Community Preventive Measures Related to Coronavirus Disease-19 among Iraqi Population

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Abstract

BACKGROUND: Coronavirus (CoV) disease (COVID)-19 outbreak is considering as a health disaster which threatens the world right now because of its higher infectivity and unavailability of definite vaccine or treatment. The only effective strategies are a commitment to prevention and quarantine of the diseased people to decrease the transmission and spreading.

AIM: The objective of the study was to assess the preventive measures adopted by the Iraqi population to protect themselves from acquiring severe acute respiratory syndrome-CoV-2 infection in correlation with their age, sex, educational level, and occupation.

METHODS: A total of 619 volunteers were involved in this online cross-sectional study, all of them answered a semi-structured questionnaire including 14 questions regarding the preventive practices. The questionnaire was distributed into three general and mixed Facebook groups during the period from April 18 to 28. Data analyzed by SPSS version 23 using frequency tables and descriptive statistics for numerical continuous age variable, t-test, and ANOVA were used for mean differences in the preventive scores.

RESULTS: The sociodemographic features of participants were showed that 81.3% were women and 91.9% had college or higher education. The majority (75.6%) were <30 years old and 42.5% governmentally employed.

The mean preventive practice score mentioned by them was 2.60 ± 0.28 with the highest three scores was for stay away from infected and sick people, avoid crowded places, and avoid travel and commuting. A significant difference was found in the practice score according to age, gender, and occupation (p < 0.001).

CONCLUSIONS: Iraqi people mentioned that they always adhere to the health instructions related to COVID-19 prevention as suggested by the government, health workers, and organizations. Male, students, and people younger than 30 years are less frequently followed the main preventive measures.

Introduction

Coronavirus (CoV) disease (COVID-19) is a new highly contagious disease distinct from other diseases caused by CoVs, such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome. The virus is characterized by a rapid spread rate and outbreaks can grow at an exponential rate. Till now, there are no drugs or vaccines established to cure or prevent COVID-19. According to data collected from the early affected countries in the pandemic, about 40% of cases had mild disease, 40% experienced moderate disease including pneumonia, 15% of cases experienced severe disease, and only 5% of cases had a critical disease [1].

At the end of 2019, the COVID-19 first discovered in Wuhan, China, then it had spread to 200 countries so the World Health Organization (WHO) announced it as a global pandemic [2].

This virus is transmitted through saliva or nasal secretions when an infected person sneezes or coughs [3]. Most patients have symptoms such as fever with mild-to-moderate respiratory illness as sore throat, cough, and dyspnea [4]. Serious illness is more likely to develop in an older age group and those with underlying comorbidities [5].

All suspected cases should be tested and the confirmed cases must promptly and effectively have isolated with receiving appropriate management. The close contacts are rapidly identified so can be quarantined and medically monitored for the 14 days' viral incubation period, this will lead to stopping and reduce the rate of infection spread [1].

The best available way to limit the spread of the virus is the limitation of community activities among people through the application of governmental instructions [6] and the two most important nationwide social measures are social distancing and self-isolation with the lockdown [7].

Hence, the prevention of the disease is only the grand solution until discovering an effective treatment or vaccine against COVID-19 [8]. The WHO submits the most efficient preventive measures such as maintaining

physical distance (minimum 3 ft or 1 m) from other persons; cleaning of the hands immediately after contact with the respiratory tract; averting frequently touching face; regular cleaning and disinfection of environmental and other frequently touched surfaces; improve living room airflow by opening as possible as many windows and doors; and if a person develops fever, cough, and dyspnea so then must seek immediate treatment [9], [10], [11].

People's commitment to control measures is very important and necessary which is affected predominantly by their knowledge, attitude, and practice (KAP) to COVID-19 in association with KAP theory [12], [13].

In this study, we focused on investigating the extent to which Iraqi people implement and adhere to the preventive measures in correlation with their age, sex, educational level, and occupation.

Methods

This is an online cross-sectional study conducted on a convenient sample of the Iraqi population. A semi-structured questionnaire was prepared by the authors using information regarding the preventive precautions that must be done by individuals in the community announced by the WHO and mentioned by the government. Using the equation $[n = Z^2P(1–P)/d^2]$ for calculation of sample size and considering 50% of the population practicing the preventive measures against COVID-19 (as to the best of our knowledge, there is no previous study that demonstrates the practices toward COVID-19 among the Iraqi population), 95% confidence interval, 5% marginal error (d), and 15% non-response rate. The minimum number for the sample required is 443.

After the questionnaire was pretested on five people, it was spread to the population by the internet, mainly Facebook groups to be answered by them. This questionnaire consisted of introductory information about the aim of the study, sociodemographic data, and questions related to their practice in the past 2 weeks regarding COVID-19 infection. All these questions have to be answered according to the Likert scale (always, sometimes, and never/rarely).

The questionnaire was disseminated electronically for 10 days (from April 18 to 28) for three general mixed Facebook groups. The questionnaire consisted of two parts: The first part includes demographic data such as age, gender, educational level, and occupation while the second part consisted of measures taken by peoples to prevent infection with CoV.

Data were analyzed by SPSS version 23 using a frequency table for categorical variables and descriptive statistics for numerical continuous age variable. The three levels of the Likert scale were considered as ordinal numeric data and coded by 3, 2, and 1 for always, sometimes, and never, respectively, and the mean score was calculated for each item (mean score 1–1.66 explained as never or rarely, 1.67–2.33 for sometimes, and 2.34–3 for always) [14]. Both frequencies and descriptive statistics were used to explain the community responses regarding COVID-19 prevention. Differences between the mean scores of practices with sociodemographic features were performed by independent t-test and one-way ANOVA test where requested.

Ethical approval was obtained from the ethical committee of the College of Medicine at Wasit University. All participants were formally consented to voluntarily participate in the study at the beginning of the questionnaire then clicked for "continue" to complete answering questions related to the study. They also informed about keeping their data confidential.

Results

The results of this study were based on the response of 619 participants who agreed to be involved in the study. The sample mean age was 27.34 ± 6.9 years old, the younger participants were 15 years while 57 years old was considered the maximum age.

Table 1 shows the frequency distribution of the sociodemographic features of the respondents. Females represented 81.3% of the whole sample, the majority of participants (91.9%) were had college educational level or higher education with more than one-third of them (38.8%) were still students. The highest percentage of participants was from Baghdad (24%), Waist (20%), and Babylon (10%).

Table 2 shows the best five preventive measures followed by the respondent were stay away from infected and sick people, avoid crowded places, avoid travel and commuting, cover your nose and mouth when sneezing or coughing, and avoid leave home unless necessary. The lowest rank was for keep a distance of more than 6 ft from others.

The first preventive measure was stay away from infected and sick people with a mean practice score of 2.89 and SD (0.39) and about 91.9% of the sample doing this always while the last preventive measure is keep a distance of more than 6 ft from others with mean score 2.43 and SD (0.67), near half 52.8% of people in this study always keep a safe distance from others. Furthermore, the results of this study found that the mean (standard deviation) of general precautions score among all participants was equal to 2.60 (0.28).

Table 3 shows that there was a significant mean difference in the practice score according to gender, age, and occupation (p > 0.001), whereas there was no significant mean difference according to

educational attainment (p = 0.119). The highest scores of practicing preventive measures were recorded from females, participants above 30 years old, and retired people.

Table 1: Frequency distribution of sociodemographic features of the respondents

Variables	Frequency	Percentage
Gender		
Female	503	81.3
Male	116	18.7
Educational level		
Illiterate, read and write, primary	8	1.3
Intermediate and secondary	42	6.8
College or higher education	569	91.9
Occupation		
Self-employer	29	4.7
Student	240	38.8
Unemployed	83	13.4
Retired	4	0.6
Governmental employee	263	42.5
Age groups		
≤30	468	75.6
More than 30	151	24.4
Participated Iraqi provinces		
Erbil	8	1.3
Al Anbar	8	1.3
Al-Qadisiyah	15	2.4
AL-Muthana	11	1.7
Najaf	32	5.2
Babylon	62	10.0
Basra	17	2.7
Baghdad	194	24
Duhok	10	1.6
Diyala	23	3.7
Saladin	4	.6
Karbala	20	3.2
Kirkuk	15	2.4
Nineveh	28	4.5
Maysan	10	1.6
Dhi Qar	36	5.8
Wasit	126	20.3

Discussion

As COVID-19 has no approved treatment or vaccine yet [15], thus prevention is the current strategy to battle against it. This study aimed to assess the preventive measures adopted by the Iraqi population to protect themselves from acquiring SARS-CoV-2 infection.

To the best of our knowledge, this study is the first descriptive study that investigates the preventive measures toward COVID-19 among Iraqi residents. In this well-educated and predominantly females sample, it was found that the mean ± standard deviation of general precautions score was 2.60 ± 0.28, indicating that responders always followed the main precautions of health authorities. Most responders (91.9%) staying away from infected and sick people, 88% of them avoiding crowded places, and 88.4% of them avoiding travel and commuting. However, other important measures had been reported in lower frequency such as cleaning and disinfecting of frequently exposed surfaces (57.5%), get a healthy diet (55.7%), avoiding touch the eyes, nose, and mouth with unwashed hands (54.9%), keeping a distance of more than 6 feet from others (52.8%), get enough sleeping time, rest (53.8%), and a suitable amount of fluid (50.6%).

Compared with measures taken to prevent SARS-CoV-2 infection by Chinese residents [16], we found a lower frequency of wearing a mask in public (63.7% vs. 99.4%), washing hands frequently with soap and water (62.7% vs. 86.7%), and staying at home (80.9% vs. 95.7%).

The current result of lower frequency of wearing a mask in a public could be explained by different factors including norms of Iraqi society about wearing of face mask, scarcity of face masks, and other personal protective equipment in Iraq and all over the world due to increase request with the emergence of COVID-19 [17], [18]. Another online survey conducted to determine perceptions among residents in the United Kingdom (UK) and United State (US) [19] found that a total of 86.0% of the UK participants and 92.6% of

Table 2: Community preventive measures regarding COVID-19 in a sample of Iraqi populations

Variables	n (%)	Always	Some times	Never or rarely	Mean	Std. deviation	Ranks
Get a healthy diet	n	345	244	30	2.51	0.58	8
	%	55.7	39.4	4.8			
Get enough sleeping time and rest	n	333	226	60	2.44	0.66	12
	%	53.8	36.5	9.7			
Get a suitable amount of fluids	n	313	267	39	2.44	0.61	12
	%	50.6	34.1	6.3			
Avoid crowded places	n	545	51	23	2.84	0.45	2
	%	88	8.2	3.7			
Avoid travel and commuting	n	547	39	33	2.83	0.49	3
	%	88.4	6.3	5.3			
Avoid leaving home unless necessary	n	501	94	24	2.77	0.50	5
	%	80.9	15.2	3.9			
Keep a distance of more than six feet from others	n	327	229	63	2.43	0.67	13
	%	52.8	37	10.2			
Stay away from infected and sick people	n	569	32	18	2.89	0.39	1
	%	91.9	5.2	2.9			
Repeat hand washing with soap and water for 20 s	n	388	192	39	2.56	0.61	6
	%	62.7	31	6.3			
Use sterilizers containing alcohol to sterilize hands and materials	n	359	191	69	2.47	0.68	10
	%	58	30.9	11.1			
Cleaning and disinfection of frequently exposed surfaces	n	356	204	59	2.48	0.66	9
	%	57.5	33	9.5			
Avoid touching the eyes, nose, and mouth with unwashed hands	n	340	220	59	2.45	0.66	11
	%	54.9	35.5	9.5			
Wearing a mask when present with others	n	394	152	73	2.52	0.69	7
	%	63.7	24.6	11.8			
Cover your nose and mouth when sneezing or coughing	n	506	100	13	2.80	0.45	4
	%	81.7	16.2	2.1			

COVID: Coronavirus disease.

Table 3: Association between people's sociodemographic features and the practice score mean

Variables	n	Mean	Standard deviation	p-value
Gender				
Male	116	2.48	0.32	>0.001*
Female	503	2.62	0.26	
Age category				
≤30	468	2.57	0.27	>0.001*
More than 30	151	2.68	0.29	
Occupation				
Student	240	2.54	0.29	>0.001**
Self-employer	29	2.59	0.21	
Governmental employee	263	2.66	0.25	
Retired	4	2.75	0.04	
Unemployed	83	2.56	0.33	
Educational levels				
Read and write, primary	8	2.65	0.38	0.119**
Intermediate and secondary	42	2.51	0.32	
College and higher education	569	2.60	0.27	

*Independent sample t-test. **One-way ANOVA test.

the US participants adhere to three effective measures for preventing infection with SARS-CoV-2 including avoiding close contact with sick people; washing hands; and avoiding touching eyes, nose, and mouth with unwashed hands, our participants less frequently adhere to these measures although they were avoiding contact with sick people in a higher percentage (91.9%).

In this study, nearly 22% of participants did not avoid crowded places, whereas in China, only 3.6% of participants went to crowded places [20], this discrepancy in findings could be attributed to poor knowledge about the SAR-CoV-2 virus and its high infectivity, which can be easily transmitted through by respiratory droplets. This is also could be due to the difference in the control measures implemented by local governments such as public gatherings and banning. Although banning was applied in different Iraqi governorates for weeks before the time of this study, most of the people did not obey these mandates and still gathering in different places such as in markets and weddings. This indicates the need for proper knowledge about COVID-19, regarding its risk, mode of transmission, and prevention, thereby personal conviction would be responsible for adherence with main preventive measures.

Regarding age, gender, and occupation differences in the practicing of main preventive measures toward COVID-19, this study found that males, younger participants (<than 30 years), and students had a significantly a lower mean of preventive score than females, older participants (>30 years), and other occupations, respectively (p < 0.001), which is in congruence with the previous studies [16], [20]. These findings could be ascribed by younger age, and males are more likely to engage in risky behaviors as suggested by previous researchers [21], [22]. Meanwhile, the significantly lower mean score of preventive practices among students could be attributed to their younger age.

Higher educational attainment was found to be significantly associated with higher knowledge and improved practice toward COVID-19 [20]. In contrast, the present findings demonstrated a non-significant association between level of education and adherence to the preventive measures against novel CoV (p > 0.05),

current result could be justified by characteristics of the studied sample where the vast majority (91.9%) of the participants were well educated, and hence, a significant association was not determined.

The current study had some limitations. First, the sample was convenient, which is unrepresentative to the general population. Besides, the sample of this research is over a representative of higher educated, younger than 30 years' people, and females, which does not represent the demographic of the Iraqi population [23]. This limits the generalization of the results. Second, this study was not investigated the public knowledge about COVID-19 and its associated commitment with principles of prevention. This is to avoid lengthening the questionnaire which leads to boredom and reluctance to the response [24]. The strategies are investigated in this study represent the main preventive measures as recommended by health authorities, health workers, and government. Third, the participants are possibly reporting a socially suitable response, they may have answered questions with always undertaking preventive strategies as they recognize to be expected from them. However, this study questionnaire was distributed throughout different groups on Facebook, it included large sample size, from different Iraqi cities, during the early stage of the COVID-19 epidemic in Iraq. Furthermore, internet-based surveys are regarded as the most suitable method for data collection during communicable diseases like COVID-19 as it prevents disease transmission during direct surveys.

Conclusions

The results of this study demonstrated that the participants always followed the main preventive strategies toward COVID-19 as suggested by the government, health workers, and organizations. Males, students, and people younger than 30 years are less frequently followed the main preventive measures. Health education programs are recommended to improve COVID-19 knowledge and maintain a safe practice of targeted population specifically males, young, and students. As the sample is unrepresentative to the population, more studies are required to investigate the practice related to novel CoV among Iraqi residents of low educational attainment.

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