

Knowledge, Attitude and Practices of Saudi Dental Hygiene Students Towards Novel Corona Virus Disease (Covid-19): An Online Survey

Research Article

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Abstract

Purpose: Healthcare workers involved in procedures, that generate aerosol or handling patient specimens, are associated with a high possibility of COVID-19 infection. Thus, this study was conducted to identify dental hygiene students' knowledge of various guidelines related to COVID-19, their attitude towards COVID-19, and to assess their practices regarding COVID-19 recommendations.

Methods: A cross-sectional questionnaire study was performed. All Dental hygiene students in Saudi Arabia were invited to participate in this study. Interns were excluded. An online version of pre-tested and validated questionnaire was used to test the KAP for COVID 19.

Results: The mean score for knowledge related questions was found to be 2.91 ± 1.59 , attitude related questions to be 2.84 ± 1.41 and for practice related questions to be 4.20 ± 1.36 . After converting the scores into percentages, any score $<60\%$ was categorized as poor score, 60-80% as average score and $>80\%$ as good score. Regarding the knowledge of Dental hygiene students towards COVID-19, they had poor knowledge with the score of 57.8%. Similarly, the attitude of Dental hygiene students towards COVID-19 was poor as the score was 56.5%. But the practice of Dental hygiene students towards COVID-19 was found to be good with the score of 83.4%.

Conclusion: The outcome of this cross-sectional study shows that most of dental hygiene students studying in Kingdom of Saudi Arabia are following good practices toward COVID-19 inspite of having poor knowledge and attitude.

Keywords: Gardner Syndrome; Osteoma; Odontomes; Impacted Teeth; Sebaceous Cyst.

Introduction

Coronavirus disease 2019 (COVID-19) is a pandemic that is caused by a novel human corona virus CoV. Sufficient research has stated that the COVID-19 can be transmitted from infected patients through saliva, inhalation of droplets (particles diameter $\geq 5 \mu\text{m}$) generated by coughing and sneezing, as well as by direct contact with oral, nasal and ocular mucous membranes.[1-3] Healthcare workers involved in procedures, that generate aerosol or handling patient specimens, are associated with a high possibility of COVID-19 infection.[4] Thus, the risk for cross-infection is high among dentists.[5] Dental hygienists are also at high risk as they also perform several aerosol-generating procedures, such as the removal of calculus and bacterial plaque. But usually, the people's subjective judgements lead to the work area risk perception. Thus, it is very important for the health workers to understand

the knowledge related to transmission, prevention, and protocols of COVID-19. This will subsequently reduce the crossinfection and will help them to work more cautiously and stressfree. To the best of our knowledge no study has been published regarding the assessment of knowledge, attitude and practices among the dental hygiene students in Kingdom of Saudi Arabia.

Thus, this study was conducted to identify dental hygiene students' knowledge of various guidelines related to COVID-19, their attitude towards COVID-19, and to assess their practices regarding COVID-19 recommendations.

Materials And Methods

A cross-sectional questionnaire study was performed. The questionnaire used for the study was pre-tested and validated among

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dental hygiene students of Qassim University, Saudi Arabia. Prior to the commencement of the study, ethical clearance was obtained from institutional ethical committee of Qassim University, Saudi Arabia. 30 dental hygiene students enrolled for the pilot study to assess the ease of understanding and clarity of the questions. Based on their feedback final questionnaire was prepared which consisted of 18 questions. An online version (Google forms) of the questionnaire was used to collect data from the participants.

All dental hygiene students from Kingdom of Saudi Arabia were invited to participate in this questionnaire based study. Interns were excluded from this study. The questionnaire was divided into two sections: the first section included a statement of anonymity and consent and also the socio-demographic details of the participants; the second section had closed ended items that measured KAPs related to COVID-19. The data were collected using an online questionnaire (Google forms). The questionnaire was sent to the students via email or phone. Counts and proportions were used to present all categorical variable data whereas means \pm standard deviations were used to present continuous variables.

Results

This study was conducted to assess and evaluate the level of KAPs regarding COVID-19 among dental hygienists in Saudi Arabia. This will help to determine their level of preparedness in screening and dealing with infected patients. Our questionnaire included questions that measured knowledge, attitude, and practice and was sent to dental hygiene students. There are seven dental hygiene colleges in the Kingdom of Saudi Arabia. The questionnaire was sent to 210 dental hygiene students in these seven colleges across Saudi Arabia. Finally, 148 completed responses were received, which were included for the final analysis. Thus, response rate of 70.47% was obtained. Table 1 shows the demographic data of the participants.

The questionnaire consisted of five knowledge related questions, five attitude related questions and five practice related questions. The students had to select from the given three options which

were Agree, Don't know or Disagree. Each correct answer was given 1 point and wrong answer was given 0 point. The mean score for Knowledge related, attitude related and practice related questions was calculated.

The mean score for knowledge related questions was found to be 2.91 ± 1.59 , attitude related questions to be 2.84 ± 1.41 and for practice related questions to be 4.20 ± 1.36 .

After converting the scores into percentages, any score $<60\%$ was categorized as poor score, $60-80\%$ as average score and $>80\%$ as good score. Table 2 shows the responses for each question.

Regarding the knowledge of Dental hygiene students towards COVID-19, they had poor knowledge with the score of 57.8%. Similarly, the attitude of Dental hygiene students towards COVID-19 was poor as the score was 56.5%. But the practice of Dental hygiene students towards COVID-19 was found to be good with the score of 83.4%. Table 3 shows Descriptive statistics of the KAPs toward COVID-19 (n = 148).

The results showed that most of the students responded appropriately for practice related questions. Whereas, most of the students lacked in the knowledge and attitude related questions.

Discussion

Various KAP studies have been performed on the population of Saudi Arabia. These studies identified the general people's knowledge, attitude and practice on COVID-19 in Saudi Arabia. [6-9] But to the best of authors' knowledge, this is the first study that investigated COVID-19-associated KAPs among dental hygiene students in Kingdom of Saudi Arabia. Coronavirus (COVID-19) is a new virus that has rapidly spread around the world. Many countries have seen huge number of cases and deaths within short period of time. The major challenges related to fighting this pandemic are largely related to matters concerning the proper knowledge and accurate practice for combatting the disease spread. Similar to most of the respiratory viruses, SARS-CoV-2 also spreads

Table 1. Demographic data of the participants.

Study variable	N (%)
GENDER	
· Male	109 (74%)
· Female	39 (26%)
INSTITUTION	
· Qassim university	55 (37.16%)
· King Saud university	29 (19.60%)
· King Abdulaziz university	9 (6.08%)
· Al Baha university	17 (11.48%)
· Prince Sattam Bin Abdulaziz university	12 (8.10%)
· Inaya Medical college	18 (12.16%)
· Mustaqbal university	8 (5.40%)
ACADEMIC YEAR	
· First year	33 (22.29%)
· Second year	63 (42.56%)
· Third year	52 (35.13%)

Table 2. Responses for each question.

Responses				
		Correct	Wrong	Total
Knowledge related questions				
Does exposing yourself to sun or temperatures higher than 390C prevent the corona virus disease (COVID-19).	n	102	46	148
	%	68.9	31.1	100
Does holding your breath for more than 10 seconds without coughing or feeling discomfort mean you are free from COVID-19.	n	79	69	148
	%	53.4	46.6	100
Can a hot bath prevent from COVID-19?	n	101	47	148
	%	68.2	31.8	100
Can COVID-19 be transmitted through mosquito bites?	n	77	71	148
	%	52	47.9	100
Are antibiotics effective in preventing and treating COVID-19?	n	69	79	148
	%	46.6	53.4	100
Attitude related questions				
Would you would go for COVID-19 test if you develop mild symptoms of fever & cold?	n	95	53	148
	%	64.2	35.8	100
Do you think lockdown has helped in preventing the spread of COVID-19?	n	77	71	148
	%	52	47.9	100
I would avoid 5G mobile networks to control spread of COVID – 19.	n	122	26	148
	%	82.4	17.6	100
Do you think mass testing will help in controlling COVID-19 cases?	n	60	88	148
	%	40.5	59.5	100
It is too dangerous to be a part of the frontline rescue team?	n	64	84	148
	%	43.2	56.8	100
Practice related questions				
I have read article (at least 1) regarding prevention of COVID-19.	n	110	38	148
	%	74.3	25.7	100
I always cover my mouth & nose with a tissue when I cough or sneeze.	n	129	19	148
	%	87.2	12.8	100
I regularly use alcohol based hand rub for hand hygiene.	n	116	32	148
	%	78.4	21.6	100
I wash my hands /or use hand rub after touching every patient.	n	131	17	148
	%	88.5	11.5	100
I consistently follow infection control protocols in the clinic.	n	131	17	148
	%	88.5	11.5	100

Table 3. Descriptive statistics of the KAPs toward COVID-19.

KAP parameters	N(%)
Knowledge total score (mean+SD)	2.91+1.59
Level of knowledge	
· Good	42.20%
· Poor	57.80%
Attitude total score (mean+SD)	2.84+1.41
Level of attitude	
· Good	43.50%
· Poor	56.50%
Practice total score (mean+SD)	4.20+1.36
Level of practices	
· Good	83.40%
· Poor	16.60%

from one to person to another through mucous secretion or saliva in the form of droplets, aerosols, or fomites.[10, 11]

Various theories have been proposed regarding the disease in the

last few months. As the disease is relatively new, not many literatures are available. Misinformation and myths have also been spreading fast among the people. Thereby it becomes difficult to work without causing unnecessary panic and stress. Thus, all the

health workers need to have correct knowledge regarding COVID-19 so that they can work efficiently on patients. Hence, this research was conducted to determine the KAP related to COVID-19 among dental hygiene students.

Most of the students in this present research were not aware about the disease and had poor knowledge and attitude regarding COVID-19. 31.8% students were unaware that COVID-19 can be transmitted through mosquito bites or not. Also, 37.8% students didn't know whether antibiotics are effective in preventing and treating the new corona virus (COVID-19) or not. Regarding mass testing, 42.6% students didn't know whether this will help in controlling the pandemic or not. Thus, it is very important to provide proper and correct knowledge to these students as they are also working in high risk area for disease transmission. Whereas, a cross-sectional study was conducted among Qassim University students in different medical fields and was found that they were well-informed of basic information and had positive attitudes and proactive practices toward COVID-19.^[12] The KAPs related to COVID-19 and clinical practice among dentists practicing in Saudi Arabia were also found to be satisfactory.^[13]

Although the present study showed poor attitude amongst the dental hygiene students, they showed good practice (83.4%) against this pandemic outbreak. A study done in China also showed good practice against this pandemic outbreak.^[14]

The good practice score observed in this study can be attributed to the student's infection control protocol observed in the clinical practice against spread of any infectious disease. Being the health-care workers, it is necessary for Dental hygiene students to have proper knowledge and attitude. With adequate knowledge they'll be able to impart correct knowledge to the patients and masses as public awareness of dealing with infectious respiratory diseases plays an important role in limiting the infection's spread.

Conclusion

The outcome of this cross-sectional study shows that most of dental hygiene students studying in Kingdom of Saudi Arabia are following good practices toward COVID-19 in spite of having poor knowledge and attitude. Institutions can overcome this by motivating continuous research and relying only on authentic published reports.

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