

# Knowledge, Attitudes and Practices towards Coronavirus Disease 2019 (COVID-19) among the Public in Baghdad City

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## Abstract

**Background:** Coronavirus disease (COVID-19) is a contagious disease caused by a newly discovered coronavirus. Coronaviruses transmits through personal contact and infection severity ranges from mild to severe one. **Methods:** Descriptive cross-sectional design study to assess Knowledge, Attitudes and Practices towards Coronavirus Disease 2019 (COVID-19) Among the Public in Baghdad city. The study started from 10<sup>th</sup> April until 15<sup>th</sup> August 2020 during pandemic of COVID19 in order to complete the study The data collection has been achieved by internet (online) through Google forms. **Results:** the finding of the study demonstrated moderate level for knowledge, moderate level for attitudes, and high practice level of study participants related to Coronavirus Disease 2019 in addition knowledge and attitudes variables have significant impact upon practices of the study participants. **Conclusions:** the study has concluded that practices of population were influenced by age, living place, educational level, living place and presence of COVID19 cases in residence area finally knowledge and attitudes of community has impact on practices regarding COVID19.

**Keywords:** Knowledge, Attitudes, Practices, COVID-19, Baghdad city

## Introduction

Coronavirus disease (COVID-19) is a contagious disease caused by a newly discovered coronavirus.<sup>(1)</sup> Many patients with pneumonia in Wuhan city were found and many causative agents were rule out like influenza and adenovirus, severe acute respiratory syndrome coronavirus (SARS-CoV), and Middle East respiratory syndrome coronavirus (MERS-CoV). After that Chinese center for disease control and prevention (China CDC) notified World Health Organization (WHO) about the situation. The virus was identified and named (COVID-19) which is the new name for novel coronavirus on January 7 2020. COVID-19 is more infectious than both SARS-CoV and MERS-CoV.<sup>(2)</sup>

COVID-19 affects sinuses, nose, and throat as upper respiratory tract or lungs as lower respiratory tract.it transmit the same way in other Coronaviruses

through personal contact furthermore infection severity ranges from mild to severe one.<sup>(3)</sup> The major symptoms are low-grade fever, shortness of breath, and fatigue despite the virus can last in the human body from two days to fourteen days without any symptoms. Some risk factors should be taken in considerations that make some people more susceptible for COVID-19 infection which are cancer, diabetes mellitus type II, chronic kidney disease (CKD), chronic obstructive pulmonary disease (COPD), obesity, coronary heart disease (CAD), and heart failure (HF).<sup>(4)</sup>

The COVID-19 has fatal complications ends with death in some patients. The major causes of complications is by condition known as “cytokine release syndrome or a cytokine storm” this happens when infection attacks immune systems by triggering it leading to saturation of blood stream with cytokines as inflammatory proteins which can

damage internal organs especially kidney, lungs, and heart more importantly these complications occur as one out of six persons with COVID19.<sup>(5)</sup> The spread of COVID-19, which is affected by people's knowledge, attitudes, and practices (KAP) towards COVID19 hence to control this disease population should be educated toward prevention measures to control the situation.<sup>(6)</sup> The knowledge, attitudes and practices (KAP) is important tool to estimate that community is ready or not toward promoting behavioral changes to control the virus also KAP studies give us feedback about KAP level of community to tailor appropriate interventional programs to raise prevention and awareness level for the public.<sup>(7)</sup> the objectives of the present study to assess (KAP) of public toward Coronavirus Disease 2019 (COVID-19) in Baghdad city during pandemic of the virus and to compare KAP toward COVID19 by demographic characteristics of studied samples.

### Methodology

Descriptive cross-sectional design study to assess Knowledge, Attitudes and Practices towards Coronavirus Disease 2019 (COVID-19) Among the Public in Baghdad city. The study started from 10<sup>th</sup> April until 15<sup>th</sup> August 2020 during pandemic of COVID19 in order to complete the study. Official request and Ethical approval were taken from Deanship of the college of nursing for approval of the study and permission for data collection. The study was conducted by google form online. Convenient sample of (278) participants. Instrument of the study was questionnaire form consisted of two parts the first part consists of socio-demographic characteristics, which are (agreement of study participation, age, gender, marital status, educational level, occupation, monthly income, living place, and Have you seen or heard previously about anyone in your place infected

COVID19 ).Second part consist of eleven questions related to knowledge variable, four questions about attitudes, and six questions regarding practices which were built, based on extensive and related literature review <sup>(7-9)</sup>. Content validity of the instrument was established through a panel of six experts they were faculty members from college of nursing/university of Baghdad. The purpose of reviewing the questionnaire validate the items of questionnaire in terms of clarity, relevance, and understandability. A pilot study is conducted on a convenient sample of fifteen samples. They were excluded from original sample of the study to achieve to estimate the average time to fill the entire questionnaire, and to validate understanding of items. The data collection has been achieved by internet (online) through Google forms. The form was sent to respondent to fill it by self-reported method via social media which are Facebook channel, WhatsApp, and telegram.. Statistical Analysis was applied by statistical package for social sciences (spss version 26). Frequency, mean, and standard deviation for descriptive analysis and independent two-sample t test and analysis of Variance (ANOVA test) for inferential analysis.

### Results

The majority of the study were female who accounted for (50.4%) of the total participants. More than of one-third (44.6 %) of the study participants within age group (16-26) years old. More than half of studied samples (51.4%) were married. Preparatory graduates (33.8 %) were high percent in regard educational level of studied samples. High percent of study participants were student and their percent was (32.7 %). More than half of samples (51.4 %) had sufficient monthly income and most of samples were from Al Rasafa (55.8%).finally, nearly two thirds of study participants (72.7%) had seen COVID19 people in their living place.

**Table (1). The Descriptive Statistics For Studied Samples' Knowledge Concerning COVID19**

Items	Resp.	F	%	MS	SD	A.
The main clinical symptoms of COVID-19 are fever, fatigue, dry cough, and myalgia	Incorrect	22	7.9	0.92	0.270	H
	Correct	256	92.1			
There currently is no effective cure for COVID-2019, but early symptomatic and supportive treatment can help most patients recover from the infection	Incorrect	19	6.8	0.93	0.253	H
	Correct	259	93.2			
Only elderly and chronic disease patients will have severe stages of COVID19	Incorrect	213	76.6	0.23	0.424	L
	Correct	65	23.4			
80% of people with COVID19 will cure without treatment in the hospital	Incorrect	159	57.2	0.43	0.496	L
	Correct	119	42.8			
Asymptomatic Persons with COVID-2019 cannot infect the virus to others, due to the virus is weak	Incorrect	113	40.6	0.59	0.492	M
	Correct	165	59.4			
The COVID-19 virus spreads mainly via respiratory droplets during speaking and sneezing of infected individuals	Incorrect	15	5.4	0.95	0.226	H
	Correct	263	94.6			
children and young adults cannot be infected with the virus because they have strong immunity	Incorrect	60	21.6	0.78	0.412	H
	Correct	218	78.4			
To prevent the infection by COVID-19, individuals should avoid going to crowded places such as avoid taking public transportations	Incorrect	3	1.1	0.99	0.104	H
	Correct	275	98.9			
The clinical manifestations can occur within 1-14 days after infection the virus	Incorrect	26	9.4	0.91	0.292	H
	Correct	252	90.6			
Antibiotics are an effective treatment for COVID-19.	Incorrect	180	64.7	0.35	0.479	L
	Correct	98	35.3			
The virus can be live on plastic surfaces for 24 hours	Incorrect	247	88.8	0.11	0.315	L
	Correct	31	11.2			
Total Assessment				0.65	0.324	M

(A.): Assessment, M.s=mean of score, SD= standard deviation, MS =  $\leq 0.49$  = Low (L), MS = 0.50- 0.75 Moderate (M), MS = 0.76-1= high (H)

This table shows the total assessment of samples' knowledge concerning COVID19 was moderate with respect to their mean of score (0.65)

**Table (2) The Descriptive Statistics For Studied Samples' Attitudes Concerning COVID19**

NO.	Items	Agree		Does not agree		Not sure		MS.	SD.	Ass.
		F.	%	F.	%	F.	%			
1.	Iraq can win the battle against the COVID-19 virus successfully	108	38.8	0	0.0	169	60.8	1.78	0.977	L
2.	Compliance with the Iraqi Ministry of Health instruction and precautions will prevent the spread of COVID-19	246	88.5	0	0.0	32	11.5	2.77	0.639	H
3.	Comply with necessary precautions such as Washing hands and wearing gloves to protect myself from COVID-19.	270	97.1	0	0.0	7	2.5	2.95	0.314	H
4.	Comprehensive curfew can contribute toward prevention of COVID19 transmission and win the battle.	230	82.7	0	0.0	48	17.3	2.65	0.757	H
Total Assessment								2.53	0.519	M

MS= mean of score, SD= standard deviation, Ass. = assessment level < 2= low(L), 2-2.59 = Moderate(M), 2.6-3 = high (H)

This table showed that high percentage (60.8%) of studied sample had negative attitudes concerning item "Iraq can win the battle against the COVID-19 virus successfully", while vast majority of them (88.5%;97.1%) respectively they have (agree answer) related to following items "Compliance with the Iraqi Ministry of Health instruction and precautions will prevent the spread of COVID-19" and "Comply with

necessary precautions such as washing hands and wearing gloves to protect myself from COVID-19" in addition studied samples have positive attitudes related to "Comprehensive curfew can contribute toward prevention of COVID19 transmission and win the battle" . total assessment of studied samples regarding their attitudes was moderate .

**Table (3) The Descriptive Statistics For Studied Samples' Practices Concerning COVID19**

NO.	Items	Always		Sometimes		Never		MS.	SD.	Ass.
		F.	%	F.	%	F.	%			
1.	Washing hands frequently or disinfecting them with hand alcohol rub	215	77.3	62	22.3	1	0.4	2.77	0.430	H
2.	Avoid touch eyes, mouth, and nose with your hands	156	56.1	113	40.6	9	3.2	2.53	0.561	M
3.	Cover your mouth and nose when sneezing and coughing	233	83.8	45	16.2	0	0.0	2.84	0.369	H
4.	Avoid crowded places such as supermarkets	227	81.7	50	18.0	1	0.4	2.81	0.400	H
5.	Wear mask and gloves when you are outdoor	198	71.2	73	26.3	7	2.5	2.69	0.516	H
6.	Keep distance 1 meter from others to prevent infection.	166	59.7	105	37.8	7	2.5	2.57	0.544	M
Total Assessment								2.70	0.128	H

MS= mean of score, SD= standard deviation, Ass. = assessment level < 2= low (L), 2-2.59 = Moderate (M), 2.6-3 = high (H)

It can be seen that high percent of studied samples practice all the measures that are listed in the studied questionnaire such as washing hands and wearing

gloves and masks, this can be indicated from total assessment, which had high mean score

**Table (4) Comparison of Dependent Variables by Demographic Variables**

Dependent variables Demographic variables	Knowledge		Attitudes		Practices	
	Statistic value	P value	Statistic value	P value	Statistic value	P value
Gender	-0.972	0.332	1.111	0.267	-0.384	0.701
Age groups	2.518	0.042	1.493	0.205	2.476	0.045
Marital status	1.207	.308	0.864	0.486	2.324	0.057
Educational level	6.669	0.000	1.256	0.278	4.093	0.001
Occupation	1.834	0.093	1.399	0.215	2.096	0.054
Monthly income	8.572	0.000	0.184	0.832	1.245	0.290
Living place	-0.930	0.353	0.754	0.451	2.158	0.032
Have you seen or heard previously about anyone in your place infected COVID19	2.121	0.036	2.060	0.040	2.328	0.021

Results of this table demonstrated that there are significant differences between knowledge variable and following demographic variables which are (age groups, educational level, monthly income and Have you seen or heard previously about anyone in your place infected COVID19. Also attitudes has

significant difference only with (Have you seen or heard previously about anyone in your place infected COVID19), finally practice variable has significant differences with Age groups, Marital status, Educational level, Living place, and Have you seen or heard previously about anyone in your place infected COVID19.

**Table (5) Multiple Linear Regression Analysis for Effect of Knowledge and Attitudes on Practices toward COVID19**

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Knowledge	.251	.065	.227	3.851	0.000
Attitudes	.137	.069	.117	1.992	0.047

The results indicate that knowledge and attitudes variables have significant effects on practices of studied samples at  $p$  value  $< 0.05$ .

### Discussion

This cross-sectional study is one of the first studies regarding COVID19 in Iraq specifically in Baghdad city. Hence, the disease is infectious as it can transmit through communication between human beings especially in crowded areas. The people are to protect themselves they should be knowledgeable toward disease in terms of incubation period, transmission routes, signs and symptoms and most importantly the prevention methods, and treatment strategies. The study's findings revealed that participants had moderate level of knowledge toward COVID19 indicated by mean of score ( $0.65 \pm 0.324$ ) although vast majority of study participants were highly educated ;This Finding disagrees with results from cross-sectional study was done in china to assess knowledge, attitudes, and practices (KAP) regarding COVID19 where high mean score was found toward knowledge related to COVID19 <sup>(8)</sup>.

Study participants had high mean score regarding the main clinical symptoms of COVID-19 and they can recognize that there is no cure for COVID19 now. High educational level may induce them to be curious about COVID19 to know how disease symptoms starts and what the best cure method to be free from disease. However, the study samples have low level of knowledge toward items related to "Antibiotics are

an effective treatment for COVID-19 and the virus can be live on plastic surfaces for 24 hours". It is a reasonable some people may believe that antibiotics had powerful effect toward viruses. The belief might come from news published in social media and some malpractices of health care professional, which make people, think that antibiotic is an effective solution against the virus, So that the community should be educated about role of antibiotics during pandemic of COVID19 to avoid improper use of antibiotics that can end with unhealthy complications. Findings from cross-sectional study done in (Tanzanian residents) stated that high mean scores regarding major clinical symptoms and cure from COVID19 had been showed. <sup>(10)</sup>

COVID19 is a new virus so most people have no idea toward hours of virus life on plastic and other surfaces this is considered a new concept that should orient community during pandemic of COVID19 by health education campaign such as posters ,social media regarding duration of coronaviruses on surfaces to avoid the disease and protect them.

The results of the current study revealed low level of attitudes regarding population confidence toward Iraq to win against pandemic of COVID19. This may be due to the population in Baghdad city had negative attitudes regarding the health system in Iraq based on

their experiences with it. However, they had positive attitudes concerning precautions, and instructions that are targeted to control COVID19 pandemic. In contrast to, Outcomes from study conducted in Malaysia that reported 95.9% from study participants were confident toward winning of battle against COVID19 that can reflect positive attitudes of population toward the health system in Malaysia. (7)

The current findings demonstrated high mean score for study participants regarding practices toward COVID19. Similarly, high practice level of the study participants in Saudi Arabia to assess their KAP (9). The curfew in Baghdad city may make perception about the risk of COVID19 in people residing in Baghdad furthermore high percent of the current study were highly educated which may considered cause for high practice level rather than our study revealed knowledge and attitudes variables impact significantly on practice variable.

The present study's outcomes revealed that significant differences between educational level and knowledge and practices variables toward COVID19. These findings come in total agreement with results from study conducted in Saudi Arabia (9). It may be seen that individuals who have high educational level search information and practice instructions and precautions toward COVID19 more than individuals with low educational level. In addition, results demonstrated age groups has significant difference with knowledge and practice variables toward COVID19. This result is consistent with results from Chinese study, which reported age considered significant factor regarding knowledge of studied sample (11). The results showed that Living place has significant difference with practices of the studied samples. This may be due to there is geographical differences between territories in Baghdad concerning population crowd, services available furthermore in onset of pandemic the incidence of COVID19 was fluctuated where most cases were more in Rasafa than AlKarkh after that incidence rate become equal approximately between two sectors after that Baghdad as whole become

pandemic in most its territories .The study has some limitations which are , convenient sample may place results of the study with limited generalizability. In addition, questions of the questionnaire were built on review so maybe there are questions important lost in this questionnaire. The collection of samples of the study have been collected by online google form, this may let study participants mandatory to answer all questions even poorly understood questions due to conditions of the pandemic .

## Conclusions

The study has concluded that study participants from Baghdad city had moderate knowledge, moderate attitudes, and good practice levels toward COVID19. Factors that affect knowledge were age, educational level, and monthly income and presence of COVID19 cases in residence of population, in addition to attitudes are affected by hearing or seeing cases of COVID19. In addition, the study has concluded that practices of population were influenced by age, living place, educational level, living place and presence of COVID19 cases in residence area finally knowledge and attitudes of community has impact on practices regarding COVID19.

## Recommendations

The study recommends involving the community in health education program to raise their knowledge, attitudes, and practices toward COVID19 .also especially practicing preventive measures to prevent infection of COVID19 especially in crowded areas. Giving high attention in low socioeconomic areas and low educational level individuals in Baghdad city to increase their knowledge level toward COVID19 thereby attitudes and practices levels will raise positively.

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**Conflict of Interest:** None to declare.

**Ethical Clearance:** All experimental protocols were approved under the College of Nursing-University of Baghdad and all experiments were carried out in accordance with approved guidelines.

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