

Awareness among Physicians and Medical Students of Pakistan Regarding COVID-19: A Questionnaire based Survey

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Abstract

Introduction: COVID-19 is the biggest public health problem faced by the entire world nowadays. Physicians are the frontline force to tackle this pandemic. They can also become a carrier and can serve as a major source of infection for the population. Sufficient awareness and knowledge are needed so that they can protect themselves from being a carrier and can correctly diagnose the patient of COVID-19.

Objective: The purpose of our study is to assess the awareness among healthcare professionals and medical students of Pakistan regarding COVID-19. Our data will be useful for the authorities to check if the medical students are ready to serve as a frontline force.

Materials and methods: In this cross-sectional study, physicians and medical students of government and private sector hospitals and universities across Pakistan were included. The confidence level of 95% was set with 5% margin of error. Demographic data was noted. Data was evaluated using SPSS version 21. Chi-square statistics was utilized to evaluate the relations. A p-value of less than 0.05 was deemed statistically significant.

Results: There were a total of 400 responses of our questionnaire. The number the physicians participating in our research was 200 (50%) and 200 (50%) students contributed in our study. The total response of 10 questions in our research is 4000 out of which 2730 (68.25%) are the correct responses. By evaluating the responses on the bases of profession, 1281 (46.9%) responses of the physicians while 1512 (55.3%) responses of medical students were correct.

Conclusion: To face this pandemic, adequate amount of knowledge is needed specially of the frontline workers. Our study showed 68.25% awareness of the participants and more responsiveness is needed in this regard to tackle this pandemic efficiently.

Keywords: COVID-19; Awareness; Physicians; Medical students; Respiratory syndrome

Introduction

In Pakistan, the first case of COVID-19 was reported on 26th February 2020. The number of confirmed cases is increasing with the increase in the number of days [1]. On 12th January 2020, the World Health Organization (WHO) affirmed that a novel COVID-19 was the reason for a respiratory disease in group of individuals in Wuhan City, Hubei Province, China, which was informed to the WHO on 31st December 2019. WHO on March 11, 2020 declared COVID-19 a pandemic [2].

Coronaviruses are an important cause of common cold. In 2002, a new disease emerged as an atypical pneumonia called Severe Acute Respiratory Syndrome (SARS). This genome sequence of coronavirus was called CoV-SARS. Horseshoe bat appeared to be its natural reservoir and source of transmission to the humans [3]. In 2012-2013, another severe pneumonia appeared and was called Middle East Respiratory Syndrome [MERS], and the virus was called MERS-CoV. It was said to be transmitted from camels to human as camels were declared the natural reservoir [4]. COVID-19 is the genome sequence of the same family of virus known as coronavirus. This family of virus is transmitted by respiratory aerosol [5].

Physicians are the frontline force to tackle this pandemic as they have been in previous outbreaks also. They can also become a carrier and can serve as a major source of infection for the population. Sufficient awareness and knowledge are needed so that they can protect themselves from being a carrier and can correctly diagnose the patient of COVID-19. Similarly, as this pandemic is increasing day by day, Government of Pakistan has also ordered the medical students to be reserved as they can be called anytime in case of shortage of the physicians. Hence, it is important to evaluate and increase their knowledge because from knowledge comes the practice.

The purpose of our study is to assess the awareness among healthcare professionals and medical students of Pakistan regarding COVID-19. Our data will be useful for the authorities to check if the medical students are ready to serve as a frontline force. Null hypothesis is that our students and physicians don't have sufficient awareness.

Methodology

In this cross-sectional study, physicians and medical students of government and private sector hospitals and universities across Pakistan were included. A structured questionnaire was used which is available on the official website of University of Health Sciences, Lahore.

The questionnaire was distributed through an online forum. This questionnaire was prepared from the guidelines of WHO to assess the awareness related to COVID-19. The first part of questionnaire contained socio-demographic questions after which in second part there were 10 questions concerning the diagnosis, management, prevention and counseling of the patients of COVID-19. The response of the questions was in the form of "true or false". Only those who answered the questions correctly were said to have knowledge and awareness.

The duration of the research is two weeks from 1st April to 15th April. Convenience sampling was done. The participants were informed about the study and consent was taken beforehand. The sample size was calculated by using Raosft [6]. The confidence level of 95% was set with 5% margin of error. There are a total of 250000 physicians and students from different public and private sector hospitals and universities across Pakistan.

Our sample size came out to be 384. Demographic data was noted. Data was evaluated using SPSS version 21. Chi-square statistics was utilized to evaluate the relations. A p-value of less than 0.05 was deemed statistically.

Results

There were a total of 400 responses of our questionnaire. The number the physicians participating in our research was 200 (50%) and 200 (50%) students contributed in our study corresponds to the demographic data.

The number of male participants in our study was 276 (69%) and of female were 124 (31%). Among the age group of <30, there were 229 (57.3%) respondents and in the age group of 31-50 and 51-70, there were 73 (18.3%) and 98 (24.5%) respondents respectively (Figure 1).

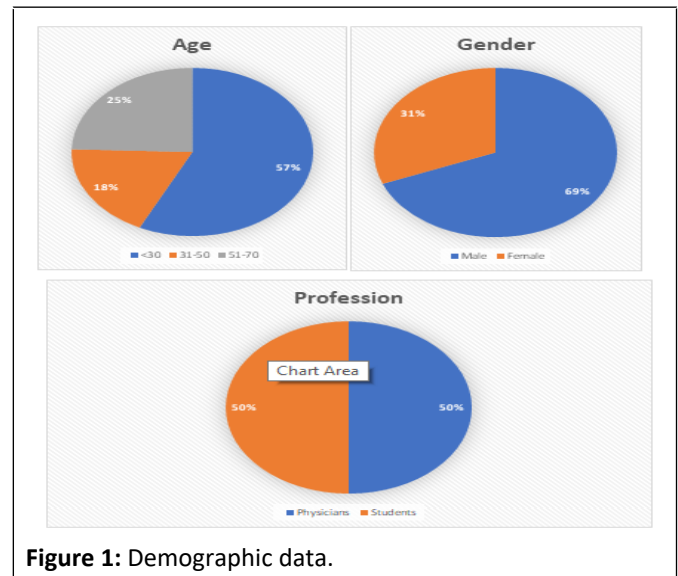


Figure 1: Demographic data.

The results were evaluated according to the profession also. The first three questions were regarding the diagnosis of COVID-19. The total correct responses to the question number 1 was 357 (89.2%) out of which 169 (47.3%) were from physicians and 188 (52.6%) were from medical students. The p-value for this question was 0.002 which is less than 0.05 (statistically significant) which means the variables (physicians and students) are well related regarding the awareness to this question concerning to the symptoms of COVID-19 and null hypothesis is rejected. Similarly, the correct responses of question 2 and 3 were 294 (73.5%) and 330 (82.5%) with a p-value of <0.05. Question number 4 was regarding mask being a single most important protection against COVID-19, the correct responses were 219 (54.7%) among which 90 (41%) physicians and 129 (58%) medical students gave correct response with a p-value <0.05. The question 5 enquired about isolation of the patients with a p-value of 0.2 (not statistically significant) which means that the variables are not connected. In question number 6, the participants were asked of the testing of COVID-19. Only 36 physicians (37.5%) and 60 (62.5%) medical students with a total 96 (24%) participants correctly responded with a p-value of 0.005 (0.05) which means that the variable (physicians and students) were mostly not aware regarding the testing of COVID-19. Question number 7 and 8 were regarding the usage of the masks. The p-value for question number 7 was <0.05. There were 198 (49.5%) correct responses out of which 131 (66.1%) were from medical students and the remaining 67 (33.9%) were from the physicians. The answers to question number 8 were 92% correct. The last two questions were relating the counseling of the self-isolated patients about visiting to the hospitals in case of emergencies. Question 9 was asked about coming to the hospital immediately which showed 116 (29%) correct responses consisting 93 (80%) responses of

medical students and only 23 (20%) responses of physicians. The last question asked about the helpline of COVID-19 in case of emergencies and was 92% correctly responded. The p-value of both the questions is <0.05. **Table 1** shows the distribution of the correct responses.

Questions	Total correct responses N=400	Physicians N=200	Students N=200	P-value
1	357 (89.2%)	169 (47.3%)	188 (52.6%)	0.002*
2	294 (73.5%)	113 (38.4%)	181 (61.5%)	0.000053*
3	330 (82.5%)	176 (53%)	154 (46.6%)	0.004*
4	219 (54.7%)	90 (41%)	129 (58%)	0.000089*
5	381 (95.5%)	188 (49.3%)	193 (50.6%)	0.24
6	96 (24%)	36 (37.5%)	60 (62.5%)	0.005*
7	198 (49.5%)	67 (33.9%)	131 (66.1%)	0.000026*
8	371 (92.7%)	188 (50.6%)	183 (49.3%)	0.335
9	116 (29%)	23 (20%)	93 (80%)	0.000001*
10	368 (92%)	168 (45.6%)	200 (54.3%)	0.000047*
Total (4000)	2730 (68.25%)	1281 (46.9%)	1512 (55.3%)	

Note: *p<0.05 is statistically significant.

Table 1: Distribution of correct responses N (%).

The total response of 10 questions in our research is 4000 out of which 2730 (68.25%) are the correct responses. The graphical presentation of total and individual responses is shown in **Figure 2**.

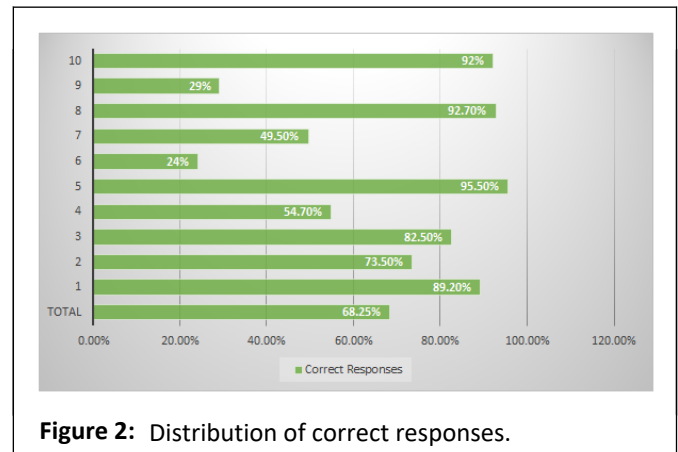


Figure 2: Distribution of correct responses.

By evaluating the responses on the bases of profession, 1281 (46.9%) responses of the physicians while 1512 (55.3%) responses of medical students were correct. This is shown in **Figure 3**.

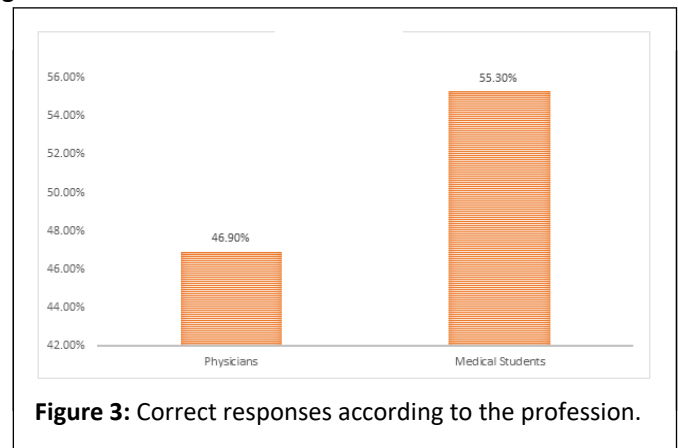


Figure 3: Correct responses according to the profession.

Discussion

A person is diagnosed as a patient of COVID-19 when he has cough, sore throat, shortness of breath and fever along with a travel history or a contact with COVID-19 patient. If he has sore throat, painful swallowing and painful glands in neck, the diagnosis of COVID-19 is excluded [7]. The first two questions of our study asked about these symptoms and majority of our respondent were well aware with a correct response of 89.2% and 73.5% respectively. This can be compared with a previous study where there was a correct response of 84.3% regarding the symptoms [8].

When asked about the management of a person without the symptoms of corona virus but of the common cold with no travel history or contact with COVID-19 patients in question 3, 82.5% said that they should be treated at home by getting the prescription through the telemedicine [9].

When asked regarding the mask as a tool for protection against COVID-19 in question number 4, 54.7% believed that the mask is not only entity protective against COVID-19, previous study shows that along with the mask, efficient hand-washing is also needed to protect against COVID-19 [10]. Along with this, for physicians on a frontline, personal protective equipment is

also needed to tackle this pandemic [11]. Question 7 and 8 asked about who should wear a mask? A person without the symptoms or a person with a symptom. Previous study shows that both the persons should wear a mask for protection but it is more needed for the person with the symptoms as mask may slow down the rate of spread through hindering the respiratory droplets transmission to another person. Mask is basically a tool to stop the spread of COVID-19 and not for the personal protection [12]. In our study, 92.7% of our respondents knew that it is must for a person with symptoms to wear a mask however, 50% knew that a person without symptoms can travel without face-mask. This can be compared with a previous study of Pakistan which showed that our healthcare workers had inadequate knowledge regarding the use of face-masks [13].

95.5% of the participants responded it correctly on question 5 that a person who just came from another COVID-19 affected area should isolate himself for 14 days [14]. But when asked about the testing of a person without the symptom but with a history of attending a wedding in question 6, only 24% responded correctly that she doesn't had to have her test done. As in Pakistan, there is a limited number of testing kits available so the protocol of testing here is to test only those who are symptomatic as mentioned in the recommendations of NIH, Pakistan [15].

The last two questions were regarding the counselling of self-isolated patients on what to do in case of exaggeration of the symptoms? In question 9, it was asked if they were needed to come to the hospital immediately, only 29% responded correctly that they didn't need to come to the hospital immediately but rather stay at home and call the helpline so that they could assess the symptoms and send an ambulance to take him to the hospital with isolation service. These are mentioned in the guidelines of home quarantine by NIH Pakistan [16]. In the question 10, 92% of the respondents knew about the helpline which has been made by government of Pakistan for the facilitation and consultation of COVID-19 patients.

When we evaluate the results based on the profession, it is found that 55.3% correct responses were from medical students and 46.9% of the correct responses were from the physicians. This can be compared with a previous study which also showed that the medical students have more correct response than the physician. This can be due to the fact that medical students are in the lockdown where they have more chance to study about the corona virus but in the questions regarding the management of COVID-19, the physicians have responded more correctly.

The overall correct response was 68.25% which can be compared with a previous study which showed that Pakistan is not well prepared to face this pandemic. We recommend that proper training programs may be conducted to prepare the frontline workers to face this pandemic. More research is needed in this regard. Our results can provide a baseline data to know about the awareness of frontline workers of Pakistan. If students are called in case of shortage of doctors, they should be prepared through the online webinars so that they may have

adequate awareness regarding diagnosis and management of COVID-19. The limitations of this study are its cross-sectional nature, the non-probable sampling technique and subjective limitations of the respondents as this was an online survey. Despite these limitations, our data can define the magnitude of the problem.

Conclusion

To face this pandemic, adequate amount of knowledge is needed especially of the frontline workers. Our study showed 68.25% awareness of the participants and more responsiveness is needed in this regard to tackle this pandemic efficiently. This is an international protocol to isolate the travelers from pandemic affected areas as shown in the previous study.

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