

Novel Coronavirus (COVID-19) Knowledge and Perceptions: A Survey of Dental students in King Khalid University, Abha, Saudi Arabia

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ABSTRACT

Background: This study was to investigate to evaluate the knowledge and perceptions among dental students about novel COVID-19 infection in the College of Dentistry, King Khalid University.

Materials and Methods: The current cross-sectional study consists of Sample of 400 (248 males and 152 females) dental students and interns in College of Dentistry King Khalid University, Abha, Saudi Arabia. Written informed consent was being obtained from the participants after explaining them the purpose of the study. Sampling method was including a simple random sampling method. A self-administered questionnaire is designed to evaluate the knowledge and perceptions of dental students about COVID-19 infection. Data were collected and analyzed.

Results: 6.9% of study subjects were of <20 years, 86% were of 20-25 years, 7% were 26-30 years, and 0% were >30 years. 248 (62.4%) and 152 (37.6%) were males and females, respectively for the total study samples. More than half of the subject (54%) said that they had attended lectures/discussions about novel coronavirus (CoVID-19). Also, 94.5% know that the incubation period of COVID-19 is 1-14 days; 72% felt that about recommended 40 seconds of hand-soap cleaning time would prevent COVID-19 transmission; 80% agreed that flu vaccination is sufficient for avoiding COVID-19.

Conclusions: This study concludes that the amount of Knowledge about COVID-19 amongst the Saudi dental surgeons was relatively satisfactory. Different kinds of awareness seminars and training programs should be conducted at the local level to improve the Knowledge and perceptions among dental surgeons. Educational interventions are urgently needed, and further studies are warranted.

Key words: Coronavirus, Viral infection, Dental students, Questionnaire, Transmission, Saudi Arabia

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INTRODUCTION

Coronavirus (COVID-19) infections are usually growing respiratory infections and are recognized to cause disease, which ranges from the typical

cold to acute severe respiratory syndrome (SARS) [1]. COVID-19 is a zoonotic pathogen which can be transmitted via animal-to-human being and human-to-human interaction [2]. The latest outbreak of novel coronavirus (COVID-19) in Wuhan Town, Hubei Province, China, emerged as a worldwide outbreak and considerable public ailment [3]. On 30 January 2020, the World Health Business (WHO) announced COVID-19, a public health crisis of global issue (PHEIC) [4]. As

of September 13, there were totally 28,637,952 confirmed cases, 23,881,682 were recovered cases, 7,498,955 were active cases and 9,17,417 deaths in the world [5].

COVID-19 spreads through human-to-individual transmission through droplet, feco-oral, and immediate contact and contains an incubation amount of 2-14 times [5]. Up to now, no antiviral therapy or vaccine has already been explicitly suggested for COVID-19. Consequently, applying preventive steps to regulate COVID-19 infection may be the most significant intervention. Medical employees (HCWs), including dentists, will be the primary sector in touch with individuals and are an essential origin of contact with infected cases in dental care clinical setup; therefore, HCWs are anticipated to be at risk of contamination. The WHO furthermore initiated many online workout sessions and components on COVID-19 in a variety of languages to strengthen preventive techniques, which includes increasing consciousness and coaching HCWs in readiness actions [6]. In several situations, misconceptions among HCWs possess delayed controlling efforts to supply necessary treatment [7], resulting in the quick pass on of illness in hospitals [8,9] and put patients' life at an increased risk. In this respect, the COVID-19 epidemic supplies a unique possibility to investigate the amount of understanding and awareness of oral doctors in this global wellness problems. Noval COVID-19 could be passed straight from individual to individual by respiratory droplets; emerging proof recommended that it can also be transmitted through getting in touch with and fomites. Furthermore, the asymptomatic incubation time period for individuals contaminated with 2019-nCov has been reported to become 1-14 times. After 24 days, people were documented; also, it was verified that those without signs and symptoms could spread the viral infection. Dental sufferers and professionals could be subjected to pathogenic microorganisms, which include viruses and germs that infect the mouth and the respiratory system. Dental hygiene configurations invariably carry the chance of 2019-nCoV infection because of the specificity of its methods, which involves a face-to-face conversation with patients, and regular contact with saliva, blood, along with other body liquids, and the dealing with of razor-sharp musical instruments. The pathogenic

microorganisms could be transmitted in dental care configurations through inhalation of airborne microorganisms that may stay suspended in the airflow for extended periods. Therefore, the aim of this study is to evaluate the knowledge and perceptions among dental students about novel COVID-19 infection in the College of Dentistry, King Khalid University.

MATERIALS AND METHODS

The current cross-sectional study consists of Sample of 400 (248 males and 152 females) dental students and interns in College of Dentistry King Khalid University, Abha, Saudi Arabia. Written informed consent was being obtained from the participants after explaining them the purpose of the study. Sampling method was including a convenience sampling method. The sample size was calculated by G*power version 3.1.9.2. It was revealed from the pilot study the correlation coefficient was 0.226, and power 95%, α error probability 5%; the sample size was 400. A self-administered questionnaire is designed to evaluate the knowledge and perceptions of dental students about COVID-19 infection in the College of Dentistry, King Khalid University. The inclusion criteria include dental students from college of dentistry, King Khalid University in Abha city. There are no exclusion criteria. Ethical approval for performing the survey was obtained from the Scientific Research Committee (IRB/KKUCOD/ETH/2019-20/057) of College of Dentistry, King Khalid University.

The questionnaire was formulated and comprised of two parts: The first portion includes the questions related to the demographic information of participants, such as age, sex, and studying year in dental course. The other part of the questionnaire comprised 13 questions with 'yes' and 'no' pattern, and the multiple-choice question was prepared, and piloting was done to obtain information about knowledge and perceptions of dental students about COVID-19 infection. A web-based cross-sectional survey study was conducted using a "Google Form" to obtain responses from dental students. The final survey link was distributed among the students in the form of "Google Form" via various media platforms such as, WhatsApp, Gmail, and Facebook.

Pretesting of questionnaire

A self-administered structured questionnaire is developed and was tested among a convenience sample of 10 patients, who was interviewed to gain feedback on the overall acceptability of the questionnaire in terms of length and language clarity, according to their feedback the questions were corrected. One question was developed in English and translated to Arabic. The final questionnaire was reviewed for face validity by the expert panel of the dental college and it was modified, as necessary. Cronbach’s alpha was calculated to be 0.8. Face validity was also be assessed before the start of the study.

Statistical analysis

Both descriptive and analytical statistical measurements was used to describe the main variables by SPSS 18 (IBM Corporation, Armonk, New York, USA) software. Chi-square, ANOVA, and Pearson’s correlation coefficient was used to compare the qualitative and quantitative variables. The statistical significance of the coefficients in the statistical analyses was tested at 0.05 (<=0.05) level.

RESULTS

The current cross-sectional study consists of a sample of 400 (248 males and 152 females) dental students and interns responded to the questionnaire. 6.9% of study subjects were of < 20 years, 86% were of 20-25 years, 7% were 26-30 years, and 0% were >30 years (Table 1). 248 (62.4%) and 152 (37.6%) were males

and females, respectively for the total study samples. Distribution of study samples according to a studying year of dental course were shown in Table 1.

Approximately 99% of participants agreed that they heard about Novel Coronavirus (COVID-19) (Table 2). More than half of the subject (54%) said that they had attended lectures/discussions about novel coronavirus (CoVID-19). Also, 94.5% know that the incubation period of COVID-19 is 1-14 days; 72% felt that about recommended 40 seconds of hand-soap cleaning time would prevent COVID-19 transmission; 80% agreed that flu vaccination is sufficient for avoiding COVID-19. However, most respondents agreed that the effective preventive methods of COVID-19 transmission in the dental clinic are hand soap cleaning, hand sanitizes, and personal protection (gloves, masks, and wrapping). When we asked about the participants' source of reliable information about COVID-19, the primary source of information is from social media (42.6%), news media, and official government websites (26%, respectively) (Figure 1). Most participants agreed (98.8%) that sick patients should share their recent travel history with a healthcare provider. When enquired about the route of COVID-19 transmission, the majority (71.8%) believe that it gets transmitted by direct fluid transmission (saliva, body fluid or blood) (Table 3). All the subjects agreed that educating people about COVID-19 is essential to prevent the spread of the disease.

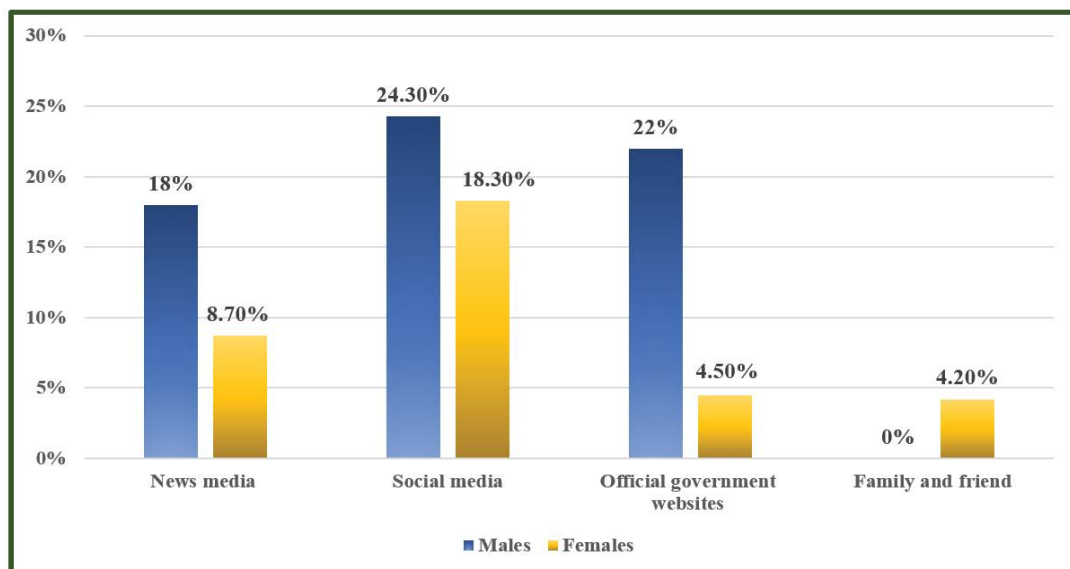


Figure 1: Distribution of the study subjects by knowledge of source of knowledge about novel coronavirus (COVID-19).

Table 1: Demographic characteristics of all the participants (n= 400).

Age	n (400)	%
< 20 years	27	6.90%
20-25 years	344	85.90%
26-30 years	29	7.20%
>30 years	0	0%
Gender		
Male	248	62.40%
Female	152	37.60%
Studying year of dental course		
First Year	16	4%
Second Year	20	5.10%
Third Year	38	9.40%
Fourth Year	75	18.60%
Fifth Year	97	24.30%
Sixth Year	65	16.30%
Dental Intern	89	22.30%

n=Number; %=Percentage

Table 2: Participants knowledge about COVID-19 (n=400).

Questions	Males (n)-200	%	Females (n)-200	%	Total (n)-400	%
Q. Heard about Novel coronavirus (COVID-19)?						
Yes	245	61.60%	151	37.40%	396	99%
No	3	0.80%	1	0.20%	4	1%
Q. Attended lectures/discussions about Novel Coronavirus (COVID-19)?						
Yes	100	24%	116	30%	216	54%
No	112	29%	36	17%	184	46%
Q. What is the incubation period of COVID-19?						
1-7 days	6	1.50%	2	0.50%	8	2%
1-14 days	232	58.40%	146	36.10%	378	94.50%
1-21 days	8	2%	4	1%	12	3%
I do not know	2	0.50%	0	0%	2	0.50%
Q. Route of COVID-19 virus transmission (choose one or more)						
Direct skin-skin transmission	99	24.50%	98	24.30%	197	48.80%
Direct fluid transmission (saliva, body fluids or blood)	147	36.40%	143	45.40%	290	71.80%
Droplet spread (sneezing or coughing)	235	67%	150	28%	385	95%
Airborne transmission (air or dust)	25	6.10%	20	5%	45	11.10%
Q. Personal protective equipment such as dental google, masks, and gloves are useful in protecting me from a patient suspected to have COVID-19 patients?						
Disagree	221	56.30%	141	34.60%	363	90.8
Agree	9	2.10%	3	1%	11	3.2
Neutral	18	4%	8	2%	26	6

n=Number; %=Percentage.

Table 3: Participants knowledge about COVID-19 (n=400).

Questions	Males (n)-200	%	Females (n)-200	%	Total (n)-400	%
Q. What are methods of COVID-19 transmission prevention in dental clinics. (choose one or more)						
Hand soap cleaning	248	62.40%	151	37.40%	399	99.80%
Hand sanitizers	248	62.40%	152	37.60%	400	100%
Personal protective equipment (gloves, masks and wrapping)	200	50%	108	26.20%	308	76.20%
Pre-operational chlorhexidine mouth rinse	11	2.70%	11	2.70%	22	5.40%
Pre-operational hydrogen peroxide mouth rinse	5	1.20%	0	0%	5	1.20%
Rubber dam isolation	41	10%	29	7.30%	70	17.30%
Clinic surface disinfection	200	50%	64	15.30%	264	65.30%
Adequate ventilation	123	30.30%	123	30.30%	246	60.90%

Isolated clinic	109	27%	109	27%	218	54%
Q. How long is the recommended hand-soap cleaning time to prevent COVID-19 transmission?						
About 20 seconds	22	5.80%	14	3.40%	36	9.20%
About 40 seconds	181	45.90%	110	26.60%	291	72.50%
About 60 seconds	45	10.70%	28	7.60%	73	18.30%
I do not know	0	0%	0	0%	0	0%
Q. Flu vaccinated is sufficient for preventing COVID-19?						
Yes	208	52.40%	112	27.60%	320	80%
No	40	10%	40	10%	80	20%
Q. Sick patients should share their recent travel history with healthcare providers.						
Yes	244	63.30%	148	36.50%	392	98.8
No	4	1.10%	4	1.10%	8	2.2
Q. COVID-19 symptoms often resolve with time and do not require any special treatment?						
Yes	227	57.10%	131	32.30%	358	89.40%
No	21	5.30%	21	5.30%	42	10.60%
Q. Educating people about COVID-19 is important to prevent the spread of the disease?						
Yes	248	62.4	152	37.6	400	100%
No	0	0	0	0	0	0%

n = Number; % = Percentage.

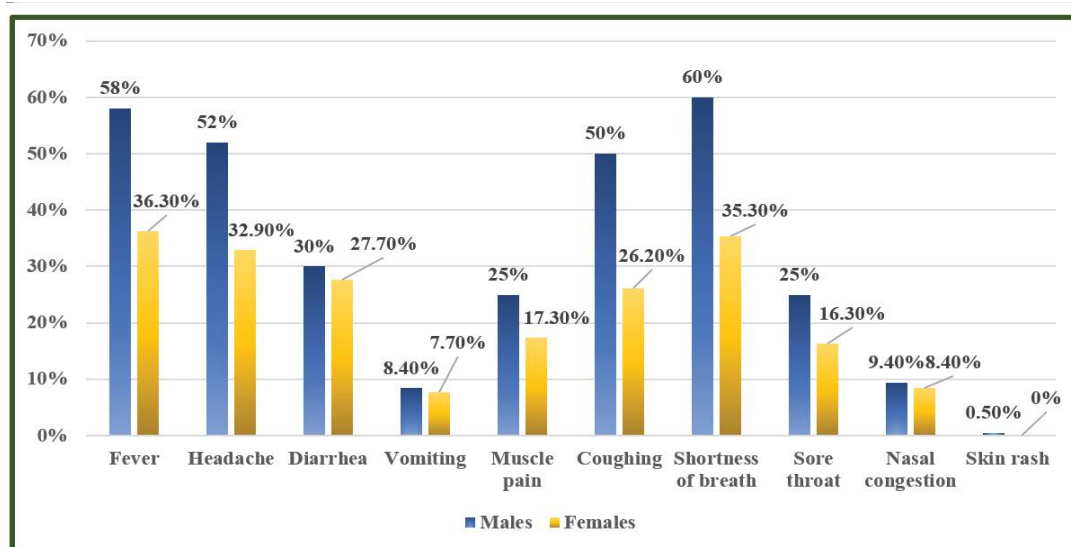


Figure 2: Distribution of the study subjects by knowledge of Signs and symptoms of COVID-19 virus infection.

DISCUSSION

Knowledge and awareness of COVID-19 differ across dental surgeons. Our research uncovered that dentists possess enough understanding of COVID-19 furthermore demonstrated a good awareness of the avoidance of COVID-19 transmission. A considerable percentage of study individuals had been conscious and experienced standard information about COVID-19 About 94.5% of contributors correctly recognized novel Coronavirus and provided the correct answer about its incubation period. Whereas research carried out among wellness treatment employees demonstrated that just 36.4% effectively recognized the incubation period of COVID-19 i.e. 1-14 days [10]. Other cross-sectional studies carried out in China,

Iran, and Pakistan reported 66.40%, 85.4%, and 96.38% appropriate replies about the incubation period, respectively [11-13]. Details about the incubation period would end up being useful to recognize the suspected situations and to give clinical treatment on an earlier phase. In this research, even more than fifty percent (71.8%) of the learners understood the transmission of COVID-19. In comparison to that, research carried out by Abdelhafiz et al. mentioned 95.9% of respondents correctly identified the transmission modes of novel Coronavirus [12]. Most individuals (60%) inside our research had good knowledge about the signs and symptoms of COVID-19 situations (Figure 2).

On the other hand, 98.63% and close to 90% of participants of a Chinese and Egypt study

precisely recognized the signs and symptoms of COVID-19, which is compared to high than our research outcomes [12, 14]. It is essential that individuals need to become informed about the most typical as well as severe signs and symptoms of COVID-19 infections by means of authenticated resources to prevent the misunderstanding. Nearly almost all of our research individuals understood about the methods that need to use for the avoidance of COVID-19 in the dental hospital-like as washing hands with soap (99.8%), use of alcohol-based sanitizer (100%), staying away from individual get in touch with and use of personal safety equipment (76.2%). This finding is like the finding of studies conducted between health care employees (85.6% and 98.31%) [10,11] and dental students (98.6% and 93.8%) [12,13]. Most individuals (90.8%) consider that wearing surgical hand protection and encounter cover-up may protect dental surgeons from getting infected with COVID-19 sufferers. Opposite to our outcomes, just 37.8% and 29.7% of individuals from the US and UK agree with the statement [15]. About 80% of the topics explained that vaccination is adequate for the avoidance of COVID-19, which is the wrong conception. Similarly, in a study performed amongst health care employees, around 90% thought that flu vaccination would be not enough in stopping COVID-19. A cross-sectional research carried out between medical and nonmedical learners in Jordan reported that 89% and 78.9% respondents understood that there is no vaccine or particular therapy readily available for COVID-19 [16].

If individuals have essential details about the strategies of transmission of the infection, that is, by direct get in touch with an unwell individual, including patients' family members and healthcare providers, people at more serious of infections during a period of suspected break out, the older and have to get their normal vaccines to assist increase their immunity [17]. The Saudi Health Ministry offers recognized the hazards of this pandemic. They are usually using incredible procedures to fight this circumstance. Interest in the human population education and learning concerning the settings of transmission, preventive strategies, and therapy choices are usually of almost significance. The common COVID-19 symptoms consist of acute respiratory disease syndrome, which includes shortness of

breath, fever, cough, weakness, and diarrhea. For some individuals, it may end up being even more severe and might result in pneumonia or breathing difficulty. Even more seldom, the illness can be deadly. Old individuals and individuals with pre-existing clinical circumstances (like diabetes and heart condition) appear even more susceptible to the disease and grew to become significantly sick. Presently, there are usually no remedies accessible for COVID-19 disease [9]. Many individuals with specific individual coronavirus disease will recuperate on their very own. Clinical management needs the well-timed execution of recommended interventions for infections, control and prevention, and supporting therapy for the complications, which includes sophisticated body organ support if pointed out. To time, no antiviral treatment or vaccine has already been clearly suggested for COVID-19. As a result, using precautionary methods to handle COVID-19 contamination is usually a critical intervention. The WHO furthermore started many online exercising programs and components on COVID-19 in different languages to improve precautionary methods, which includes increasing recognition and training healthcare individuals in readiness activities [18]. Nevertheless, understanding and training primary care doctors do not vary considerably based on some other personal features (e.g., age group and sex).

In this study, the gathered information could become utilized as baseline information to notice general public viewpoint and reaction in the situation of a potential break out of contagious illnesses in Saudi Arabia. This growing pandemic will end up being a stress check for the present health system, which includes those of industrialized nations. The appearance of this virus gives a chance for the open public and clinical wellness experts to battle in oneness towards this typical threat. As the worldwide danger of COVID-19 proceeds to emerge, even more, substantial attempts through academic promotions that focus on health specialists and the broader populations beyond borders are usually urgently required.

CONCLUSIONS

This study concludes that the amount of Knowledge about COVID-19 amongst the Saudi dental surgeons was relatively satisfactory.

Different kinds of awareness seminars and training programs should be conducted at the local level to improve the Knowledge and perceptions among dental surgeons. Educational interventions are urgently needed, and further studies are warranted. Furthermore, a solid training advertising campaign structured by the Ministry of Health offers carried out an essential part in enhancing COVID-19 virus contamination knowledge. Furthermore, carrying out tight infection-control procedures in all the hospital wards under all instances is definitely quite required. But long-term sustainable privileges will only be possible individuals residing in the Kingdom of Saudi Arabia are usually informed on the management and control of disease at the local level.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this article.

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