

Knowledge and Attitude towards 2019 Novel Coronavirus (COVID-19) Among Health Care Workers in Tripoli, Libya

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Abstract

The rising incidence of COVID-19 continues to cause distress, worry, and fear amongst the public, mostly for healthcare workers, as they are the most vulnerable individuals at risk of contracting this new SARS-CoV-2 outbreak. This study measured levels of knowledge and attitude regarding COVID-19 among health care workers in Libya. A cross-sectional survey was conducted among healthcare workers in Libya between April 22 and June 16, 2020 using online pre-validate questionnaire. We obtained 272 valid participants from 28.7% nurses, 25.3% physicians, 34.2% pharmacists, and 11.8% other health care workers. The majority of respondents (54.4%) were from the western part of Libya, and most of participants (41.2%) used international health websites as a source of information. Most of the participants (89.3%) perceived that they had adequate knowledge about COVID-19, and (95.6%) of respondents affirmed that COVID-19 can be life-threatening disease. All participants agreed that the transmission of COVID-19 can be prevented by using standard and isolation precautions given by the health care authorities. In addition, most participants had good attitude toward the adequate information about COVID-19 in Libyan society. Readiness for the pandemic were low among government institutions as spotted from this study. Therefore, an effective educational training program should be implemented to ensure maintenance of appropriate practices during the COVID-19 pandemic.

Introduction

Coronavirus outbreak 2019 also known as COVID-19 is a speedily growing pandemic caused by a novel human coronavirus (SARS-CoV-2) formerly known as 2019-nCov [1]. It was first reported in December 2019 among patients with viral pneumonia symptoms in Wuhan, China [2]. On 11th March 2020, WHO stated the outbreak of COVID-19 as a global pandemic [3]. Since 12th September 2020, the virus has infected over 28,329,790 people, causing 911,877 deaths in 216 countries worldwide [4].

Globally, the United States of America has the highest affected with 695,350 cases and the highest number of deceases (32,427 deaths). While, African region is the least affected with 13,892 cases and 628 deaths, but the numbers are increasing [4]. Libya has so far confirmed 75 465 cases of COVID-19 as of 18th November 2020 [4].

Since the first confirmed case announced in Libya on 24 March 2020, in Tripoli city, rising distress and anxiety expanded to other cities from the prospect of contracting COVID-19 and its outbreak [5]. The Health Care Workers (HCWs) as the first line of protection and older persons were the most vulnerable to COVID-19 infection that the majority of other people [6]. Throughout that time, there was also a serious deficiency of personal protective equipments given to the existing conflict and the country unrest. Likewise, it was very important to focus on the need to understand the level of readiness of HCWs in order to manage with the outbreak of COVID-19 in the country. This circumstance inspired the necessity to conduct the current study aiming to explore the level of knowledge and attitude among HCWs towards the outbreak of COVID-19 in the country.

Presently, COVID-19 is an everyday dialogue topic in the social media and among the public, particularly among patients and HCWs. Therefore, to ensure the protection of HCPs in Libya from COVID-19, there is a crucial need to increase the understanding and alertness of COVID-19 among HCPs. This study aims to evaluate the knowledge and attitude of HCPs towards COVID-19. The outcomes may be useful in the preparation of health education programmes about this emerging infectious disease.

Methods

Study design

A cross-sectional questioner-based survey was conducted between April 22 and June 16, 2020, and was approved by the committee of faculty of Medical technology, the University of Tripoli, Libya. A pre-tested validated questionnaire was distributed online targeted all HCWs who were employed at one of the healthcare centers in Libya.

Questioner development and distribution

The online questionnaire was developed, with some adjustments, using the commonly asked queries from the WHO and the national center for disease control websites [7,8]. The questionnaire was designed in English and was pre-validated on 7 HCWs (2 physicians, 2 pharmacists, 1 nurse, 2 technicians) to determine adequacy and the simplicity of the questions, and it was then revised accordingly.

The questionnaire comprised 3 sections addressing knowledge and attitude of HCWs regarding COVID-19. The first section enclosed demographic characteristics such as age, gender, occupation, place of resident, and respondents' source and sufficiency of knowledge on COVID-19. The second section evaluated the knowledge of HCWs by asking queries on the etiology, symptoms, incubation period, risk group, consequences, source of transmission, prevention and treatment of COVID-19 (10 items).

A scoring scheme was used to measure the level of knowledge of each item; 2 points for each correct answer, 1 point for an incorrect answer. A level of ≥ 10 points ($\geq 50\%$ of total marks) was considered adequate knowledge. Respondents were categorized into 2 groups depending to their level of knowledge: deficient knowledge (< 10 points), and adequate knowledge (≥ 10 points). The third section of the questionnaire evaluated the attitude of HCWs regarding COVID-19 with a set of eight "yes or no" questions.

Statistical analysis

Data were presented frequencies and proportions, and were analyzed using Statistical Package for Social Sciences software (SPSS) software, version 22. Pearson's Chi-squared was used as the test of significance between categorical outcomes. The p value < 0.05 was considered significant.

Results

A total of 272 respondents have completed the online questionnaire. The age range of the participants was 21–57 years, with the highest range were in the 31-40 category of age (112,41.1%).

Table 1 summarizes the sociodemographic characteristics of the respondents. Males 167 (61.4%) were more predominate than females 105 (38.6%). The study group included 78 (28.7%) nurses, 69 (25.3%) physicians, 39 (34.2%) pharmacists, and 32 (11.8%) other health care workers.

The majority of respondents 148 (54.4%) were from the western part of Libya, followed by 89 (32.7%) and 35 (12.9%) from the eastern and southern region, respectively. Most of the health care workers 242 (89.3%) perceived that they had adequate knowledge about COVID-19. The main sources of COVID-19 information were the international health websites 112 (41.2%) and social media 72 (26.5%).

Table 1: Baseline characteristics of health care workers (n=272)

Characteristics	Frequency	Percentage
Gender		
Male	167	61.4
Female	105	38.6
Age (years)		
21 - 30	86	31.7
31 - 40	112	41.1
40 - 50	39	14.4
> 50	35	12.8
Occupation		
Nurse	78	28.7
Physician	69	25.3
Dentist	9	3.3
Pharmacist	93	34.2
Medical lab specialist	12	4.4
Medical technician	11	4.1
Place of residences		
West of Libya	148	54.4
East of Libya	89	32.7
South of Libya	35	12.9
Do you have sufficient knowledge COVID-19?		
Yes	243	89.3
No	29	10.7
Source of knowledge about COVID-19		
Social media	72	26.5
Ministry of Health website	11	4
TV	43	15.8
Medical journal or newspaper	34	12.5
International health websites e.g. (WHO, CDC)	112	41.2

Table 2 exhibited the existing status of COVID-19 knowledge among health care workers. The majority, 263 (96.7%), were aware that the disease is a viral infection. A majority of participants (91%) in the eastern region knew that the COVID-19 is transmitted by close contact with infected person or animal. All

participants knew that fever, cough and shortness of breath are symptoms of COVID-19. Only 39.9%, 23.6% and 31.4% of the participants answered the question 'incubation period is 2–4 weeks' correctly in western, eastern, and southern region in Libya, respectively.

On comparing the knowledge about the antibiotics are the first-line treatment for COVID-19, the participants in eastern region showed non-significantly more awareness than other regions (91%, $p = 0.964$). On the other hand, around 260 (95.6%) of respondents affirmed that COVID-19 can be life-threatening disease.

Table 2: Knowledge about COVID-19 among health care workers

Geographic Region in Libya								P value
Question (correct answer)		Western No (148)		Eastern No (89)		Southern No (35)		
		Yes	No	Yes	No	Yes	No	
COVID is a viral infection (Yes)	NO.	145	3	87	2	31	4	0.966
	%	97.9	2.1	97.7	2.3	88.5	11.5	
COVID is transmitted by close contact with infected person or animal (Yes)	NO.	132	16	81	8	28	7	0.091
	%	89.2	10.8	91	9	80	20	
Fever, cough and shortness of breath are symptoms of COVID (Yes)	NO.	272	0	272	0	272	0	-
	%	100	0	100	0	100	0	
The incubation period is 2-4 weeks (No)	NO.	89	59	68	21	24	11	0.959
	%	60.1	39.9	76.4	23.6	68.6	31.4	
Antibiotics are the first-line treatment (No)	NO.	22	126	8	81	11	24	0.964
	%	14.9	85.1	9	91	31.4	68.6	
Washing hands with soap and water can help in prevention of disease transmission (Yes)	NO.	272	0	272	0	272	0	-
	%	100	0	100	0	100	0	
Patients with underlying chronic diseases are at a higher risk of infection (Yes)	NO.	272	0	272	0	272	0	-
	%	100	0	100	0	100	0	
Health care workers are at a higher risk of infection (Yes)	NO.	272	0	272	0	272	0	-
	%	100	0	100	0	100	0	
COVID could be fatal (Yes)	NO.	143	5	86	3	31	4	0.966
	%	96.6	3.4	96.6	3.4	88.6	11.4	

As shown in Table 3, several items gained agreement amongst the participants. About 91.6% of male and 96.2% of female contributors agreed that COVID-19 is a dangerous disease. All participants agreed that the transmission of COVID can be prevented by using standard and isolation precautions given by the health care authorities. Around 91% of male and 82.9 of female participants agreed that COVID-19 can be reduced by active participation of health care worker in hospital infection control programme. However, only 63.5% of males and 72.4% of females agreed to take COVID-19 vaccine if were available.

There was difference among participants that intensive treatment should be given to diagnosed patients. By comparing males and females, the males (64.7%, $P \leq 0.05$) showed significantly better attitude toward the intensive treatment for COVID-19 infected patients than females (33.3%). In addition, most participants had good attitude toward the adequate information about COVID-19 in Libyan society sufficient. However, males had better attitude towards the available information about COVID in Libyan

society sufficient (59.9) than females (55.2%). About 39.5% of male and 15.2% of female respondents felt that the government institutions able to control the epidemic.

Table 3: Attitude of health care workers toward COVID-19

Item (correct answer)		Male N=167		Female N=105		P value
		Yes	No	Yes	No	
Do you think that COVID-19 is a dangerous disease?	NO	153	14	101	4	0.885
	%	91.6	8.4	96.2	3.8	
Transmission of COVID can be prevented by using standard and isolation precautions given by CDC, WHO, APIC, etc? (Yes)	NO	167	0	105	0	-
	%	100	0	100	0	
Prevalence of COVID can be reduced by active participation of health care worker in hospital infection control programme? (Yes)	NO	152	15	87	18	0.635
	%	91	9	82.9	7.1	
If a COVID vaccine were available, would you have it?	NO	106	61	76	29	0.681
	%	63.5	36.5	72.4	27.6	
Intensive treatment should be given to diagnosed patients? (Yes)	NO	108	59	53	52	0.023*
	%	64.7	35.3	33.3	66.7	
Health care workers must avail themselves of all information about the virus? (Yes)	NO	167	0	105	0	-
	%	100	0	-	0	
Is the available information about COVID in Libyan society sufficient?	NO	100	67	58	47	0.779
	%	59.9	40.1	55.2	44.8	
Are the government institutions able to control the epidemic?	NO	66	101	16	121	0.393
	%	39.5	60.5	15.2	48.8	

CDC = Centers for Disease Control and Prevention, WHO = World Health Organization, APIC = Association for Professionals in Infection Control and Epidemiology. All respondents answered either yes or no. There were no missing values or don't know responses.

Discussion

Little studies were conducted in Libya among the HCWs to evaluate their knowledge and attitude about COVID-19. This survey study was conducted to evaluate of the participants' knowledge and attitude about risk perception of the COVID-19 outbreak. The distribution of the sociodemographic characteristics of the respondents showed a high percentage of males, nurses and most of them were from the western part of Libya. Nearly 89.3% perceived that they had adequate knowledge about COVID-19, and 41.2% confirmed getting knowledge about COVID-19 from the international health websites. This differs from the findings of previously published studies, where social media was the main sources of information [9,10]. This shows that the educational policies and guidelines posted online by the international health organizations encouraged the HCWs to follow them.

Furthermore, our study indicated high rate of knowledge (91%) compared with recently published local study, where they reported the overall rate of respondents providing correct answers on the knowledge questionnaire was 26.5%, but slightly higher than the knowledge toward COVID-19 among US residents (80%) [10,11]. Another recent study demonstrated that 79.9% of healthcare workers had sufficient knowledge on COVID-19 [9].

The results of this study suggest a good relationship between information available in the media about COVID-19 and the depth of knowledge among HCWs. For example, all participants knew about the preventive measures, 86.9% of all participants agreed that COVID-19 can be reduced by active participation of HCWs in hospital infection control programme, 96.7% were aware that the disease is a viral infection, 91% knew that the COVID-19 is transmitted by close contact with infected person or animal. These results are consistent with findings from previous studies [12,13]. On the other hand, fewer participants were knowledgeable about the incubation period.

Our study reported high scores of attitudes toward COVID-19, which corresponds to a lower potential risk rate for COVID-19. In addition, all participants agreed that the transmission of COVID-19 can be prevented by using standard and isolation precautions given by the health care authorities. This specifies the significance of health education that could enhance the prevention behavior toward COVID-19 in society. Generally, most participants had a positive attitude towards active participation in infection control programmes and the role of guidelines in prevention of the infection. However, their believe in the ability of the government to control this epidemic were low. This could be explained by a lack of proper training about the preventive measurements provided by the authorities to them. Despite the healthcare situation and civil war in Libya, most participants reported good attitude toward the adequate information about COVID-19 in Libyan society sufficient. A similar study conducted on a Chinese population reported an overall knowledge of 90% [14].

Conclusion

In conclusion, HCWs in Libya exhibited a high level of knowledge and positive attitudes towards COVID-19 pandemic. However, there is a visible variance in knowledge level between the professions. The low believes in the preparedness to control this pandemic highlights the importance of education and training programs for healthcare workers, to control and avert infection from COVID-19. However, the nonexistence of a planned and effective governmental strategy, along with a deprived healthcare infrastructure, renders our country exposed. Continued professional education is advised among HCWs in Libya to improving any deficiencies in knowledge.

Declarations

Competing Interest: Authors declare no competing interests

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