. [updated 2020 February 2; cited 2020 Apr 15]. (access on 17 Jun 2021) Available from: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200202-sitrep-13-ncov-v3.pdf?sfvrsn=195f4010_6
 26. Hua J, Shaw R. Corona virus (Covid-19)“infodemic” and emerging issues through a data lens: The case of china. *International journal of environmental research and public health*. 2020 Jan; 17(7): 2309.
 27. Kakemam E, Ghoddoosi-Nejad D, Chegini Z, Momeni K, Salehiniya H, Hassanipour S, etc. Knowledge, attitudes, and practices among the general population during COVID-19 outbreak in iran: a national cross-sectional online survey. *Frontiers in Public Health*. 2020
 28. Xu H, Mendez MJ, Guo L, Chen Q, Zheng L, Chen P, Cao X, Liu S, Sun X, Zhang S, Qiao Y. Knowledge, awareness, and attitudes relating to the COVID-19 pandemic among different populations in central china: cross-sectional survey. *Journal of medical Internet research*. 2020; 22(10): e22628.
 29. Ladiwala ZF, Dhillon RA, Zahid I, Irfan O, Khan MS, Awan S, Khan JA. Knowledge, attitude and perception of Pakistanis towards COVID-19; a large cross-sectional survey. *BMC Public Health*. 2021 Dec; 21(1): 1-0.
 30. Zhong BL, Luo W, Li HM, Zhang QQ, Liu XG, Li WT, Li Y. Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. *International journal of biological sciences*. 2020; 16(10):1745.

31. Azlan AA, Hamzah MR, Sern TJ, Ayub SH, Mohamad E. Public knowledge, attitudes and practices towards COVID-19: A cross-sectional study in Malaysia. *Plos one*. 2020 May 21; 15(5): e0233668.
32. Sayedahmed AM, Abdalla AA, Khalid MH. Knowledge, attitude and practice regarding COVID-19 among sudanese population during the early days of the pandemic: Online cross-sectional survey. *Scientific African*. 2020 Nov 1; 10: e00652
33. Bates BR, Tami A, Carvajal A, Grijalva MJ. Knowledge, attitudes, and practices towards COVID-19 among Venezuelans during the 2020 epidemic: an online cross-sectional survey. *PloS one*. 2021 Apr 15; 16(4): e0249022.
34. Al-Hanawi MK, Angawi K, Alshareef N, Qattan A, Helmy HZ, Abudawood Y, Alqurashi M, Kattan WM, Kadasah NA, Chirwa GC, Alsharqi O. Knowledge, attitude and practice toward COVID-19 among the public in the Kingdom of Saudi Arabia: a cross-sectional study. *Frontiers in public health*. 2020 May 27; 8: 217.
35. Khasawneh AI, Humeidan AA, Alsulaiman JW, Bloukh S, Ramadan M, Al-Shatanawi TN, Awad HH, Hijazi WY, Al-Kammash KR, Obeidat N, Saleh T. Medical students and COVID-19: knowledge, attitudes, and precautionary measures. A descriptive study from Jordan. *Frontiers in public health*. 2020 May 29; 8: 253.
36. Tomar BS, Singh P, Suman S, Raj P, Nathiya D, Tripathi S, et al. Indian community's Knowledge, Attitude & Practice toward COVID-19. 2020. 10.1101/2020.05.05.20092122.

معارف وتطبيقات وسلوك المجتمع حول فيروس كورونا في البصرة

الخلفية: اعلنت منظمة الصحة العالمية ان كوفيد-19 حالة طوارئ دولية للصحة العامة في 30 يناير وطالبت باتخاذ اجراءات منسقة من جميع البلدان لاحتواء انتشاره السريع، ووباء في 11 مارس بسبب استمرار انتشاره عبر البلدان والقارات. أثناء الوباء، يمكن أن يكون لفجوة المعلومات عواقب سلبية من خلال زيادة التوتر وعدم الاستقرار. علاوة على ذلك، يمكن للمواقف والممارسات غير المواتية، فضلاً عن المفاهيم والمعتقدات الخاطئة الأخرى أن تزيد من حدة الآثار المدمرة للكارثة.

الأهداف: 1. تحديد معرفة ومواقف وممارسات الناس في البصرة حول جائحة كوفيد-19.

2. معرفة المصدر الرئيسي لمعلومات العينة المدروسة حول كوفيد-19.

الطريقة: هذه الدراسة عبارة عن دراسة مقطعية أجريت على عينة من الأشخاص المختارين طوال الفترة من 25 أبريل إلى 1 أغسطس 2021

اشتملت الدراسة على 402 فرداً حضروا إلى مراكز الرعاية الصحية الأولية في مركز مدينة البصرة.

النتائج: في هذه الدراسة 25,6٪ من المشاركين في الفئة العمرية 30-39 سنة و 34,6٪ منهم حصلوا على تعليم ثانوي و 51,7٪ كانوا إناث. غالبية أفراد عينة

الدراسة (71,6٪) كانوا متزوجين. أظهر أكثر من النصف (62,4٪) تاريخاً شخصياً أو عائلياً لكوفيد-19

كان لدى نصف المشاركين في هذه الدراسة مستوى معتدل من المعرفة، كانت وسائل التواصل الاجتماعي مصدر معلومات لـ 54,2٪ من المشاركين، 67,4٪ من

المشاركين لم يعرفوا الأعراض الصحيحة للفيروس، وكذلك 82٪ لم يعرفوا فترة الحضانة، بينما 90,8٪ يعرفون طريقة الإرسال، أعلى نسبة (40,5٪) لديها

موقف ضعيف، و 59٪ لديها مستوى ممارسة ضعيف.

الاستنتاجات: كانت أعلى نسبة من المشاركين لديهم معرفة معتدلة ومواقف ضعيفة وممارسات سيئة. وسائل التواصل الاجتماعي هي المصدر الرئيسي للمعلومات

حول كوفيد-19 بين العينة المدروسة.

التوصيات: توصي هذه الدراسة بتعزيز وعي الناس بأهمية تدابير المكافحة والوقاية ضد فيروس كوفيد-19 في تقليل انتشار المرض.

الكلمات المفتاحية: كوفيد-19، البصرة، معرفة، توجهات، ممارسات