Knowledge, Attitude &Practice of Healthcare Workers about COVID-19 in a Sample of PHCCS in Baghdad /Al Rusafah Health   Directorate 2022

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Background : Coronavirus disease (COVID-19) is an infectious novel respiratory disease caused by the SARS-CoV-2 virus. Symptoms are Fever or chill ,Cough ,Shortness of breath or difficulty breathing ,Fatigue ,Muscle or body aches ,Headache ,New loss of taste or smell ,Sore throat ,Congestion or runny nose ,Nausea or vomiting and Diarrhea. HCWs are at high risk of getting or transmit the infection to the community

Objective: To determine the magnitude of knowledge, attitude and practice to word COVID-19 among healthcare workers.

Methods: A cross-sectional study, done in a new Baghdad sector for primary health care, The data collated between Jan. and Jun, 2022. A convenient sample of 205 participants of HCWs. A self-administered questionnaire was done by direct interview with HCWs. which evaluate their knowledge, attitude and practice regarding COVID-19and their association with their demographic factors .The questionnaire answer either by(yes, no, don't know)each right answer given 1 score ,wrong or don't know 0 score. Regarding knowledge score (poor < 50%,fair 50%-75%,good >75%) ,attitude score(positive>50%,negative<50%),practice score(good>50%,bad<50%).

Results: more than one third of participant found in age group(30-39),the most common information about COVID-19 were Iraq MOH and WHO website (73.2%) the mean knowledge score were   significant difference among   gender(female 21.16,p=0.001),educational   level(higher   education22.16,p=0.003),profession(medical specialties 21.79,p-0.001) respectively .The mean attitude score were highly significant among gender (female 8.27,p=0.001),profession(medical specialty 9.02,p=0.017).The mean   score   for   general   practice   were   significantly   high   in   age   30-39yr (9.05,p=0.001),married(8.95,p=0.001),higher   education(8.54,p=0.036),medical specialists(9.04,0.001)respectively.

Conclusion and Recommendations: There was a significant gap of knowledge ,attitude and practice more seen in a HCWs from health staff and administrator than the HCWs from medical staff this mean we need more training courses about COVID-19 knowledge ,attitude and practice to increase their confidence in battling the current outbreak and preparing them for any future surges of the disease .

Keywords: KAP (knowledge, attitude, practice), HCWS (health care workers)

Introduction: The world has faced a significant challenge since the outbreak of the novel coronavirus in China in December 2019. HealthCare systems worldwide struggled to cope with the many patients

suffering from the novel coronavirus disease 2019 (COVID19), with shortages in medical supplies and medical staff

commonplace (1) COVID-19 is an infection caused by sever acute respiratory syndrome - cronavirus-2(SARS-Co V-2)[1,2]Most people infected with the virus will experience mild to moderate respiratory illness and recover without requiring special treatment. However, some will become seriously ill and require medical attention.[1]

The incubation period for COVID-19 is thought to extend to 14 days, with a median time of 4-5 days from exposure to symptoms onset.[2-4] The signs and symptoms of COVID-19 present at illness onset vary, but over the course of the disease many people with COVID-19 will experience the following:[5]

Fever or chill ,Cough ,Shortness of breath or difficulty breathing ,Fatigue ,Muscle or body aches ,Headache ,New loss of taste or smell ,Sore throat ,Congestion or runny nose ,Nausea or vomiting and Diarrhea[5]

The virus can spread from an infected person's mouth or nose in small liquid particles when they cough, sneeze, speak, sing or breathe.

People may also become infected by touching surfaces that have been contaminated by the virus when touching their eyes, nose or mouth without cleaning their hands[6].

To prevent the spread of COVID-19:

1.Maintain a safe distance from others (at least 1 meter), even if they don't appear to be sick.
2.Wear a mask in public, especially indoors or when physical distancing is not possible.
3.Choose open, well-ventilated spaces over closed ones. Open a window if indoors.
4.Clean your hands often. Use soap and water, or an alcohol-based hand rub.

5.Get vaccinated when it's your turn. Follow local guidance about vaccination.
6.Cover your nose and mouth with your bent elbow or a tissue when you cough or sneeze.
7.Stay home if you feel unwell. [7]
HCWs are at high risk of getting the infection and the source of transmission in the community.

Objectives: To determine the magnitude of knowledge, attitude and practice to word COVID-19 among healthcare workers.

Methodology

1.Study design: A descriptive cross-sectional study

2.Study setting and data collection: The study will out in primary health care be carried belongs to a new Baghdad sector for primary health care.

The data will be collated between November and April, 2021-2022.

3.Study participants: A convenient sample of 205 participants of health workers work at these primary health care during the data collection period.

The data collection process will conduct for one day per week during the period of study from 8:30am to 2:00pm with assistance from colleague doctors.

Data collected through direct interview with the participants, the time need to fill the questionnaire was about 15 minutes.

4.Inclusion criteria: All health workers who works at the assigned primary health cares and who accept to participate in the study.

5.Data collection tools "The questionnaire was developed after review of relevant literatures( ) and   in keeping with the World Health Organization(WHO) recommendations and also reviewed by a specialist physician for the purpose of data collection .

The questionnaire was comprised of four sections: demographic data, knowledge, attitude, and practice sections.
1.The demographic section asked the participants for their:
Gender, age ,level of education, marital status, profession and professional experience, direct contact with patient, main sources of COVID-19 information, and having get infection with COVID-19.
2.The knowledge section had 26 questions that assessed the participants' knowledge on COVID-19 etiology, signs and symptoms, treatment and management, prevention, transmission, and risk factors. Each question had the answer options of true, false, or I don't know. Only the correct answer was given a score of 1; all other answers scored 0. Therefore, the total score for the section ranged from 0 to 26.

3. The attitude section had eleven questions, evaluating the participants' level of fear from COVID-19, their willingness to take preventive measures, be isolated if infected, and their confidence in getting COVID-19 vaccination. Each question had the answer options of true, false, or I don't know. Only the single answer that indicated a positive attitude was given a score of 1; other answers scored 0, with a total score ranging from 0 to 11 for the entire section.

4.Practice section consisted of twelve questions evaluating the participants' infection control measures during the outbreak. Measures that were always practiced were given scores of 1; otherwise, they scored 0. Accordingly, the maximum score for this section was range from 0-12.The final question about answer no of getting COVID-19 vaccine have other choice to answer why? Will further scalded in details and will have special measure

 To have a sufficient score in each section, Bloom's cutoff point of 80% was selected (8). Therefore, a score of 21 and above was considered having sufficient knowledge, 9 and above was a positive attitude, and 10 and above was good infection control practice. While some studies set the sufficient score at 70%, we used a more stringent criterion because of the seriousness of the disease and the importance of having a higher degree of knowledge, attitude, and practice to protect the staff, patients, and the community.

Pilot study: The questionnaire was piloted on 15 healthcare workers and further modified to suit the local setting. Results from the pilot study were excluded from the final analysis.

Statistical analysis: The analysis of data will carry out using the statistical package for social science (spss)-version 22. Chi –square test of means and t-test ware used to measure differences in responses and average scores between different groups of participants. Statistical significance was considered whenever p-value is less than 0.05

Results: This study included a total of 205 HCWs working at PHCCs in Baghdad, Al-Rusafah health directorate. The mean age was 32.26 ± 6.97 years, and more than one third of the participant HCWs 80 (39%) were found in the age group of (30 – 39) years. Of the 205 participant HCWs, there were 46 (22.4%) males versus 159 (77.6%) females, 158 (77.1%) were married, and 155 (75.6%) had university degree. The study participants included 46 (22.4%) medical doctors, 63 (30.7%) dentists, 24 (11.7%) pharmacists, 64 (31.2%) health staff, and 8 (3.9%) administrative. About three quarters of the participants had a COVID-19 infection. The most common sources of COVID-19 information were Iraq MOH and WHO website in 150 participants (73.2%), followed by social media and television in 46 (22.4%) and 42 (20.4%), respectively (Table 1).

Table 1: Baseline characteristics of participants HCWs

Baseline Characteristics	No. (N= 205)	Percentage (%)
Age (Years)		
20 - 29	61	29.8
30 - 39	80	39.0
40 - 49	42	20.5
≥ 50	22	10.7
Gender		
Male	46	22.4
Female	159	77.6
Marital Status		
Single	47	22.9
Married	158	77.1
Educational Level		
High School	20	9.7
University	155	75.6
Diploma/ Master	12	5.9
Board	18	8.8
Profession		
Medical Doctor	46	22.4
Dentist	63	30.7
Pharmacist	24	11.8
Health Staff	64	31.2
Administrative	8	3.9
Covid-19 Infection		
Yes	154	75.1
No	51	24.9
Source Of Information About Covid-19*		
Iraq Moh & Who Website	150	73.2
Social Media	46	22.4
Television	42	20.5
Physician	32	15.6
Friends & Family	30	14.6
Courses	16	7.8

*Multiple responses question.: According to the results of HCWs responses towards knowledge, attitude, and practices about COVID-19 infection, the mean overall knowledge score was 20.91 ± 2.96 and 13 (6.3%) had poor knowledge, 62 (30.2%) had fair knowledge, and the other 130 (63.5%) were with good knowledge. The mean overall

attitude score was 7.93 ± 1.62, and most of the participant HCWs 172 (83.9%) had positive attitudes toward COVID-19 while 33 (16.1%) had negative attitudes. The mean overall practice score was 8.64 ± 1.37, and 186 (90.7%) of the participant HCWs were with good practices while the remaining 19 (9.3%) were with poor practices about COVID-19 infection (Table 4.2).

Table (2): Overall knowledge, attitude, and practice scores of participant HCWs regarding COVID-19

Hcws Scores	No. (N= 205)	Percentage (%)
Knowledge Score		
Poor	13	6.3
Fair	62	30.2
Good	130	63.5
Attitude Score		
Positive	172	83.9
Negative	33	16.1
Practice Score		
Good	186	90.7
Poor	19	9.3

The distribution of participant HCWs by mean knowledge score and certain socio-demographic characteristics showed that there was a statistically significant difference in the mean knowledge score in regard with gender, educational level, and profession of the HCWs. The mean knowledge score was significantly higher among female HCWs (21.5, P= 0.001) and was also significantly higher among HCWs with higher education (22.16, P= 0.003). Further, medical specialties had a significantly higher mean knowledge score than that of other professions (21.79, P= 0.001). No significant difference ($P \geq 0.05$) was found between the mean knowledge score and the other variables (Table 3).

Table (3): Distribution of the participants by knowledge score and baseline characteristics

Baseline Characteristics	Knowledge Score Mean ± Sd	P - Value
Age (Years)		
20 - 29	21.08 ± 2.50	0.11
30 - 39	21.12 ± 2.38	
40 - 49	19.95 ± 4.63	
≥ 50	21.54 ± 1.26	
Gender		
Male	18.86 ± 3.73	0.001
Female	21.5 ± 2.41	
Marital Status		
Single	21.01 ± 2.83	0.399
Married	20.59 ± 3.39	
Educational Level		
High School	19.1 ± 4.11	0.003
University	20.92 ± 2.89	
Higher Education	22.16 ± 1.11	
Profession		
Medical Specialty	21.79 ± 1.31	0.001
Health Staff	19.25 ± 3.24	
Administrative	20.01 ± 2.0	
Covid-19 Infection		
Yes	21.15 ± 2.21	0.507
No	20.83 ± 3.17	

In the present study, the mean attitude score was significantly higher among female HCWs (8.27, P= 0.001) and was significantly higher among medical doctors (9.02, P= 0.017). Other factors showed no significant difference (P ≥ 0.05) in the mean attitude score (Table 4).

Table 4: Distribution of the participants by attitude score and baseline characteristics

Baseline Characteristics	Attitude Score Mean ± Sd	P - Value
Age (Years)		
20 - 29	8.08 ± 1.73	0.156
30 - 39	8.13 ± 1.39	
40 - 49	7.54 ± 2.0	
≥ 50	7.54 ± 1.18	
Gender		
Male	6.73 ± 1.69	0.001
Female	8.27 ± 1.44	
Marital Status		
Single	7.72 ± 1.97	0.319
Married	7.99 ± 1.51	
Educational Level		
High School	8.2 ± 1.7	0.887
University	7.89 ± 1.73	
Higher Education	8.01 ± 1.04	
Profession		
Medical Specialty	9.02 ± 1.3	0.017
Health Staff	7.46 ± 2.04	
Administrative	7.82 ± 0.82	
Covid-19 Infection		
Yes	7.98 ± 1.69	0.399
No	7.76 ± 1.39	

It was clear that the mean score for general practices about COVID-19 was significantly higher among HCWs aged (30 – 39) years (9.05, P= 0.001), married HCWs (8.95, P= 0.001), HCWs who had a higher education (8.54, P= 0.036), and also was significantly higher among medical specialists (9.04, P= 0.001). No significant difference (P ≥ 0.05) was found between the mean practice score and gender and get COVID-19 infection (Table 5).

Table 5: Distribution of the participants by practice score and baseline characteristics

Baseline Characteristics	Practice Score Mean ± Sd	P - Value
Age (Years)		
20 - 29	**8.16 ± 1.54**	**0.001**
30 - 39	**9.05 ± 1.21**	
40 - 49	**8.4 ± 1.43**	
≥ 50	**9.0 ± 0.75**	
Gender		
Male	**8.47 ± 1.54**	0.341
Female	**8.69 ± 1.32**	
Marital Status		
Single	**7.61 ± 1.64**	**0.001**
Married	**8.95 ± 1.11**	
Educational Level		
High School	**8.2 ± 0.89**	**0.036**
University	**8.39 ± 1.4**	
Higher Education	**8.54 ± 1.19**	
Profession		
Medical Specialty	**9.04 ± 1.01**	**0.001**
Health Staff	**8.06 ± 1.48**	
Administrative	**8.25 ± 1.58**	
Covid-19 Infection		
Yes	**8.59 ± 1.45**	0.297
No	**8.82 ± 1.09**	

Statistical analysis: The data analyzed using Statistical Package for Social Sciences (SPSS) version 26. The data presented as mean, standard deviation and ranges. Categorical data presented by frequencies and percentages. Student t-test was applied to test for the comparison of the mean of two groups whereas ANOVA test was utilized to compare means of more than two groups. A level of P – value less than 0.05 was considered significant.

Discussion: In this study among HCWs which highlight several challenges facing in a primary healthcare centers during the COVID-19 pandemic in Baghdad Al-Rusafah health directorate. We found that the most common sources of COVID-19 information were Iraq MOH and WHO website in 150 participants (73.25%) when we compare with (Komakooko et al 2021) that the

main sources of information were traditional news media (TVs, radios, etc.) and social

media (Facebook, WhatsApp, etc.) and (Giao et al 2020). The findings showed that HCWs are more interested in

social media to gather knowledge on an emerging infectious disease

like COVID-19 than the official website of the Ministry of Health

the explanation is our data consist of medical doctor of about (22.4%), dentists (30.7%) and pharmacists (11.8%) of total (64.9%) medical staff are more interest to look forward information about COVID-19 from Iraq MOH and WHO websites.

In our study we found the mean knowledge score was significantly higher among female HCWs (21.5, p=0.001) same result seen in (Aynetu a et al 2021) one possible explanation is that female HCWs are concerned about COVID-19 transmission to their families due to their close proximity to their children. Other possible explanation is female workers being more meticulous or having more associations than male workers.

Medical specialties had significantly higher mean knowledge score than that of other professions (21.79, p=0.001) and also significantly higher among HCWs with higher educations (22.16, p=0.003) when we compare with other study in Egypt (Abdl El-Nassir S et al 2021) physicians score was (91.7%) this is because higher knowledge and education.

We found that the mean attitude score was significantly higher among female HCWs (8.27, p=0.001) and was significantly higher among medical doctors (9.02, p=0.017) there were positive correlation between knowledge and attitude the same result seen in study done in Uganda (Komakooko O et al 2021). In the context of COVID-19, knowledge of the disease may influence the attitude.

Our data show that the mean score of fore general practice about COVID-19 was significantly higher among HCWs aged (30-39) years (9.05, p=0.001) may be due to

Married HCWs show higher mean score general practice about COVID-19(8.95, p=0.001) the explanation that married individuals are more responsible and concerned about COVID-19 transmission to their families(partner and children) more than single .

Also HCWs who had higher education (8.54,p=0.036)and medical specialist(9.04,p=0.001) also was significantly high general practice about COVID-19 the same result to (Abd El-Nassir S et al 2021) that physician practice score (100%) and (KomakookoOet al 2021) that positive correlation between good knowledge and practice and in contrast with(Aynetu a et al) that show nurse were 8 times more likely to practice to COVID-19 preventive measures than other health professions.

Limitation of the study: The limitations of our study is a small sample size, being conducted in a single health sector that result may cannot been generalized, another limitation in our study note that male participants ware only 22.4% (46/205) of the study subject this is not a pure selection bias issue but an actual reflection of constituents of the workforce that makes primary health care sector.

Conclusion and recommendation: This study assessed the KAP of HCWs in Baghdad al-jadeda health sector for primary health care center significant gap of knowledge ,attitude and practice more seen in a HCWs from health staff and administrator than the HCWs from medical staff this mean we need more training courses about COVID-19 knowledge ,attitude and practice to increase their confidence in battling the current outbreak and preparing them for any future surges of the disease .

Future studies needed that can estimate the knowledge, attitude and practice of HCWs on a large scale to be able to design appropriate interventions on a national level

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