

Knowledge, Attitude and Practice of Healthcare Professionals Towards COVID-19: A Cross-sectional Survey from Sudan

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ABSTRACT

On 11th March 2020, the WHO declared coronavirus disease (COVID-19) as a global pandemic. Healthcare professionals (HCP) are at the frontline in the battle against this deadly virus. Their knowledge, attitude and practice (KAP) are pivotal in the fight against the disease. A hospital-based cross-sectional survey was carried out to assess KAP of HCP in Sudan towards COVID-19. The study was conducted in Omdurman Military Hospital (OMH) during April 2020. A total of 112 HCP constituted the sample size and were selected through simple random sampling. Statistical analysis was carried out using SPSS software version 26. Females constituted 62.5% of the study sample, while 37.5% were males. 57.1% were between 23 to 30 years of age. Nurses were the highest represented category with 34.8%, followed by physicians and pharmacists with 26.8% and 20.5%, respectively. The mean knowledge score among females was 4.84 out of 6 and for males 4.52 (p-value 0.05). The difference in knowledge score concerning the age group or profession carried no statistical significance. 93.8% of the study participants showed good knowledge about the disease. And 81.3% had a positive attitude towards preventive measures. This study spotted the light on the awareness and skills of the front-liners in the battle against the deadly virus. It also showed good knowledge and a positive attitude of HCP about the disease. However, facing the high tide of COVID-19 requires a holistic approach.

Keywords: COVID-19, Knowledge, Attitude, Practice, Healthcare professionals

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INTRODUCTION

In late December 2019, a novel coronavirus was found to be responsible for an upsurge of pneumonia cases in Wuhan, China. It was later identified by the WHO as SARS-CoV-2, and the disease was given the name coronavirus disease 2019 (COVID-19) (Lu et al., 2020). It rapidly spread to other countries and on 11th March 2020, the WHO declared it a global pandemic with most of the countries having registered cases, including Sudan.

The clinical features of COVID-19 include fever, cough and malaise. In severe cases, a patient can develop acute respiratory distress syndrome (ARDS) that can have unfavorable consequences leading to death. The symptoms tend to be more prominent and severe in the

elderly and those with immunosuppression (Guan et al., 2020). Concerning the mode of transmission, studies to date suggest that the virus spreads through respiratory droplets rather than air (WHO, 2020). Some authors hypothesized that the origin of the virus is linked to bats (Giovanetti et al., 2020). This is based on the fact that there is 96.2% genomic similarity between SARS-CoV-2 and the bat coronavirus RaTG 13 (*Rhinolophus affinis* virus strain RaTG13) (Zhou et al., 2020). The WHO suggests that SARS-CoV-2 most probably has its ecological reservoir in bats, and its transmission to humans had likely occurred through an intermediate host (WHO, 2020).

Concerning treatment, there are no specific drug

therapies for COVID-19. Some drugs have shown preliminary good clinical response and are currently being tested in clinical trials. Transmission of the virus among healthcare professionals (HCP) has been associated with overcrowding and lack of isolation rooms (Zhou et al., 2020). The absence of awareness and irrational practice can further worsen the situation. Hence, the knowledge, attitude and practice of HCP towards the global pandemic can have a positive influence in curbing its spread. This study was performed to assess the knowledge, attitude and practice (KAP) of HCP in Sudan towards COVID-19.

METHODOLOGY

Study Design

A hospital-based cross-sectional survey was carried out to assess the KAP of HCP towards COVID-19.

Study Setting and Population

The study was conducted among HCP in Omdurman Military Hospital (OMH), Sudan during April 2020.

Sample Size and Method

A total of 112 HCP selected through simple random sampling were included in the study.

Data Collection

A self-administered questionnaire was used as a tool for data collection. No names or contact details were recorded to maintain privacy and confidentiality. The questionnaire consisted of two sections. The first section comprised the demographics characteristics. The second section consisted of 6 questions regarding knowledge, 1 question about attitude and 2 questions concerning practice.

Data Processing and Analysis

Each correct answer on the knowledge part was given one point. Thus, the knowledge score ranged between 0 (with no correct answer) and 6 (for all correct answers). A cut off point of < 4 indicated insufficient knowledge. While a score of ≥ 4 reflected sufficient knowledge. Statistical analysis of the collected data was carried out using SPSS software version 26. The mean was used as a measure of frequency for numerical data and standard deviation as a measure of dispersion. T-test and ANOVA were used to analyze the association between knowledge score and demographic variables. P-value < 0.05 was used as a measure of statistical significance.

Ethical Statement

Ethical approval from OMH had been obtained before

conducting the study. All individuals who had been selected as potential study subjects were given a participant information sheet that clearly stated the study title and its purpose. They were given adequate time to review the information sheet and ask questions before giving consent. Submitting a complete questionnaire was regarded as consent for participating.

RESULTS

Main Characteristics of the Sample

A total of 112 HCP were included in the survey. They were selected through simple random sampling with a response rate of 86.1%. 57.1% of the study participants were between the age of 23 and 30 years, 33.0% were 31 to 40 years, 6.3% were 41 to 50 years and 3.6% were 51 years and above. Females constituted 62.5% of the sample size and males 37.5%. Based on the profession, nurses were the highest represented with 34.8%, followed by physicians and pharmacists with 26.8% and 20.5%, respectively. 17.9% of the participants were technical staff. The main characteristics of the sample population are presented in Table 1.

Knowledge

99.1% were aware of the main clinical symptoms of the disease. 94.6% appreciated the fact that currently there is no effective treatment for COVID-19, but early supportive management can help in recovery, and all study participants showed a knowledge of that the elderly and immune-suppressed are at higher risk of developing disease complications. Concerning the mode of transmission of the disease, the responses revealed significant variation. 50% attributed the mode of transmission to respiratory droplets, while 38.4% and 11.6% suggested direct contact and airborne transmission, respectively. 33.0% stated that eating or contact with animals does not result in disease transmission. The majority of study participants (95.5%) appreciated the importance of social distancing and avoiding crowded places as a measure to curb the spread of the disease. The knowledge of HCP towards COVID-19 is summarized in Table 2. Among the 112 HCP included in the survey, 105 (93.8%) showed good knowledge about COVID-19. The mean knowledge score was 4.72 ± 0.85 . The score varied between age groups, gender and profession. The difference in the mean knowledge score between the two genders approached statistical significance (p-value 0.05). However, no statistical significance was seen with regard to age group or profession (Table 3).

Attitude and Practice

The attitude section revealed that 81.3% agree that the pandemic can be contained by adhering to the WHO

Table 1. Baseline characteristics of the sample population.

Characteristics	Frequency, n (%)
Age	
23 – 30	64 (57.1)
31 – 40	37 (33.0)
41 – 50	7 (6.3)
51 years and above	4 (3.6)
Gender	
Male	42 (37.5)
Female	70 (62.5)
Profession	
Nurses	39 (34.8)
Physicians	30 (26.8)
Pharmacists	23 (20.5)
Technical Staff	20 (17.9)

Table 2. Knowledge of HCP towards COVID-19.

Question (Correct Answer)	Correct Response, n (%)
The main clinical symptoms of COVID-19 are fever, dry cough and malaise (Yes)	111 (99.1)
Currently, there is no effective treatment for COVID-19, but early supportive management can help in recovery (Yes)	106 (94.6)
Elderly and immunocompromised individuals are at risk of developing severe complications from the disease (Yes)	112 (100)
COVID-19 is transmitted through (Droplets)	56 (50.0)
Eating or contacting with animals can result in COVID-19 transmission (No)	37 (33.0)
To avoid contracting the disease, individuals should avoid crowded places and practice social distancing (Yes)	107 (95.5)

Table 3. Knowledge difference between the main variables.

Characteristics	Knowledge Score, Mean (SD)	P-value
Age		
23 – 30	4.75 (0.82)	0.95
31 – 40	4.70 (0.91)	
41 – 50	4.71 (0.95)	
Above 50	4.50 (1.00)	
Gender		
Male	4.52 (0.74)	0.05
Female	4.84 (0.89)	
Profession		
Physicians	4.83 (0.75)	0.69
Pharmacists	4.78 (0.99)	
Nurses	4.69 (0.83)	
Technical staff	4.55 (0.89)	

guidelines. In terms of practice, 73.2% have stated that they have worn a mask when leaving home during the past few days, while 26.8% did not. The majority of the respondents follow the cough/ sneeze etiquette (86.6%). The results are summarized in Table 4.

DISCUSSION

In reviewing the literature, we found paucity in research directed towards evaluating the KAP of HCP about COVID-19. In a cross-sectional survey among HCP across ten different hospitals in Henan, China, 89% had sufficient knowledge in regards to COVID-19 (Zhou et al., 2020). In Vietnam, 88.4% recorded sufficient knowledge

(Giao et al., 2020). Another study in Pakistan showed that 93.2% had good knowledge about the deadly virus (Saqlain et al., 2020). These results are close to the one obtained in this study where 93.8% of the participants had good knowledge about COVID-19. Two areas of weakness in regards to knowledge were revealed by the survey. The first was the mode of transmission. Half of the enrolled participants knew that the disease is transmitted via respiratory droplets. The figure is low compared to the 67% recorded by Giao et al. (2020) in Vietnam. The second aspect was the possibility of disease transmission if eating or in close contact with animals. Only 33% acknowledged that there is no evidence up-to-date that the disease can be transmitted

Table 4. Attitude and practice of HCP towards COVID-19.

Question (Response)	Frequency, n (%)
Attitude	
Do you agree that COVID-19 can be contained by following the WHO guidelines? (Yes)	91 (81.3)
Practice	
Have you worn a mask when leaving home during the past few days? (Yes)	82 (73.2)
Do you follow cough/ sneeze etiquette? (Yes)	97 (86.6)

in this manner. The majority of the sample population had a positive attitude towards the malady. 81.3% agreed that COVID-19 can be contained by following the measures set by the WHO. In the practice section, 73.2% have worn masks when leaving home during the past few days and 86.6% practice cough/ sneezing etiquette. However, the deficiency in wearing masks can be attributed to the shortage in the protective tool.

Sudan is a lower-middle-income country. There are serious limitations in the provision of healthcare services in the East African state. This is reflected in the shortage of diagnostic tools, treatment facilities and healthcare workforce. A pandemic of such magnitude imposes a fatal threat to the local population. Therefore, the role of HCP is paramount in facing the high tide of the global pandemic. The KAP of HCP towards COVID-19 is a pivotal preventive measure to curb the spread of the disease.

The findings of this survey show that the majority of HCP have sufficient knowledge and a positive attitude towards COVID-19. Unfortunately, this is not enough to halt the spread of the disease. A holistic approach needs to be adopted by the healthcare authorities to deal with COVID-19.

CONCLUSION

This study spotted the light on the awareness and skills of HCP in dealing with COVID-19. Sufficient knowledge and a positive attitude were demonstrated among the studied population. In fact, the KAP of HCP are critical in curbing the spread of the virus. However, efforts for containment of a global pandemic requires a holistic approach. The gaps and needs within the healthcare system in dealing with COVID-19 should be a public health priority and addressed in a timely fashion. Besides, community participation and raising health awareness among the population are vital elements.

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