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Knowledge, attitude, and practice towards COVID-19 among students in Kirkuk Medical College, Iraq

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ABSTRACT

On March 11, 2020, the World Health Organization (WHO) designated the new coronavirus COVID-19 to be epidemic. Adherence to infection control methods is strongly affected by an individual's knowledge, attitudes, and practices (KAP). The study aimed to evaluate medical students' understanding, and attitudes toward COVID-19 at the Kirkuk Medical College in Iraq. From October 16 to October 26, 2020, a cross-sectional online study was conducted, among a sample of students in Kirkuk Medical College, one of the Iraqi governorates. A total of 214 students were included in this research, and the age varied between 20–25 years. The questionnaire was divided into demographic data, knowledge, attitudes, and practices, modified from an online questionnaire regarding COVID-19 previously used. Descriptive statistics and t-tests were conducted. Among the study sample (n=214), age ranged between 20–25 years, 72.9% were females, and 86.9% resided in urban areas. The learning questionnaire's total accuracy rate was 96.3%. 98.1% of the students know that the virus is spreading by respiratory droplets from infected individuals, 30.4% have a good attitude towards COVID-19, and 100% have good practice dodging crowded places and practicing appropriate hand hygiene. The majority of students are knowledgeable of disease transference prevention and good practices. Female gender and urban residency play a positive role in knowledge and practice in respect to COVID-19 but not in what concerns the attitude. It is recommended to continue health education programs to correct the negative attitude among students, especially those who reside in rural areas.

Keywords: *COVID-19, understanding, outlook, application, medical college, Kirkuk*

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is a condition resulting from infection with a distinct coronavirus, recently called Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2; once termed 2019-nCoV) [1]. Severe Acute Respiratory Syndrome (SARS-CoV-2) was detected in Wuhan, Hubei region, China, in

the last month of 2019. Later, in weeks, the infection spread to other parts of China and globally, involving numerous countries. The medical, scientific, and healthcare fields in China shared the gene sequence of the infective agent with other nations. On January 30, 2020, the World Health Organization (WHO) declared a worldwide emergency in public health [2]. This infection is extremely contagious, and the main clinical signs of this condition include pyrexia, a persistent cough, myalgia, exhaustion, and dyspnea. Approximately 10–20% of cases with COVID-19 advance to the more serious stage, which is characterized by significant respiratory difficulties, metabolic acidosis, coagulation dysfunction, and bleeding [3]. A person may contract the infection from infected individuals. Transmission could be through person-to-person contact by nasal or oral small droplets through coughing, exhaling, or sneezing of a patient with COVID-19. These droplets settle on surfaces and objects near the individuals. Other individuals contract the infection when they touch these infected surfaces or objects, then touch their nose, eyes, or mouth. Therefore, keeping a one-meter distance from any ill individual is required [2]. Although the RNA of SARS-CoV-2 was discovered in the blood and stools of patients, blood-borne and fecal-oral transmission routes are not significant infection sources. Infection of SARS-CoV-2 was detected in animals, but it was not determined that animals are an important transmission source [2]. The COVID-19 epidemic spread far and quickly, and by April 19, 2020, this disease affected 213 countries, causing 2,995,758 cases proven in the lab and 204,987 proved deaths since 2019 [4][5]. On an international scale, as of October 18, 2020, there were 39,596,858 proved cases of COVID-19, with 1,107,374 deaths reported by WHO [6]. In Iraq, 423,524 confirmed cases of COVID-19, with 10,198 deaths reported on October 18, 2020 [7].

MATERIAL AND METHODS

Sample and collection of data

A selection of students was subjected to a cross-sectional study in the College of Medicine, Kirkuk University, Iraq, from October 16 to October 26, 2020. A total of 214 students comprised the study sample with a mean age of 21.81 years. As it is well-known, social distancing is the most important step in preventing COVID-19. Therefore, data was collected through an online poll using the Google form system. The Google form link was allocated and transferred to students using email. Students were informed about the aim of the research, completing the questionnaire, and confidentiality at the beginning of the survey.

Questionnaire

A Malaysian research on COVID-19's knowledge, beliefs, and activities was used as the basis for the assessment [8]. The first segment of the questionnaire covered demographic data, and the second segment comprised questions to assess KAP. Demographic data include age, gender, occupation, education, and residence. The questionnaire consists of 15 questions considering knowledge, 3 for attitude, and 3 for practice. The questions about knowledge have dealt with participants' knowledge in respect to clinical symptoms, ways of transmission, preventing and controlling COVID-19. These questions were answered with "yes/no" statements, and "I do not know" statements. The appropriate answer was calculated with one point, and "no/I don't know" responses were marked as zero. Higher results demonstrate a greater understanding of COVID-19. Identical choices were given for the questions concerned with attitude, while only two choices (yes/no) were given for the questions about COVID-19 that are practice-related.

RESULTS

TABLE 1: Demographic information regarding students (n=214).

Students Characteristics	Description	Number (%)
Age	Mean Range (min-max)	21.81 5 (20–25)
Age-group	≤22 >22	164 (76.6) 50 (23.4)
Gender	Female Male	156 (72.9) 58 (27.1)
Residence	Rural Urban	28 (13.1) 186 (86.9)

214 students finished the questionnaire. In this study sample, there were 164 (76.6%) participants less than 22 years old and 50 (23.4%) above this age. Females comprised 72.9% of the study sample, while males were 27.1% (58). Twenty-eight (13.1%) students resided in rural areas, whereas 186 lived in urban areas (86.9%). These results are demonstrated in Table 1.

TABLE 2: Students' awareness of COVID-19(those who answered correctly) (n=214).

Awareness about COVID-19	Number (%)
Pyrexia, body pains, a persistent cough, and exhaustion are COVID-19's primary clinical indicators.	206 (96.3)
In contrast to common cold, runny nose, sneezing, and stuffy nose are somewhat less frequent in individuals contaminated with the COVID-19 virus.	177 (82.7)
There is currently no successful medication for COVID-19, but immediate supportive and symptomatic care may speed the healing in the majority of individuals.	210 (98.1)
Not every individual with COVID-2019 will succumb to very bad cases. Especially senior citizens and those who have chronic illnesses are likely to get serious cases.	200 (93.5)
The COVID-19 virus can be contracted by interacting with or eating wild animals.	65 (30.4)
People with COVID-19 cannot spread the virus to other individuals without a fever.	8 (3.7)
Particles from a sick person's respiratory system carry the COVID-19 virus.	210 (98.1)
COVID-19 virus is carried by air.	161 (75.2)
Face masks can be used by regular people to avoid contracting the COVID-19 virus.	201 (93.9)
Young adults and children are not required to abide by the COVID-19 virus infection prevention guidelines.	12 (5.6)
For preventing the contamination with COVID-19, People must refrain from using public transportation and staying away from busy areas.	186 (86.9)
Treating and isolating infected people who have the COVID-19 virus are an effective way to stop the infection from spreading.	193 (90.2)
People who have come into touch with someone who has the COVID-19 virus need to be quarantined right away in a convenient location. Normally, the duration of the isolation is fourteen days.	201 (93.9)
There are different degrees of COVID-19 infection.	214 (100)
Lifelong immunity can be gained by COVID-19 virus infection.	23 (10.7)
The computed mean of general Knowledge scores (Mean±SD)	0.7062±0.07639

Generally, the students have a good knowledge in respect to the symptoms of COVID-19; 206 (96.3%) of the students know the main clinical features of this disease. Two hundred (93.5%)

participants know that not all patients will develop severe symptoms. However, 23 students (10.7%) think that infection with COVID-19 will give life-long immunity. These results, and other aspects of students' knowledge, are shown in Table 2.

TABLE 3: Students' attitudes towards COVID-19 (those who answered positively by choosing agree) (n=214).

Attitude about COVID-19	**Number (%)**
There will be an effective containment of the pandemic.	14 (6.5)
Are you confident that the government will prevail in its fight against COVID-19?	29 (13.6)
Government's capacity to effectively manage the COVID-19 situation.	22 (10.3)
The computed mean of general attitude scores (Mean±SD)	0.1012±0.19549

Regarding learners' perceptions of COVID-19 infection, there were only 65 students who chose to agree towards attitude questions; 14 of them (6.5%) believe this pandemic will be controlled successfully, while 29 (13.6%) are confident that the state will prevail in the conflict with COVID-19 were 29 (13.6%). These results are displayed in Table 3.

TABLE 4: Students' practice of preventive measures (those who are practicing preventive measures by choosing yes) (n=214).

The practice of COVID-19 preventive measures	**Number (%)**
Avoid densely populated areas.	214 (100)
When leaving the house, put on a face mask.	207 (96.7)
Practice proper hand hygiene.	214 (100)
The computed mean of general practice scores (Mean±SD)	0.9891±0.05943

Regarding Table 4, an estimated 100% of students avoided crowded places and reported proper hand hygiene, and 96.7% of students wore face masks when leaving home. Computed mean scores of students' practice were 0.9891±0.05943.

TABLE 5: Student demographics differences regarding their understanding, attitude, and experience with COVID-19 (n=214).

Students' demographics	No.	Understanding	Attitude	Experience
		Mean±SD	Mean±SD	Mean±SD
Age-group				
≤22	164	0.7037±0.07576	0.0955±0.19102	0.9878±0.06277
>22	50	0.7147±0.07858	0.1200±0.21039	0.9933±0.04714
Significance*		t:0.892, P =0.374	t:0.774, P =0.440	t:0.575, P =0.566
Gender				
Female	156	0.6991±0.07741	0.1047±0.19966	0.9957±0.03762
Male	58	0.7253±0.07073	0.0920±0.18515	0.9713±0.09437
Significance *		t:2.246, P =0.026	t:0.423, P =0.673	t:2.716, P =0.007
Residence				
Rural	28	0.7548±0.06556	0.1190±0.16265	0.9643±0.10499

Urban	186	0.6989±0.07537	0.0986±0.20020	0.9928±0.04848
Significance *		t:3.713, P =0.000	t:0.516, P =0.606	t:2.396, P =0.017

* – unpaired t-test.

Table 5 shows no statistically notable change in the information, attitude, practice, and age (t:0.892, P =0.374, t:0.774, P =0.440, t:0.575, P =0.566, respectively).

Despite the fact that there is a strong statistical relationship among gender and knowledge of the students (t:2.246, P =0.026) and a highly significant relationship (t:2.716, P =0.007) between gender and practices, however, there was no statistical connection (t:0.423, P =0.673) among the attitude of students and gender.

Regarding the students' residence, there was a highly significant relationship with the knowledge (t:3.713, P =0.000) and a strong statis- tical relationship: 2.396, P =0.017 with the practices of students.

DISCUSSION

Our study observed that most of the students included have a good knowledge of COVID-19. This could be explained by the fact that the studied sample includes exclusively medical students, and the majority of them are from urban areas (86.9%). Consequently, it is expected that this community sector should have a fair degree of awareness towards the COVID-19 pandemic, together with the campaigns by the ministry of health to educate the public against this disease. Several previously published studies also showed higher rates of knowledge and participants' awareness [9],[10]. Generally, participants had a negative attitude concerning the control of the pandemic and the government's ability to handle the crisis, as only 13.6% believed that the government efforts would gain against COVID-19. Contrary to the research's results, other studies elsewhere [11],[12]. This requires more campaigns of educating the public in general to have a positive attitude towards this infection.

Our analysis found that students who reported avoiding crowded places and practicing appropriate hand hygiene were 100%, while those who wore face masks when leaving home were 96.7%. This result is in line with a research done among students in primary school in Wuhan, China claiming that appropriate personal hygienic practices like hand-washing intervention could interrupt the transmission cycle and decrease the risk of infection to 6% and 44% [13]. Another study that supports our findings performed among medical and non–medical university students found that most participants support the attitude of using face masks as one of the most important preventative measures that limit COVID-19 infection [14]. As stated by WHO, the spreading of COVID-19 infections could be mainly by direct, indirect (via contaminated objects or surfaces), or nearby contact with an infected individual through body secretions like mouth and nose [7]. So, it is important to gain a benefit from the quarantine period, to assist the public in the development of good personal hygienic practices and correct hand-washing behavior [13], especially after coughing or sneezing, after toilet use, before eating, preparing food and after touching animals or animal waste, touching objects like buttons or door handles, or even after leaving a communal area and coming home [15]. Therefore, it was essential to evaluate the community's alertness towards COVID-19 at this disturbing time, to manage the breakout in Iraq.

Regarding the use of face masks in public, WHO does not advocate healthy people wear a face mask habitually [16]. At the same time, CDC has recently endorsed wearing cloth face masks in public [17] as a result of the progression of the pandemic and published new studies' data on the asymptomatic and presymptomatic transmission of the virus [15][17][18]. Since the early days of the outbreak, there have been significant efforts to prevent transmission of the virus using all the possible ways, such as TV programs, posters, social media, workshops, and lectures. Participants' knowledge differs according to age, gender, and residence, with a high statistical difference. Our study shows good knowledge associated with female students living in urban areas. This is consistent with a similar finding in

the Kurdistan region in Iraq [18], which found that scores of knowledge of female medical students were significantly higher than others. Given the severity of this pandemic and the dire health emergency, people vigorously acquire knowledge about this infectious disease from different resources, predominantly female students.

There wasn't a real connection among attitudes towards COVID-19 and the age and gender of the participants. This agrees with a study among health workers specialists at the University of Medicine and Pharmacy in Vietnam, which established that mindsets towards COVID-19 didn't show any important correlation with age, gender, and encounter. However, the participant's profession had a consistently significant link [19]. A study among Chinese people found that sociodemographic variables related to higher good outlooks concerning COVID-19 were the age of the participants, academic education, employment status, higher monthly family income [5]. Our study found that gender and residence were distinctly connected with good approach; this agreed with a study done in Bangladesh that declared that sociodemographic factors related to regular learning approaches were female gender, older age, more academically educated, higher monthly salaries, and living in urban areas [10].

However, this research has some restrictions. First, it was carried out between medical college pupils, which would not reflect the KAP of the public, especially those who reside in rural areas. Second, our study depends on answering an online questionnaire, not a direct interview of the participants. However, the study gives an early insight into the KAP of a population sample. These results could be of great significance for general practitioners, family physicians, and other fields of medical practice.

CONCLUSION

The majority of our students have good knowledge concerning the transmission of the disease and good practice. It is recommended to continue health education programs to correct the negative attitude among students, especially those who reside in rural areas.

REFERENCES

1. F. Wu et al., "A new coronavirus associated with human respiratory disease in China," Nature, vol. 579, no. 7798, pp. 265–269, 2020.
2. K. N. A. A. Mousa, M. M. Y. Saad, and M. T. B. Abdelghafor, "Knowledge, attitudes, and practices surrounding COVID-19 among Sudan citizens during the pandemic: an online cross-sectional study," Sudan J. Med. Sci., vol. 15, no. 2, pp. 32–45, 2020.
3. S. Rugarabamu, M. Ibrahim, and A. Byanaku, "Knowledge, attitudes, and practices (KAP) towards COVID-19: A quick online cross-sectional survey among Tanzanian residents," MedRxiv, 2020.
4. N. Coronavirus, "situation reports [Internet]. Who. int. 2020 [cited 2 April 2020]." 2019.
5. B.-L. Zhong et al., "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," Int. J. Biol. Sci., vol. 16, no. 10, p. 1745, 2020.
6. null The Lancet, "Emerging understandings of 2019-nCoV," Lancet Lond. Engl., vol. 395, no. 10221, p. 311, Feb. 2020, doi: 10.1016/S0140-6736(20)30186-0.
7. "WHO Coronavirus (COVID-19) Dashboard." https://covid19.who.int (accessed Jan. 26, 2022).
8. A. Azlan, M. Hamzah, T. Sern, S. Ayub, and E. Mohamad, "Public knowledge, attitudes and practices towards COVID-19: A cross-sectional study in Malaysia.," PLoS One, vol. (5), no. 15, p. 21, May 2020, doi: 10.1371/journal.pone.0233668.
9. A. Asaad, R. El-Sokkary, M. Alzamanan, and M. El-Shafei, "Knowledge and attitudes towards Middle East respiratory sydrome-coronavirus (MERS-CoV) among health care workers in south-western Saudi Arabia.," vol. 26, no. 4, pp. 435–442, Apr. 2020, doi: 10.26719/emhj.19.079.
10. M. Z. Ferdous, M. S. Islam, M. T. Sikder, A. S. M. Mosaddek, J. A. Zegarra-Valdivia, and D. Gozal, "Knowledge, attitude, and practice regarding COVID-19 outbreak in Bangladesh: An online-based cross-sectional study," PloS One, vol. 15, no. 10, p. e0239254, 2020.
11. M. Haftom et al., "Knowledge, attitudes, and practices towards covid-19 pandemic among quarantined adults in Tigrai region, Ethiopia," Infect. Drug Resist., vol. 13, p. 3727, 2020.
12. N. S. Khalil, D. B. Al-Yuzbaki, and R. S. Tawfeeq, "COVID-19 knowledge, attitude and practice among medical undergraduate students

in Baghdad City," EurAsian J. Biosci., vol. 14, no. 2, pp. 4179–4186, 2020.
13. X. Chen, L. Ran, Q. Liu, Q. Hu, X. Du, and X. Tan, "Hand hygiene, mask-wearing behaviors and its associated factors during the COVID-19 epidemic: A cross-sectional study among primary school students in Wuhan, China," Int. J. Environ. Res. Public. Health, vol. 17, no. 8, p. 2893, 2020.
14. H. Alzoubi, N. Alnawaiseh, A. Al-Mnayyis, M. Abu-Lubad, A. Aqel, and H. Al-Shagahin, "COVID-19-knowledge, attitude and practice among medical and non-medical University Students in Jordan," J Pure Appl Microbiol, vol. 14, no. 1, pp. 17–24, 2020.
15. Y. Bai et al., "Presumed asymptomatic carrier transmission of COVID-19," Jama, vol. 323, no. 14, pp. 1406–1407, 2020.
16. S. H. Wong et al., "COVID-19 and public interest in face mask use," Am. J. Respir. Crit. Care Med., vol. 202, no. 3, pp. 453–455, 2020.
17. A. Kimball et al., "Asymptomatic and presymptomatic SARS-CoV-2 infections in residents of a long-term care skilled nursing facility—King County, Washington, March 2020," Morb. Mortal. Wkly. Rep., vol. 69, no. 13, p. 377, 2020.
18. N. R. Hussein, I. A. Naqid, K. Jacksi, and B. A. Abdi, "Assessment of knowledge, attitudes, and practices toward COVID-19 virus among university students in Kurdistan region, Iraq: Online cross-sectional study," J. Fam. Med. Prim. Care, vol. 9, no. 9, p. 4809, 2020.
19. G. Huynh, T. N. H. Nguyen, K. N. Vo, and L. A. Pham, "Knowledge and attitude toward COVID-19 among healthcare workers at District 2 Hospital, Ho Chi Minh City," Asian Pac. J. Trop. Med., vol. 13, no. 6, p. 260, 2020.