Original Research

A CROSS SECTIONAL STUDY TO ASSESS THE KNOWLEDGE, ATTITUDE AND PRACTICE TOWARD COVID-19 AMONG THE ARTS AND SCIENCE STUDENTS IN FARASAN, KINGDOM OF SAUDI ARABIA

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Abstract: Coronavirus disease (COVID-19) is an infectious disease caused by a new variable of the Coronaviridae family. COVID-19 spreads primarily by contacting the virus either from a COVID-19-infected individual through coughing or sneezing or from COVID-19-contaminated surfaces. A Descriptive cross-sectional survey of 200 participants was conducted to explore the awareness, attitude, and practice of COVID-19 among the arts and science students studying at the University College of Farasan. Results: Of all the participants, 58% showed a moderate level of awareness, 70% presented a high attitude, and 56% presented an adequate practice regarding COVID-19. Significant positive correlation between awareness-attitude (r = 0.156, p-value < 0.001) and attitude-practice (r = 0.192, p-value < 0.001) were found. Most students with non-medical background agreed that the patient with COVID-19 could remain asymptomatic (p < 0.01) while considering the transmission route, the students from non-nursing background students were found more conscious (p < 0.01) that infection could spread through personal contact, respiratory droplets and possibly by feces. Despite the moderate public awareness, their attitude and practice were better. Therefore, public awareness must be improved to be prepared for epidemic and pandemic situations.

INTRODUCTION

During epidemics and pandemics, a gap in knowledge about the emerging disease can cause chaos and panic among the public. Dis-tributing the proper information can guide society through such events and increase epidemic preparedness that might occur in the future. In addition, negative attitudes and practices towards new infectious diseases can aggravate epidemics, resulting in pandemics. Awareness, Attitude, and practice have been studied in many previous epidemics such as swine influenza [1], Middle East Respiratory Syndrome (MERS) [2], and Dengue fever [3]. The World Health Organization (WHO) declared this outbreak as a global pandemic on the 12th of March, with the continuous increase in reported cases [4].

COVID-19 disease is caused by Severe Acute Respiratory Coronavirus 2 (SARS-CoV-2) [5]. The virus spreads between humans by coughing discharge that contaminates the surfaces. Asymptomatic individuals can highly transmit it during the virus incubation period [6,7,8]. The virus can last on surfaces for up to 5 days, depending on the type of surfaces [9,10,11]. Although infected people may be asymptomatic, others may develop flu-like symptoms, including fever and coughing, leading to deteriorating conditions in some cases [12]. The severity of symptoms has shown to be more in elderlies and those with underlying chronic health conditions, which complicated pneumonia, cytokine storm, and multi-organ failure [13].

As the risk of COVID-19 becomes more widespread, people should take steps to safeguard themselves from infection and limit its spread to others. Though the students from allied health sciences are not directly involved in managing

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COVID-19 patients, they can serve as information providers. They can sensitize community people about maintaining personal hygiene, symptoms of COVID-19, and how to prevent its spread. Students must possess the basic knowledge about novel Coronavirus and be able to clear the myths about COVID- 19.

Our study aims to assess the knowledge, perceptions, and practice of COVID-19 among allied health science students.

Objectives
1. To assess the knowledge about COVID 19 among allied health arts and science students.
2. To assess the attitude of COVID 19 among allied health arts and science students.
3. To assess the practice of COVID 19 among allied health arts and science students.
4. To correlate the knowledge, attitude, and practice of COVID 19 among allied health arts and science students.
5. To associate the knowledge, attitude, and practice scores of students with their demographic variables.

METHODOLOGY

Research Approach: Quantitative Research Approach
Research Design: Descriptive Cross-Sectional survey design
Population: Arts and Science allied health students studying in the University College of Farasan.
Samples: students from level 1-8
Sampling Technique: Non-Probability Purposive sampling technique
Sample Size: 200
The setting of the Study: University College of Farasan, Farasan Campus, Jazan University.

Tool for data collection:

A survey with 35 Questions (in the English language) was formulated. The survey questionnaire comprises four sections to collect data regarding demographic variables, knowledge, perception, and practices towards the COVID-19 pandemic. The knowledge section has 15 questions. These questions had three choices (True/False/Don't know) to answer. The attitude or perception section had ten questions. These questions had three choices (True/False/Don't know) to answer. The practice section had ten questions. These questions had three choices (Yes/No/Don't know) to answer.

Ethical considerations:
The official ethical approval will be obtained from the Scientific Research Ethics Committee - Jazan University and obtain permission from the Dean, University College of Farasan.

Data Collection Procedure:
A web-based cross-sectional survey study was conducted using a "Google Form" the students from 1st level to 8th level of Allied health students studying in University College of Farasan. After data collection, the education was given about general awareness, information sources, knowledge, and perceptions related to COVID-19 through the web-based lecture.

Data Analysis:
Descriptive statistic was applied to calculate proportions and frequencies. The chi-square test was used to investigate the level of association among study variables. The Pearson Coefficient formula assessed correlations.

RESULTS
Demographic Variables:
Out of 200 participants that filled out the web-based survey, 190 participants have given their consent with a response rate of 95%. Most of the study participants were 21 years (71.8%). Nearly half of the participated students were from levels 3 & 4 (37%). The majority (63.1%) of the students was not caring COVID-19 suspected or confirmed patients. The majority of the students had the primary source of knowledge about COVID-19 through Social media (81.6%). The highest percentage of the students were from the Nursing program (73.8%), and many of the students (41%) were residing in Jazan (Table 1).

Assessment of knowledge about novel Coronavirus among the students shows that most of the study participants (95.1%) correctly identified novel coronavirus, i.e., COVID-19. A high proportion of study participants (88.3%) provided the correct response, while 6.8% did not know about the time between catching the novel coronavirus and beginning symptoms. The majority of the students (96.1%) answered correctly about the symptoms of COVID-19. The majority (89.3% & 97.1%) of the participants correctly answered the high risk of old age people and all protectives' measures such as distancing, wearing masks, regular handwashing, avoiding crowd, and staying at home, respectively. Nearly 75% of the participants gave the correct answer about COVID 19 transmission and Social distancing. Only half of the

percentage (51.5%) answered pregnant women are more vulnerable to get the COVID-19 disease. More than two-thirds of the participants know that healthy food and drinking increase body immunity and resistance to COVID-19 (Table 2).

No	Knowledge aspects of COVID 19	True	False	Don't know
1.	COVID-19 is an infectious disease caused by the most recently discovered novel coronavirus in Wuhan, China.	95.1%	1%	3.9%
2.	The time between catching the novel coronavirus and beginning to have symptoms will be 14 days.	88.3%	4.9%	6.8%
3.	Fever, dry cough, tiredness, and body pains are the most common symptoms in COVID 19	96.1%	1.9%	1.9%
4.	The person infected with novel coronavirus definitely develops symptoms.	71.8%	10.7%	17.5%
5.	The majority of people (about 80%) who get COVID-19 becomes seriously ill and develops breathing problem	67%	10.7%	22.3%
6.	Old age people, and those with underlying medical problems like high BP, heart problems or diabetes, are more likely to develop serious illness.	89.3%	2.9%	7.8%
7.	People can also catch COVID-19 if they breathe in droplets from a person with COVID-19 who coughs out or exhales droplets	74.8%	23.7%	1.5%
8.	Social distance means stay more than 1 m (3 feet) away from a person who is sick.	78.6%	15.5%	5.8%
9.	COVID-19 can be transmitted through the air.	38.8%	35.9%	25.2%
10.	Regular hand wash, social distancing, avoiding crowd, wearing a mask and stay at home can protect the person from getting COVID-19	97.1%	2.9%	0
11.	The virus can infect a person more than once	63.1%	10.7%	26.2%
12.	Children cannot be infected with the virus that causes COVID-19	12.6%	76.7%	10.7
13.	Pregnant women are more vulnerable to get the COVID-19 disease	51.5%	14.6%	34%
14.	Treatment with antibiotics can kill the virus caused COVID-19 disease	36.9%	30.1%	33%
15.	Healthy food and drinking water increase a body's immunity and resistance to COVID-19.	81.6%	2.9%	15.5%

Table 1. Knowledge about Coronavirus among study participants (n = 190).

No	Attitude aspects of COVID 19	True	False	Don't Know
1.	COVID-19 virus CANNOT be transmitted in areas with hot and humid climates.	27.2%	44.7%	28.2%
2.	Taking a hot bath CANNOT prevent the novel Coronavirus disease.	47.6%	29.1%	23.3%
3.	The novel Coronavirus CAN be transmitted through mosquito bites.	18.4%	50.5%	31.1%
4.	Hand dryers are NOT effective in killing the novel Coronavirus.	39.8%	21.4%	38.8%
5.	Spraying alcohol or chlorine all over your body cannot harm the skin and mucous membranes.	22.3%	53.4%	24.3%
6.	Vaccines against pneumonia can protect against the novel Coronavirus.	32%	31.1%	36.9%
7.	Eating garlic helps in the prevention of infection with novel Coronavirus	50.5%	17.5%	32%
8.	Vitamin D & Vitamin C Foods/Supplementation are effective in preventing and treating the novel Coronavirus	63.1%	9.7%	27.2%
9.	Holding breath for more than 10 s is a test for COVID-19.	24.3%	35%	40.8%
10.	Medicines are available in the global market to prevent or treat the novel Coronavirus.	23.3%	51.5%	25.2%

Table 2. Attitude / Perception about Coronavirus among study participants (n = 190).

Over 70% of the respondents were in favor of attitudes towards limiting the spread of COVID-19. The majority of the participants (44.7%) believe that the COVID-19 virus CANNOT be transmitted in areas with hot and humid climates, while some (27.2%) of the participants do not agree with the statement. About half of the students (47.6%) were found to have a correct perception that Taking a hot bath CANNOT prevent the novel Coronavirus disease, and 63.1% rightly agreed that Vitamin D & Vitamin C Foods/Supplementation are effective in preventing and treating the novel Coronavirus. Many participants (50.5%) incorrectly believe that Eating garlic helps prevent infection with novel Coronavirus. Notably, one-third of participants believe that Hand dryers are NOT effective in killing the novel Coronavirus, and vaccines against pneumonia can protect you against the novel Coronavirus. 53% believed that Spraying alcohol or chlorine all over your body cannot harm the skin and mucous membranes. Half of the respondents do not believe that medicines are available in the global market to prevent or treat the novel Coronavirus (Table 3).

Over 80% of respondents agreed on the importance of staying at home during the pandemic, whereas 92% of the respondents agreed on cover the mouth and nose with a tissue or elbow when sneezing. More than two-thirds (79%) of respondents follow social distancing (>1 m) when you go and meet other people. The majority of them perform regular hand wash in their daily routine activities (85%) and wear masks when visiting a hospital or infected person wearing masks (93%). Around 60 % of the respondents practiced wrongly about visited crowded places, shake hands upon the meeting of friend's/family members/others, and touch their mouth, nose, and eyes routinely. Concerning participants' practice, 89% recommended sanitizing all groceries before usage, 77% recommended washing fruit and vegetables with soap and water.

No	Practice aspects of COVID 19	Yes	No	Don't Know
1.	Do you stay at home during this COVID-19 pandemic?	84.5%	11.7%	3.8%
2.	Do you cover your mouth and nose with a tissue or elbow when sneezing?	92.2%	2.9%	4.9%
3.	Do you follow social distancing (>1 m) when meeting other people?	78.6%	16.5%	4.9%
4.	Do you perform regular hand wash in your daily routine activities?	85.4%	11.7%	2.9%
5.	Do you wear a mask when you visit a hospital or infected person?	93.2%	3.9%	2.9%
6.	Have you traveled to any area affected with COVID-19?	23.3%	71.5%	4.9%
7.	Do you sanitize the surfaces which are suspected of infection exposure?	88.3%	4.9%	6.8%
8.	Have you recently been to a crowded place?	53.4%	41.7%	4.9%
9.	Do you give shake hand upon meeting of friends/family members/others?	54.4%	41.7%	3.9%
10.	Do you touch routinely your mouth, nose, and eyes?	65%	28.2%	6.8%

Table 3. Practice about Coronavirus among study participants.

Association of Demographic Variables:
Based on statistical analysis, significance with the participant background was observed in identifying novel Coronavirus, its origin, asymptomatic behavior, and transmission modes. The majority of students agreed that the patient with COVID-19 could remain asymptomatic ($p < 0.01$) while considering the transmission route, the students from non-nursing background students were found more conscious ($p < 0.01$) that infection could spread through personal contact, respiratory droplets, and possibly by feces.

Correlation between knowledge, attitude and practice:
Correlation between awareness-attitude was significant and positive ($r = 0.156$, p-value < 0.001). Also, there was a significant correlation between attitude-practice ($r = 0.192$, p-value < 0.001).

DISCUSSION
This study aimed to estimate the general level of awareness, practice, and attitude towards the emerging COVID-19 disease. The majority of the participants had good general awareness, attitude, and practice toward the virus. However, according to the participants' responses, less knowledge was detected in various aspects related to the virus's transmission, disease symptoms, vulnerable people, re-infections, incubation period, and practice. Since the initial outbreak of the COVID-19 disease in China, it has spread widely to various countries. According to the MOH update on the 20th of April 2020, the number of COVID-19 cases raised to 10,484 in Saudi Arabia, with the majority of cases 2210 in Riyadh. Many studies have reported the importance of awareness, attitude, and practice of society to reduce the spreading rate during epidemics and pandemics [14,15].

Similarly, lack of awareness contributes to undesirable attitudes and practices, which leads to negative impacts on infection-control16. This study found a significant positive correlation between awareness and attitude, indicating that the better the level of awareness was reflected in their attitude. The same was also true for the correlation between attitude and practice.

CONCLUSION

We discovered that the students are having adequate awareness about COVID-19. Also, it has been observed that most participants acquired information from social media, which is an unauthentic resource for obtaining evidence about the disease. Students should be informed about the authentic sources of information provided by global health authorities and the health ministry of respective countries. Our study finding also highlights the specific aspects of knowledge, perception, and practice where the partial or incorrect responses were noted. These areas were addressed through webinars to improve the understanding and correct the myths about COVID-19.

LIMITATION OF THE STUDY

- Firstly, as this is an online cross-sectional survey, there are chances of recall bias in information as well as the students may have looked up the answers to some of the questions before answering.
- Secondly, the survey was conducted among the students from health science backgrounds, so the findings cannot be extrapolated to all health care professionals.
- Lastly, as this is an internet-based online survey, responses from the regions without internet access may not be captured, leading to demographic selection bias.

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