

Assessment of Knowledge, Attitude, and Practice of COVID-19 among Benha Health Technical Institute Students

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Abstract

Background: The COVID-19 pandemic presents humanity with an extraordinary challenge. The rapid spread of the virus and the necessity of waiting for effective treatments or vaccines highlights the importance of changing human behaviour to contain the pandemic. **Objectives:** To assess the knowledge, attitude, and practices of COVID-19 among Benha Health Technical Institute (BHTI) Students. **Methodology:** This is a cross-sectional study that included 398 undergraduate and complementary education students of Benha Health Technical Institute. The study was conducted using a structured self-administered questionnaire regarding COVID-19. **Results:** As regard knowledge, the higher percentage of correct answers was for complementary education students in comparison with undergraduates. Regarding attitude, about half of both undergraduates as well as complementary education students showed agreement about the majority of attitude items. With respect to practices, there was low level of practicing the different preventive measures against the disease. **Conclusion:** Complementary education students had higher level of KAP in comparison with undergraduates.

Keywords: Behaviours, COVID-19, knowledge, paramedical students, practice.

1. Introduction

The COVID-19 pandemic presents humanity with an extraordinary challenge. The rapid spread of the virus and the necessity of waiting for effective treatments or vaccines highlights the importance of changing human behaviour to contain the pandemic [1].

In terms of symptoms, the WHO reported that more than 80% of COVID-19 patients showed mild symptoms and recovered without any medical intervention, approximately 20% of infected cases had a severe illness such as shortness of breath, septic shock and multi-organ failure, and it has been reported that an estimated 2% of cases can be fatal [2]. Recovery in mild cases occurred after 1 week, while in severe cases, death may be the fate [3].

Knowledge, attitude and practices (KAP) are an important cognitive key in public health regarding health prevention and promotion. It involves a range of beliefs about the causes of the disease and exacerbating factors, identification of symptoms, and available methods of treatments and consequences [4].

Preparedness to fight contagious diseases like COVID-19 starts with knowledge, positive attitude and safe practices. It is believed that confused perception and negative attitude towards an emerging infectious disease lead to unnecessary chaos and terror that aggravates the epidemic. The misconceptions and panic of the Chinese public during the SARS epidemic from 2002 to 2004 made them resistant to follow suggested preventive measures, culminating into rapid spread of the virus and hit China the most [5].

Both exaggerated and understated pandemic estimates can either fuel panic or a false sense of security among the general public [6]. Moreover, people's perception or interpretation of disease outbreaks influences their health care seeking behavior [7]

Understanding public perceptions and their responses to COVID-19 is therefore critical in the

ongoing planning and implementation of effective pandemic responses in low and middle-income countries, particularly by evaluating current public health messaging and communication strategies [8].

Objectives: The main objective of the study is to assess knowledge, attitudes, and practices of BHTI students toward COVID-19.

2. Material and Method

This current research paper adopted a descriptive cross-sectional study design to evaluate COVID-19 related KAP among undergraduate as well as complementary education paramedical students at Benha Health Technical Institute, Egypt. The study included 398 students collected between February and May 2021. A pre-coded, pre-designed self-administered questionnaire was used which was adopted from [9].

The sampling technique was stratified random sampling technique. The total target population was stratified according to their classes into different strata according to their grades and specialty and then, a proportional weighted sample was randomly selected from each stratum by using the same sampling fraction (0.111). The inclusion criteria was students in all grades at Benha Health Technical Institute.

Ethical and administrative approval

An approval from the Research Ethics Committee in Benha Faculty of Medicine was obtained (Code M.D 3-1-21). Additionally, an official permission was obtained from the Dean of BHTI to conduct this study. Furthermore, before participation, an informed written consent was obtained from all participants.

Data management:

All statistical work was carried out using SPSS, version 25 (SPSS Inc., Chicago, USA). A p-value ≤ 0.05 was considered statistically significant, and a p-value ≤ 0.01 was considered highly significant. Z- test was used to test the significant difference between one sample proportion.

3. Results

Figure (1) show that the range of age of the studied groups was between 18 to 45 years old. Female represented the greatest proportion of both

undergraduates and complementary education students (74.8% and 75.0%) respectively. The greatest percentages of study participants were from rural residence (82.7%).

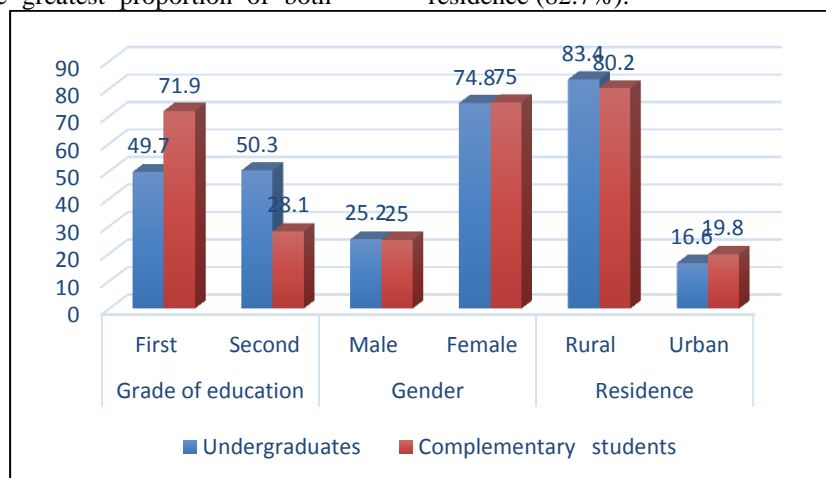


Fig. (1) Distribution of the studied groups as regard some socio-demographic characteristics.

Table (1) reveals the knowledge of both undergraduates and complementary education students. The table illustrates that there was statistically significant difference between undergraduates and complementary education students as regard their knowledge about the following items: the causative agent of COVID-19 infection, the main

clinical symptoms of the disease, mode of transmission of the disease (droplet), penetrating ability of COVID-19 of cloth masks and importance of isolation and treatment for controlling the disease (≤ 0.05). The higher percentage of correct answers was for complementary education students.

Table (1) Knowledge of the studied groups about COVID 19 according to educational category.

Group Knowledge Items	Undergraduates (No= 302)		Complementary education students (No= 96)		Total studied sample		Z test p value
	Correct answer		Correct answer		Correct answer		
	No	%	No	%	No	%	
Causative agent of COVID-19	192	63.6	73	76.0	265	66.6	≤ 0.05
The main clinical symptoms of COVID-19	285	94.4	95	99.0	380	95.5	≤ 0.05
Asymptomatic nature of the disease	201	66.6	59	61.5	260	65.3	> 0.05
Susceptibility of elderly to severe infection	100	33.1	30	31.3	130	32.7	> 0.05
The severity of COVID-19 in patients with chronic diseases	254	84.1	76	79.2	330	82.9	> 0.05
Children and teenagers should take preventive precautions to avoid acquisition of the disease	162	53.6	60	62.5	222	55.8	> 0.05
Even people with strong immunity can get infection	122	40.4	49	51.0	171	43.0	> 0.05
The ability of asymptomatic patients to disseminate the disease to others	185	61.3	66	68.8	251	63.1	> 0.05
Mode of transmission of the disease (Droplet)	216	71.5	80	83.3	296	74.4	≤ 0.05
The ability of the non-buried dead bodies of people with COVID-19 to spread the disease	183	60.6	63	65.6	246	61.8	> 0.05

The buried dead bodies of people with COVID-19 can't spread of the COVID-19 virus	124	41.1	41	42.7	165	41.5	> 0.05
Penetrating ability of COVID-19 of cloth masks	154	51.0	65	67.7	219	55.0	≤ 0.05
Mode of transmission of the disease (Air borne)	203	67.2	71	74.0	274	68.0	> 0.05
There is no effective drug for COVID-19	226	74.8	87	90.6	313	78.6	> 0.05
Avoiding crowded places help control the disease	272	90.1	92	95.8	364	91.5	> 0.05
Importance of avoiding travel across cities for controlling the disease	243	80.5	82	58.4	325	81.7	> 0.05
Importance of avoiding touching face for controlling the disease	239	79.1	81	84.4	320	80.4	> 0.05
Importance of isolation and treatment for controlling the disease	255	84.4	96	100.0	351	88.2	≤ 0.01

Table (2) clarifies that there was statistically significant difference between undergraduates and complementary education students as regard their attitude towards the following items: importance of keeping up with the government's call, all people with COVID-19 are those who violate the government's call in the efforts to prevent transmission of COVID-19 and importance of isolation of cases of COVID-19 in preventing the disease (p value ≤ 0.05).

Table (2) Attitude of the studied groups towards COVID 19 according to educational category.

Group	Undergraduates		Complementary education students		Total studied sample		Z test p value
	(No= 302)		(No= 96)				
	Agree		Agree		Agree		
Attitude Items	No	%	No	%	No	%	
Importance of keeping up with the information regarding the number of COVID-19 cases	163	54.0	58	60.4	221	55.5	> 0.05
Feeling worried or scared after knowing the number of cases	171	56.6	53	55.2	224	56.3	> 0.05
Importance of keeping up with the government's call	188	62.3	80	83.3	268	67.3	≤ 0.01
All people with COVID-19 are those who violate the government's call in the efforts to prevent transmission of COVID-19	65	21.5	11	11.5	76	19.1	≤ 0.05
Avoiding expressing negative stigma on people with COVID-19 infection	219	72.5	65	67.7	284	71.4	> 0.05
Importance of isolation of cases of COVID-19 in preventing the disease	205	67.9	78	81.3	283	71.1	≤ 0.05

Table (3) illustrates there was statistically significant difference between undergraduates and complementary education students as regard their practice of physical distancing (p=0.001). Complementary education students practiced social distancing more than undergraduates (42.7 % VS 25.2%).

Table (3) Practice of preventive measures against COVID-19 among the studied groups according to educational category.

Group	Undergraduates		Complementary education students		Total studied sample		Z test p value
	(No= 302)		(No= 96)				
	Always		Always		Always		
practice Items	Always		Always		Always		

	No	%	No	%	No	%	
Wearing a mask	158	52.3	56	58.3	214	53.8	> 0.05
Physical distancing	76	25.2	41	42.7	117	29.4	≤ 0.01
Using hand sanitizer	106	35.1	42	43.8	148	37.2	> 0.05
Hand washing with soap	198	65.6	60	62.5	258	64.8	> 0.05
Immediately change clothes before entering the house	112	37.1	44	45.8	156	39.2	> 0.05
Educating others about COVID-19	56	18.5	25	26.0	81	20.4	> 0.05
Eating vegetables and fruit	187	61.9	68	70.8	255	64.1	> 0.05
Having enough rest	126	41.7	32	33.3	158	39.7	> 0.05
practicing routine exercise	40	13.2	9	9.4	49	12.3	> 0.05
Taking vitamins or supplements	59	19.5	19	19.8	78	19.6	> 0.05
Cleaning house	150	49.7	57	59.4	207	52.0	> 0.05
Hand washing with soap more frequently	154	51.0	50	52.1	204	51.3	> 0.05

4. Discussion

The present results demonstrated that complementary education students had a significantly higher proportion of correct answers compared to undergraduates regarding the causative agent of COVID-19 infection (76.0% Vs 63.6%), the main clinical symptoms of the disease (99.0% Vs 94.4%), mode of transmission of the disease (droplet) (83.3% Vs 71.5%), penetrating ability of COVID-19 of cloth masks (67.7% Vs 51.0%), and the importance of isolation and treatment for controlling the disease (100.0% Vs 84.4%). The higher level of knowledge score and level among complementary education students can be attributed to their work experience as some of them were working in COVID-19 quarantine during the time of data collection.

The current study showed that 66.6% of participants knew that COVID-19 is a disease caused by coronavirus. This agrees with [10], a study conducted in India, who found that 83.0% of participants knew that COVID-19 and corona viral infection are the same. Another study conducted in Indonesia, [9] identified that only 39.0% of students knew that COVID-19 is a disease caused by coronavirus.

With respect to clinical manifestations of the disease, this present work illustrated that 95.5% of the study group correctly identified the main clinical symptoms of COVID-19, while only 65.3% of them were aware of the asymptomatic nature of the disease. This is comparable to the studies conducted by [11]–[15] in Egypt, Saudi Arabia, India, Philippines and Bangladesh respectively who illustrated that almost all of their participants (98.7%, 97.4, 86.7%, 97.1%, and 99.3% respectively) knew the main clinical features of COVID-19. Along with, [9], [16] who reported that 91.8% and 80.9% of participants knew that not all people infected with COVID-19 will develop symptoms of COVID-19. [11] revealed that 83.7 % and 92.2% of early years and final years students respectively correctly knew the asymptomatic nature of the disease. A cross-sectional study from Sudan [17], reported that only 27.7% knew the main

combination of clinical symptoms of the disease. While [18], an Indian study, explained that only 39.7% of students knew the asymptomatic nature of the disease. Asymptomatic infections refer to the positive detection of nucleic acid of SARS-CoV-2 in patient samples by reverse transcriptase- polymerase chain reaction (RT-PCR), but have no typical clinical symptoms or signs, and no apparent abnormalities in images, including lung computed tomography (CT) [19] To date, asymptomatic COVID-19 cases have been reported in many studies among adults[20]–[23], pregnant women [24], [25] children [26], [27], and health care workers [28], [29] .

To conclude, there was some differences in knowledge items between this current study and some other papers and this can be attributed to differences in the timing of data collection, differences in tool used and also it can be attributed to differences in the place from which the data was collected which depend largely on the extent to which each country had applied educational advertisements to improve the knowledge of its local citizen.

This study revealed that complementary education students showed higher percentage of agreement in comparison with undergraduates about the following items: importance of keeping up with the information regarding the number of COVID-19 cases (60.4% vs 54.0%), importance of keeping up with the government's call (83.3% vs 62.3%) and importance of isolation of cases of COVID-19 in preventing the disease (81.3% vs 67.9%). This is most likely because postgraduate students were emerging adults who pursue identity exploration, work toward independence, and have different roles to fulfill.

The present results demonstrated that complementary education students showed a higher proportion of practices of preventive measures against the disease in the majority of practice items and the difference between them and undergraduates was significant only with practicing physical distancing (42.7% Vs 52.2%). As stated before, undergraduates are younger and less knowledgeable than

postgraduates, and thus they are less likely to follow conscientious low-risk behavioral practices.

This study showed that 53.8% of the studied participants always wear a mask when they were in a crowded place. This agrees with [16], [30], [31] who found that 64.7%, 66.5%, and 30.7% of the study population respectively always wear a mask when leaving home. With interestingly higher percentages, [10], [32] claimed that 95.0% and 89.0% of their study participants respectively were used to wear masks frequently. [13], [33] stated that 91.0% and 98.7% of students respectively wear N95 masks frequently. Also, a study from Sudan showed that 72.6% of medical students identified that wearing masks during work in the hospital protects against the spread of the virus [17]. While [18] clarified that 73.15 % of students thought that wearing a surgical mask can protect people from COVID-19.

It has been found that wearing a mask is one of the most important preventive measures against COVID-19 [34]. Moreover, masks can mechanically reduce the transmission of respiratory droplets [35]. The low practice of wearing a mask might be due to the inability to afford its cost as well as its scarcity in the country at the beginning of the pandemic.

5. Conclusion

As regard knowledge, the higher percentage of correct answers was for complementary education students. Regarding attitude, about half of both undergraduates as well as complementary education students showed agreement about the majority of attitude items. With respect to practices, there was low level of practicing the different preventive measures against the disease.

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Declaration of interest statement

The authors declare that they have no competing interests.

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