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ORIGINAL ARTICLE

COVID-19 AWARENESS IN KUWAITI HOSPITALS

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Summary

As of 14th July 2020, 12,964,809 confirmed cases of coronavirus (COVID-19) and 570,288 deaths had been reported globally. In Kuwait, the numbers stood at 55,508 confirmed cases and 393 deaths. The disease seems to be hitting hard on the country despite the measures that have been put in place. The current study sought to examine healthcare workers HCWs awareness and perceptions of coronavirus disease in Kuwait hospitals. A prospective study design was used to examine the development of the disease among 28 HCWs between mid-May and the start of June 2020. The primary findings were as follows; most of the study participants had attended lectures/ discussions on COVID-19, only few HCWs could identify the incubation period of the novel coronavirus. However, the majority could identify the most common symptoms of the disease as fever, cough, headache, sore throat, runny nose, and skin rashes. Most of the HCWs were aware that the virus transmitted through contact. A good number of the study participants also identified pneumonia, respiratory failure and death as complications associated with coronavirus disease. The study recommends running health education programs in Kuwait to promote knowledge on the coronavirus and help the HCWs develop positive attitudes and uphold important practices.

Key words: Awareness; COVID-19; Global health emergency; Healthcare workers; Knowledge; Kuwait; Novel coronavirus; Outbreak

INTRODUCTION

The outbreak of the novel coronavirus disease was declared a Public Health Emergency of International Concern by the World Health Organization (WHO) on 30th January 2020. From then till now, the disease has proven to cause extensive consequences to countries without established health systems (1). The emergency committee has

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suggested number of measures that can interrupt the spread of COVID-19. Some of these actions include quick detection, isolation, early treatment, and the enactment of a strong system to facilitate contact tracing (1-2). Other considerations may include establishing a way to determine clinical severity, ascertaining the magnitude of transmission, as well as optimizing options for treatment (1). All in all, the WHO believes that each country should focus on reducing the economic impact of the coronavirus disease and countering potential instances of misinformation (1-2).

As of 14th July 2020, WHO had reported 12,964,809 confirmed cases of COVID-19 and 570,288 deaths on the global scale (3). This is a marked increase in numbers considering that WHO reported about 4,525,497 confirmed cases and 307,395 deaths as of 17th May 2020 (4). While the situation in Europe seems to be improving, the disease seems to be hitting hard on other parts of the world. Even in nations experiencing positive signs, the biggest challenge has been dealing with "complacency." In Kuwait, reported cases were at 55,508 and 393 deaths as of 14th July 2020 (3). The disease seems to be spreading quickly considering that the figures were at 13,802 confirmed cases and 107 deaths as of 17th May 2020 (4).

In the midst of this pandemic, healthcare workers have been at the frontline in implementing response measures. As a consequence, these professionals are exposed to hazards that endanger them and subject them to the risk of infection. Apart from exposure to pathogens, healthcare workers operate for longer hours and most if not, all have reported experiencing fatigue, psychological distress, stigma, occupational burnout, together with physical and emotional violence (5). Lack of comprehensive knowledge of the disease among health care workers (HCWs) can, therefore, cause delays in medical attention and contribute to the spread of infection. It is in consideration of these possibilities that the World Health Organization created procedures for global awareness-raising and risk assessment.

A number of authors have recognized that optimizing health awareness is of priority (6-10). Recent research sought to determine the knowledge, attitude, as well as the practices of HCWs in Uganda. Data was collected through WhatsApp messenger from HCWs working at four Makerere University Teaching Hospitals. A pre-validated questionnaire was used to examine the knowledge, attitude, and practices of the study sample towards COVID-19. The authors used a bloom's cut-off of 80% to establish enough knowledge, positive attitude, and good practice. The outcome revealed that most of the study participants 69% had sufficient knowledge, 21% reported having a positive attitude, and 74% understood and implemented good practices in an effort to combat COVID-19. Key factors that contributed to knowledge were age and the news media. Age and holding a diploma also contributed to good practices among the health care workers. Based on the study findings, the researchers recommended progressive professional education among the healthcare workers in Uganda to enhance their knowledge, reduce negative attitudes, and encourage positive preventive and curative practices (6).

Similarly, Chinese paper investigated the knowledge, practices, and attitudes of healthcare workers in a cross-sectional study carried out between February 4th and February 8th, 2020. The study sample consisted of HCWs from 10 hospitals in Henan, China. Among the respondents, 89% had enough knowledge of the coronavirus, over 85% were apprehensive of possibilities of self-infection, while 89.7% of the sample adhered to the right practices recommended in the control of the coronavirus. Moreover, they noted some of the risk factors influencing the attitude and practice of HCWs as job category and work experience. The implication of these findings is that measures must be taken to safeguard health care workers from the risks associated with work experience, educational attainment, job group, and working hours (7).

Recent research has also investigated awareness, perception, and attitude of the coronavirus disease using a sample of dentists. Even though WHO has provided guidelines and recommendations for controlling COVID-19 infections, most dental practices do not have the minimum requirements needed to guarantee infection control. The authors used a study sample of dentists who worked in health centers, private clinics, and hospitals in Jordan. Responses on the dentists' awareness of the coronavirus disease were collected using online questionnaires in March 2020. The outcome of the study showed that most of the dentists understood the coronavirus disease symptoms and had knowledge on how to identify patients who were at risk. In addition, most of the study sample could correctly report the common modes of transmission and could clearly map out the measures that can be used to prevent the transmission of COVID-19 in dental clinics. Over 70% of the study sample believed that the spread

of the disease could be minimized by asking patients to maintain social distance, wash hands regularly, and wear masks while in the waiting room. In sum, the findings showed that the Jordanian dentists understood the symptoms of the coronavirus disease, its mode of transmission, and measures that can be used to control infections in dental clinics (8). However, it was also clear from the study that these health care practitioners did not have adequate knowledge on the additional precautionary measures that can protect them and the patients from the coronavirus.

Knowledge, attitudes, and practices of residents have also been tested using a Chinese sample. The authors hypothesized that people adhere to COVID-19 control measures based on their knowledge, attitudes, and practices. The research focused on the period in China when there was a quick rise of the outbreak. The sample was recruited online and requested to fill an online KAP questionnaire which had 12 questions examining the clinical features and prevention of coronavirus disease. The findings showed a strong relationship between coronavirus knowledge score and the chances of experiencing negative attitudes and engaging in preventive practices. The findings revealed that most residents of a high socioeconomic status in China, more so women, had extensive knowledge about the coronavirus. Also, this group of residents portrayed an optimistic attitude and engaged in suitable practices meant to minimize the risk of COVID-19 (9). The implication of the study is that health education programs need to be used to promote knowledge on the coronavirus and help residents develop positive attitudes and uphold suitable practices.

The knowledge, attitudes, and practices associated with the coronavirus were also examined using a public sample in Malaysia. The study authors hypothesized that the knowledge, attitudes, and practices that the public holds towards COVID-19 plays a central role in determining their preparedness to undertake behavioral change measures provided by health authorities. They attempted to prove this using an online survey delivered to 4,850 Malaysian residents between 27th March and 3rd April 2020. The survey featured 13 questions on knowledge, 3 on attitudes, and 3 on practices, and were inspired by a previous questionnaire designed to examine COVID-19. The outcome of the study showed that many participants had positive attitudes towards the effective control of coronavirus. A majority of the participants were also engaging in safety measures, such as keeping away from crowded places and engaging in appropriate hand hygiene (10). One safety precaution that was less common was the wearing of face masks. These results demonstrate the significance of providing consistent health education on the coronavirus disease in Malaysia and other parts of the world.

Due to the significance of knowledge, attitudes, and practices demonstrated in most of the recent scholarly works, the current study sought to investigate HCW's awareness of COVID-19 in Kuwait.

MATERIALS AND METHODS

The objective of the study was to investigate HCWs awareness of COVID-19 in Kuwait. Informed consent was sought from HCWs practicing in Kuwaiti hospitals. A prospective study design was used to examine the development of the coronavirus disease and the understanding of the HCWs from mid-May to the start of June 2020. A short interview consisting of 10 questions was used to collect data from the study participants. The interviews were carried out face-to-face with the study participants. The design of the interview was inspired by an earlier study that investigated the understanding and experiences of COVID-19 among health care workers in the United Arab Emirates (11). Knowledge of COVID-19 was tested using questions focusing on the incubation period, symptoms, transmission, complications, treatment, and the reduction of the risk of transmission. The obtained data was substantiated and analysed using SPSS. The study applied descriptive statistics to calculate frequencies. The chi-square test was also used to examine the level of association among the variables.

SELECTION AND DESCRIPTION OF PARTICIPANTS

HCWs, who amounted to the sample in this study consisted of pharmacists, nurses, medical officers, midwives, senior hospital officers, internship doctors and specialists. The participants were voluntarily asked to participate in the study and no compensation was involved. In sum, the study sample included a total of 28 health professionals. The study maintained the confidentiality of personal information by making the sample's information anonymous and requesting the participants to provide truthful answers.

RESULTS AND DISCUSSION

Demographic characteristics of the sample

The sample included 28 health care workers as shown in table 1. Out of that 28, 19 (67.90%) were female and 9 (32.10%) were male. The age of the participants was distributed from 18 to 54 years. A majority of the participants (82.10%) were at least age 25 or above. Further, a majority of the participants were pharmacist (57.10% of the study sample). There were also 21.40% who were nurses and 14.30% who were lab technicians. 7.20% of the sample were either medical records technicians or physicians. These results are extensively illustrated in table 1.

Table 1. Demographic characteristics of the sample

Variable		Frequency	Percent
Gender	Female	19	67.90
	Male	9	32.10
Age	18-24	5	17.90
	25-34	13	46.40
	35-44	9	32.10
	45-54	1	3.60
Profession	Lab technician	4	14.30
	Medical records technician	1	3.60
	Nurse	6	21.40
	Pharmacist	16	57.10
	Physician	1	3.60

Have you attended any of the lectures/discussions about Novel Coronavirus disease?

The study participants were asked whether they had attended any of the lectures/ discussions on the COVID-19 disease. 57% of the study participants reported having attended the COVID-19 lectures/ discussions. The study was further interested in determining whether gender, age or profession had an effect on the attendance of the lectures/ discussions. This was tested using three chi-square tests. Gender, $\chi^2 = 9.95$, $p < 0.05$, age, $\chi^2 = 12.17$, $p < 0.05$ and profession, $\chi^2 = 15.75$, $p < 0.05$ had a significant impact on the attendance. In other words, the findings mean that one's gender and profession could help determine their ability to attend lectures/ discussions on COVID-19. The outcome of the chi-square tests examining the effect of gender, age, and profession on COVID-19 lecture attendance are as shown in table 2.

Table 2. Chi-square test effect on gender, age and profession on attending COVID-19 lectures

Variable	**Chi-square value**	**Significance (p-value)**
Gender	9.94	$p < 0.05$
Age	12.16	$p < 0.05$
Profession	15.75	$p < 0.05$

According to the Chi-square tests, males were more likely to attend COVID-19 lectures, compared to females. Majority of the females (63.16%) didn't attend the lectures while all the males (100%) attended them. Figure 1 illustrates the attendance of COVID-19 lectures based on gender.

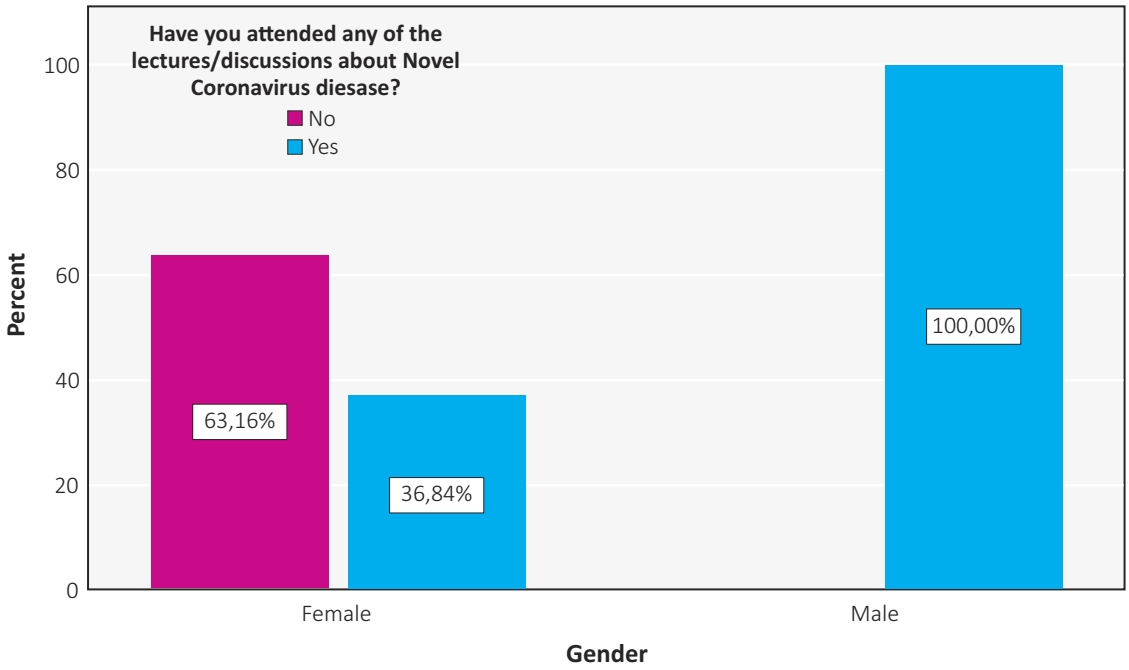

Figure 1. Attending COVID-19 lectures by gender

Further, the study tested the relationship between age and the ability of one to attend lectures. The findings showed that age had a significantly positive relationship with attending lectures. A majority of the people in the 18-24 (80%) and 25-34 (61.54%) age groups didn't attend lectures while all those at age 35 or above attended lectures. A summary of these findings is as shown in figure 2.

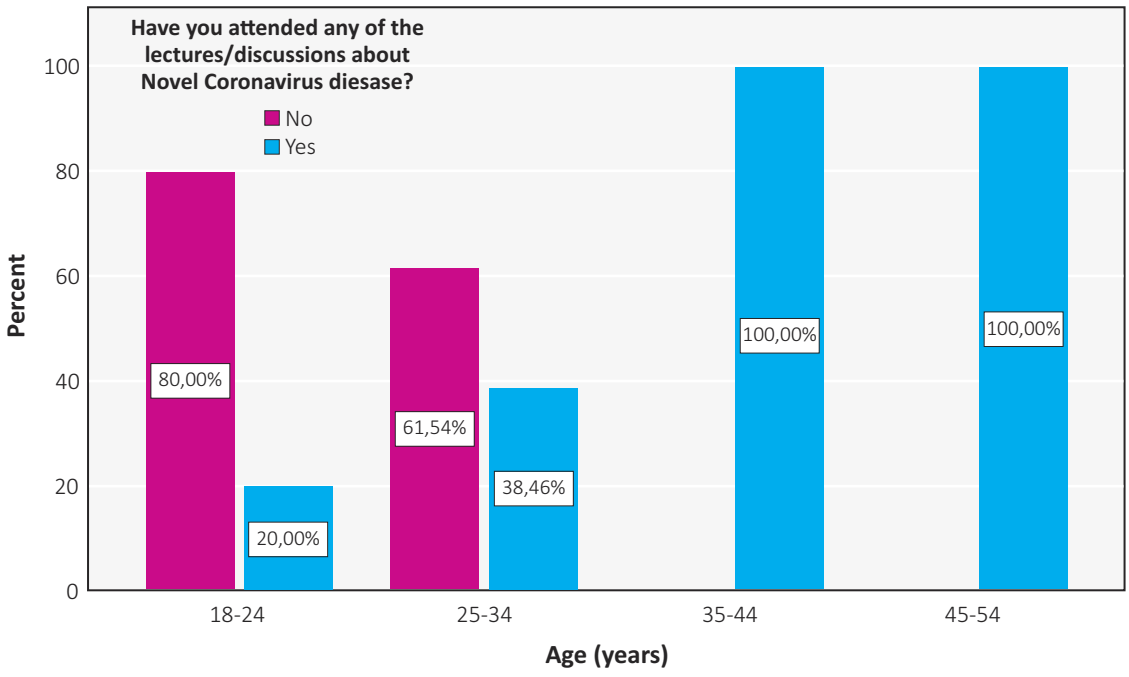

Figure 2. Attending COVID-19 lectures by age group

The findings also revealed that all the nurses, lab technician, medical records technician and physicians attended the COVID-19 lectures. However, most of the pharmacists (75%) didn't attended the lectures. Figure 3 illustrates these findings.

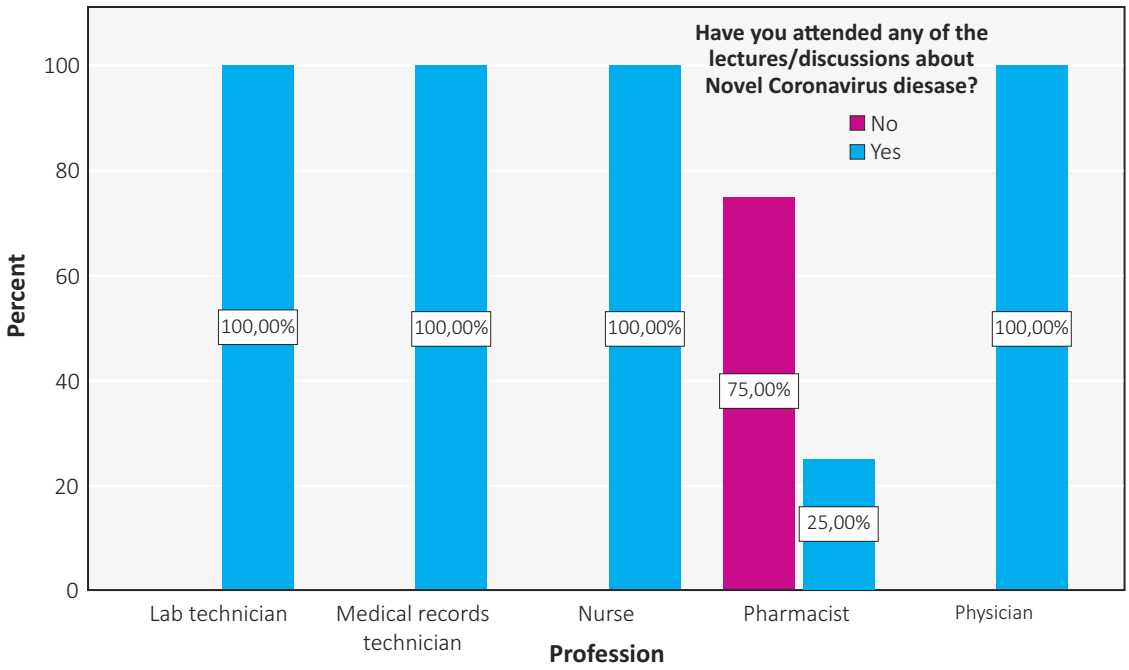

Figure 3. Attending COVID-19 lectures by profession

What is the incubation period of Novel coronavirus?

The study participants were examined on the incubation period of the coronavirus disease. Based on the study findings, only 17.90% (n = 5) could correctly identify the incubation period of COVID-19. About 35.70% of the sample identified the incubation period as 2-14 days, 35.70% suggested 7-21 days, and 10.70% did not provide any information on the incubation period. Table 3 shows a summary of these findings.

Table 3. Incubation period as identified by the participants

	Frequency	Percent
2-14 days	10	35.70
7-14 days	5	17.90
7-21 days	10	35.70
None given	3	10.70
Total	28	100.00

Using three Chi-square tests, the study sought to examine whether gender, age or profession had an effect on the ability of an individual to correctly identify the incubation period of novel Coronavirus. Gender, χ^2 =1.33, $p > 0.05$, Age, $\chi^2 = 2.32$, $p > 0.05$ and profession, $\chi^2 = .45$, $p > 0.05$ had no significant impact on an individual's ability to correctly identify the incubation period of novel coronavirus. Table 4 illustrates these findings.

Table 4. Chi-square test effect on gender, age and profession on correctly identifying incubation period of novel coronavirus

Variable	Chi-square value	Significance (p-value)
Gender	1.33	$p > 0.05$
Age	2.32	$p > 0.05$
Profession	0.45	$p > 0.05$

Symptoms of novel coronavirus

Next, the study participants were required to identify the symptoms of coronavirus disease. A majority of the participants (57.10%) were able to identify the most common symptoms of the disease correctly. However, a considerable percentage of participants were unable to identify the less common symptoms such as skin rash (n = 9, 32.10%), sore throat and runny nose (n = 3, 10.70%). Table 5 shows a detailed summary of these findings.

Table 5. Identifying symptoms of novel coronavirus

	Frequency	Percent
Identified all possible symptoms	16	57.10
Did not identify skin rash	9	32.10
Did not identify sore throat and runny nose	3	10.70
Total	28	100.00

Four Chi-Square tests were conducted to identify whether gender, age, profession, and attendance of COVID-19 lectures/ discussions had an effect on the ability to correctly identify the symptoms of coronavirus. Age, $\chi^2 = 1.421$, $p > 0.05$ and profession, $\chi^2 = 1.63$, $p > 0.05$ had no significant impact on correctly identifying symptoms of novel coronavirus. However, gender, $\chi^2 = 9.44$, $p < 0.05$ and attendance of COVID-19 lectures, $\chi^2 = 9.97$, $p < 0.05$ had a significant impact on the ability to correctly identify the symptoms of COVID-19. A detailed illustration of these findings is shown in table 6.

Table 6. Chi-square test effect on gender, age, profession and attending COVID lectures on correctly identifying the symptoms of the disease

Variable	Chi-square value	Significance (p-value)
Gender	9.44	$p < 0.05$
Age	1.42	$p > 0.05$
Profession	0.63	$p > 0.05$
Attending COVID-19 lectures	9.97	$p < 0.05$

All the male study participants were able to identify COVID-19 symptoms correctly since they attended the lectures/ discussion sessions. However, most of the females (58.33%) who failed to attend the lectures/ discussions on COVID-19 were unable to identify the symptoms of the disease correctly. On the contrary, females who attended the lectures (57.14%) managed to identify the symptoms of the disease correctly.

Novel Coronavirus transmission

The study participants were asked to provide information on how the transmission of Coronavirus happens. A large percentage of the sample (64.29%) suggested that the virus transmits through contact. 21.43% of the participants believed that the disease spread through air, contact, and Feco-oral. Additionally, 7.14% suggested that the options provided in the interview guide did not account to the transmission of the virus.

What are the complications of Novel Coronavirus?

The next question asked the study participants to identify the complications associated with the coronavirus disease. Most of the study participants identified pneumonia, respiratory failure, and death as complications associated with coronavirus disease. Only 3.57% of the participants identified respiratory failure as the only complication of the disease.

What is the treatment for novel coronavirus?

The participants were asked to identify a treatment for the COVID-19 virus. Most of the study participants (89.29%) identified supportive care as the most suitable way to treat the disease. 3.57% identified antiviral therapy, while 7.14% suggested that neither supportive care not antiviral therapy were suitable treatment options for the novel coronavirus disease.

How to reduce the risk of transmission?

The participants were asked to provide information on how to reduce the risk of coronavirus transmission. All the participants suggested that hand hygiene, covering the nose and the mouth while coughing, avoiding sick contacts, and having well-cooked meat and eggs were important measures in reducing the risk of transmission.

Seeking early medical care

All the participants agreed that one should seek early medical care once they experience a fever, cough, and develop difficulty in breathing. The respondents also agreed that it was important for those showing symptoms to share their previous travel history with the health care providers.

In sum, the current study found that most of the study participants had attended lectures/ discussions on COVID-19. Only a few HCWs could identify the incubation period of the novel coronavirus. However, most of them could identify the most and less common symptoms of the disease as fever, cough, headache, sore throat, runny nose, and skin rashes. Most of the HCWs were aware that the virus transmitted through contact. A good number of the study participants also identified pneumonia, respiratory failure and death as complications associated with coronavirus disease. HCWs in Kuwait identified supportive care as the most suitable way to treat the coronavirus disease. Besides, they also suggested that hand hygiene, covering the nose and the mouth while coughing, avoiding sick contacts, and having well-cooked meat and eggs were important measures that could help reduce the risk of transmission. Lastly, they also agreed that seeking early medical care was important for those who were experiencing symptoms like fever, coughing, and difficulties in breathing.

These findings are consistent with previous studies that recommended health awareness as a useful mechanism of promoting awareness, perception, and a positive attitude towards the coronavirus disease (6-10). Even though a majority of the study participants attended lectures/ discussions in the current study, it can be argued that not all were aware of the measures they could undertake to protect themselves and patients from coronavirus, an observation also reported by (8).

All in all, the current study has been used successfully to account for HCWs knowledge and perception on the coronavirus disease in Kuwait. However, the findings of this study must be interpreted cautiously due to the limited sample used as compared to similar studies (6-10). Hence, the findings of this work can be used as a basis for a more extensive study using larger cross-sectional samples in Kuwait.

CONCLUSION

The aim of the study was to examine the knowledge and perception of HCWs toward COVID-19. A prospective study design was used to examine the development of the disease among 28 HCWs between mid-May and the start of June 2020. The primary findings were as follows. Most of the study participants had attended lectures/ discussions on COVID-19, but only a few could identify its incubation period. However, most of them could identify the most

and less common symptoms of the disease as fever, cough, headache, sore throat, runny nose, and skin rashes. Based on these findings, the study recommends running health education programs in Kuwait to promote knowledge on the coronavirus and help the HCWs develop positive attitudes and uphold important practices.

CONFLICTS OF INTEREST

Authors have declared that no competing interests exist.

ETHICS APPROVAL

Considering national legislation regulating the safety of human subjects in accordance with institutional review board and bioethical standards (IRB Registration Number with KACST, KSA: H-01-R-059).

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