

Knowledge and Attitude of Health Science Students Regarding the Coronavirus Infection

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Abstract The rapid and extensive spread of the COVID-19 pandemic has become a major cause of concern for the healthcare profession. The purpose of the study was to assess the level of COVID-19 knowledge and attitude among Allied Medical science students which composed of physiotherapy and occupational therapy students at the Arab American University Palestine. This was a cross-sectional study conducted between April 12 and May 12, 2020. A random sample of 290 physiotherapy and occupational therapy students enrolled in the study. An online questionnaire was used. Results: Participants used mostly social media (30.7%). Most students 235 (81.0%) showed good knowledge and 273 (94.1%) showed a negative attitude regarding the COVID-19. Conclusion: physiotherapy and occupational students showed a good level of knowledge about the COVID-19 and a negative attitude.

Keywords: coronavirus, COVID-19, knowledge, attitude, physiotherapy, occupational therapy, students

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1. Introduction

Coronavirus disease (COVID 19) is among the major causes of threat to public health, primarily targeting the respiratory system and causing pneumonia of unknown etiology. [1,2] The principal symptoms in COVID-19 are dyspnea, shortness of breath, fever, myalgia, dry cough, and fatigue. [3,4] COVID-19 has fast transmission characteristics and is likely to occur through close contact with an infected person [2,5,6,7]. The coronavirus details are changing; as such, the transmission cannot be the only way. COVID-19 has spread extensively and rapidly from City of Wuhan to other parts of the world, and it has threatened many people's lives. [8]

Combating COVID 19 pandemic is a long process and involves shared efforts between individuals and the government; the best way to overcome the pandemic is through the appropriate tests, isolation, and supporting treatments. [9] Research on the development of a vaccine is underway. However, measures to increase public awareness and implement recommended health practices are some of the best approaches to the combat against COVID-19. [10]

According to the World Health Organization (WHO) and the United States (US) Centers for Disease Control and Prevention (CDC), it is highly recommended to contact persons with symptoms to prevent the spread of COVID-19 from traveling to high risk areas. Basic frequent washing and facing masks are also recommended. [11]

Health workers are one of the most at risk of infection with this mode of transmission. Apart from the burden of physical and psychological stress, extended work hours, fatigue, and burnout, the highly contagious coronavirus poses a further threat to the health system. [12]

During this pandemic, since beginning of March 2020, the Palestinian government has imposed a state-wide mandatory closing of all universities, colleges, schools and children's schools, as well as a policy on isolation. Only 30% of public and private workers were permitted to continue working (other workers either continued to work from home, received an unpaid leave, or were dismissed). With the exception of groceries, supermarkets and pharmacies, all stores have been closed. In light of continuing the academic year and trying to conduct final-semester exams as usually, the staff in all academic institutions had to turn to online teaching. With university lockdown, staff members began practicing and using remote teaching strategies. Meanwhile, in the new situation of uncertain conditions and controversial information relating to the new virus and often lacking sufficient personal protection equipment (PPE), the student has to complete part of their practice in healthcare facilities (the curriculum content framework). The Office of the Ministry of Health has asked all health science students across the country to voluntarily accept work in hospitals and community settings, because of labor shortages in hospitals and in the community settings. Physiotherapy and the occupational therapy students as other health workers responded to the call. The objective of this study was therefore to assess the level of COVID-19 knowledge and attitude between

physiotherapy and occupational students at the Palestinian Arab American University.

2. Method

The research design selected for this study was a cross sectional study. We used online an electronic web-based questionnaire for collecting data over 1 month (April 12, 2020, to May 12, 2020). The study was conducted in faculty of allied medical, Arab American University/ Palestine. The department prepared students at the level of bachelor in physiotherapy and occupational therapy and composed of students from all districts of Palestine. The target population involved students in third and fourth academic year of both physiotherapy students and occupational therapy since these students had practice and clinical part in their curriculum.

A total of 290 students participated in this study. This sample size was calculated (218) on the basis of Raosoft software in which the population size was kept as 500, power as 80%, response distribution as 50%, while confidence interval and margin of error was set at 95% and 5% respectively. [13] A random sampling approach was adopted in which the respondents were recruited for this study..

2.1. Instrument

The data was collected through a self-administered questionnaire. The study instrument was designed by the researchers after WHO instructions and guidelines review. [14] The initial draft of the questionnaire was validated by sending it to researchers and professionals from public health and medical background to give their expert opinion with respect to its simplicity, relativity and importance. Also, a pilot study was conducted on 20 physiotherapy students who gave their opinions on making the questionnaire simpler and shorter. The participants in the pilot study were excluded from the actual study. The modifications was done and then distributed to the participants for their response. Reliability coefficient was calculated by using SPSS v.23 and the value of Cronbach's alpha was found to be 0.82.

The questionnaire was divided into 3 parts. The first part composed of demographic characteristics of the participants (sex, age, specialty, and education level). The second part evaluated the participants' knowledge according to the information and recommendations of the WHO about the COVID-19 nature, etiology, symptoms, risk group, consequences, source of transmission, and prevention and treatment (thirty three Yes/No or I don't know questions). Knowledge was assessed by giving 1 to correct answer and 0 to wrong or I don't know answers. The knowledge scores ranged from 0-33. The last part determined the attitude of participants towards CoV 19 in which their responses were evaluated through 5-point Likert scale of agreement. Assessment of attitude was carried out through 16 item questions. Participants scoring $\geq 60\%$ were considered to have good knowledge and positive attitudes of the total expected scores [15].

2.2. Ethical Approval

The study was approved by Allied Medical science Faculty. The participants who agreed to participate completed the informed consent and then completed the questionnaire. Participation in this study was voluntary and the identification information of participants was not recorded anywhere on the questionnaire.

3. Results

The mean age of the respondents was 22.04 ± 3.76 year. The total number of participants from physiotherapy were 199 students. According to physiotherapy students, the mean age was 22.09 ± 4.31 year. The majority of the physiotherapy students 149 (74.9%) were female, and around two third of them 123 (61.8%) were in third year. The total number of participants from occupational therapy were 91. According to occupational therapy students, the mean age was 21.96 ± 2.16 year. The majority of the occupational therapy students 70 (76.9%) were female, and more than half of them 50 (54.9%) were in fourth year as shown in Table 1.

Table 1. Demographic Characteristics of Participants (N = 290)

Variables	Number of Respondents (%)	
	Physiotherapy	Occupational therapy
Gender		
Male	50 (25.1)	21 (23.1)
Female	149 (74.9)	70 (76.9)
Academic year		
Third Year	123 (61.8)	41 (45.1)
Fourth Year	76 (38.2)	50 (54.9)
Total	199	91

The analysis identified that the majority of participants 89 (30.7%) relied on online resources to obtain information including the use of social media (Table 2). Unexpectedly, only 50 (17.2%) of students used medical databases or medical literature search engines for up-to-date information.

Table 2. Sources of information related to COVID-19 among participants (290)

Sources of information	Number of Respondents (%)
Social media	89 (30.7%)
Medical search engine	50 (17.2%)
Official sites	20 (6.9%)
Healthcare workers	70 (24.1%)
Other	61(21.1%)

The total of 235 (81.0%) of the respondents showed good knowledge regarding the COVID-19 while 55 (19.0%) respondents had poor knowledge. According to physiotherapy students, the total of 162 (81.4%) of the respondents showed good knowledge regarding the COVID-19 while 37 (18.6%) respondents had poor knowledge.

Also, the occupational therapy students, the total of 73 (80.2%) of the respondents showed good knowledge regarding the COVID-19 while 18 (19.8%) respondents had poor knowledge, as shown in Table 3

Table 3. Students' Knowledge about COVID-19 (N=290)

Variable	Number of Respondents (%)		
	Physiotherapy students	Occupational therapy students	Total
Level of knowledge			
Poor knowledge	37 (18.6)	18 (19.8)	55 (19.0)
Good knowledge	162 (81.4)	73 (80.2)	235 (81.0)

The total of 273 (94.1%) of the respondents showed negative attitude regarding the COVID-19 while 17(5.9%) respondents had positive attitude.

According to physiotherapy students, the total of 191 (96.0%) of the respondents showed negative attitude regarding the COVID-19 while 8 (4.0%) respondents had positive attitude. Also, the occupational therapy students, the total of 82 (90.1%) of the respondents showed poor attitude regarding the COVID-19 while 9 (9.9%) respondents had positive attitude, as shown in [Table 4](#)

Table 4. Students' attitude about COVID-19 (N=290)

Variable	Number of Respondents (%)		
	Physiotherapy students	Occupational therapy students	Total
Negative Attitude	191 (96.0)	82 (90.1)	273 (94.1)
Positive Attitude	8 (4.0)	9 (9.9)	17 (5.9)

Results of an independent t test showed that there was no significant difference between physiotherapy and occupational therapy students regarding COVID 19 knowledge and attitude mean scores ($p > 0.05$) as seen in ([Table 5](#)).

Table 5. Difference between physiotherapy and occupational therapy students= 290)

Variable		N	Statistical test			
			M	SD	t	P value
Knowledge	Physiotherapy students	199	24.2	6.1	0.16	.871
	Occupational therapy students	91	24.3	5.8		
Attitude	Physiotherapy students	199	2.8	0.92	0.64	0.52
	Occupational therapy students	91	2.9	1.0		

• $P < 0.05$, M mean, SD standard deviation

4. Discussion

Health workers play a major role in the COVID-19 pandemic, both local and international. The healthcare professionals are on the front lines caring for patients and play a decisive role in the control of infections. [16,17] The healthcare professionals appear to be uniquely overworked, often without sufficient time to rest and recuperate and, without support and assistance to those in management or most directly involved in the COVID-19 pandemic. [18] High rates of infections among healthcare professionals are of serious concern, as infected personnel must stay out of work for a minimum of 14 days and deplete their already exhausted workforce. [19] Therefore there was a necessity for healthcare students to fill the left void of healthcare staff and to be prepared for COVID-19 in terms of knowledge and attitude.

Social media was a major source of information for participants to learn about COVID-19, which is the source of information for 30.7% of participants who use the social media. This is consistent with a study conducted in Pakistan and Nepal. [20,21] In addition, the most cited sources of information about Covid-19 infection were the social networks and social communication. [22] The recent progress of the Internet and popularity in social media could explain these results.

This study showed that the awareness of the targeted students was good regarding COVID-19 which is consistent with other studies. [21,23,24,25] This reflects the wider role played by social media and TV in the outbreak which raises COVID 19 awareness. In this regard, the generalized outbreak and high rate transmission of COVID-19 in the world might have increased the health workers students' attention and knowledge of this pandemic disease. Also, the results didn't find variability among students in their knowledge level. Both participants from physiotherapy and occupational students had sufficient knowledge.

Generally, most participants had a negative attitude towards COVID-19 infection, a result consistent with the study on attitudes of Bangladesi people towards COVID-19. [26] Also, this results consistent with Basnet and colleagues who found negative attitude among healthcare personnel in Nepal. [21] On the other hand, this results are inconsistent with Taghrir et al. [23] The negative attitudes may related to the impact of COVID-19 on economy, fear of becoming infected, and the fear of going to public places. Therefore, suggests that targeted health education interventions should be directed to this students.

5. Conclusion

The study confirmed that physiotherapy and occupational students had good knowledge about COVID-19 while the attitude was poor. Also, no differences in knowledge and attitude between them.

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