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KNOWLEDGE, ATTITUDE, AND BEHAVIOR OF COVID-19 AMONG DENTAL STUDENTS AT NORTH INDIA DENTAL COLLEGE- A QUESTIONNAIRE SURVEY

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ABSTRACT

Background: The world is affected by the Corona Virus Disease 2019 (COVID-19). Because of their direct contact with patients, health workers, especially dentist, play critical roles in the prevention of the COVID-19 outbreak through proper care and preventive procedures. **Objectives:** This study aimed to measure the awareness level of dental students in North India Dental college, during the current COVID-19 outbreak. **Methods:** A self-administered questionnaire containing knowledge questions was distributed to 340 participants to complete. **Results:** More than half of the dental students (56.5%) had good knowledge about sources, transmission, symptoms, signs, prognosis, treatment, and mortality rate of COVID-19. The sources of information for the dental students were the World Health Organization and the Ministry of Health (55.29%), social applications (48.23%), and media (42.35%). **Conclusions:** Dental students had almost good knowledge of COVID-19. However, the WHO and the Ministry of Health still must provide more information for the medical staff for better control of the infectious disease.

KEYWORDS: Prevention, Coronavirus, Direct Contact, COVID-19.

INTRODUCTION

Coronaviruses (CoV) infections are emerging respiratory viruses and known to cause illness ranging from the common cold to severe acute respiratory syndrome (SARS). CoV is zoonotic pathogens that can be transmitted via animal-to-human and human-to-human.

Multiple epidemic outbreaks occurred during 2002 (SARS) with ~800 deaths and 2012 (Middle East Respiratory Syndrome: MERS-CoV) with 860 deaths. Approximately eight years after the MERS-CoV epidemic, the current outbreak of novel coronavirus (COVID-19) in Wuhan City, Hubei Province of China, has emerged as a global outbreak and significant public health issue.

On 30 January 2020, the World Health Organization (WHO) declared COVID-19 as a public health emergency of international concern (PHEIC). Astonishingly, in the first week of March, a devastating number of new cases have been reported globally, emerging as a pandemic. As of 9 March 2020, more than 110,000 confirmed cases across 105 countries and more than 3800 deaths have been reported.

The COVID-19 is spread by human-to-human through droplets, feco-oral, and direct contact, with an incubation period of 2-14 days. So far, no antiviral treatment or vaccine has been recommended explicitly for COVID-19. Therefore, applying the preventive measure to control COVID-19 infection is the utmost critical intervention. Healthcare workers (HCWs) are the primary section in contact with patients and are an important source of exposure to the infected cases in the healthcare settings, thus, expected to be at a high risk of infections.

By the end of January, the WHO and CDC (Centers for Disease Control and Prevention) have published recommendations for the prevention and control of COVID-19 for HCWs. Indeed, the WHO also initiated several online training sessions and materials on COVID-19 in various languages to strengthen the preventive strategies, including raising awareness, and training HCWs preparedness activities.

In several instances, misunderstandings of HCWs delayed controlling efforts to provide necessary treatment, implicate rapid spread of infection in hospitals, and also may put the patients' lives at risk. In this regard, the COVID-19 epidemic offers a unique opportunity to investigate the level of knowledge, and perceptions of dental students during this global health crisis. The purpose of this study was to assess the

knowledge, attitude, and behavior of the dental students concerning COVID-19 that is a helpful approach to upgrade the prevention and control procedures in similar situations using past preventive efforts.

MATERIAL AND METHODS

To prevent the 2019-nCoV outbreak through droplets and contact, we used online software to design an electronic web-based questionnaire for collecting data over 80 hours (March 20, 2020, to March 31, 2020). The questionnaire was available to the participants through social media (WhatsApp and Instagram). Our study participants included dental student and participation in this study was voluntary and the identification information of participants was not recorded anywhere on the questionnaire.

The questionnaire was divided into three different parts. The first part included demographic data of the participants (sex, age, education level, and work experience).The second part evaluated the dental students' anxiety regarding their or their family infection with 2019-nCoV. The third part of the survey evaluated the knowledge of participants about COVID-19.

In this part of the questionnaire, according to the information and recommendations of the WHO about the virus, we asked for the knowledge of participants towards 2019-nCoV sources, transmission, symptoms, signs, prognosis, treatment, and mortality rate (four Yes/No or I don'tknowquestions and eight multiple-choice questions). Our questionnaire had two questions about the role of dental students in reducing the prevalence of COVID-19.

The knowledge scores ranged from 7 to 24 and a score of less than cutoff (< 16) was designated as acceptable knowledge and more than cutoff (_ 16) was regarded as good knowledge.

Data Analysis

The coded data were analyzed using SPSS 22 and the forms with considerable missing data were excluded. Descriptive statistics were used to describe the quantitative and categorical variables. Continuous variables were expressed as mean _ standard deviation (SD) and the *t* test at the 0.05 significance level was used to compare different factors between different groups.

RESULTS

Demographic Characteristics of Participants

Table 1 shows the demographic characteristics of the participants. Out of 340 respondents, 292 (85.9 %) were female. More than 75% (256 persons) of the respondents were in the group of less than 40-years-old and 22% (76 persons) were aged more than 40 years. Concerning the education level, 44 out of 340 (56.3%) participants had a 3 year, more than half of them (67%) had final year, and 20% had Intern students.

Table 1: Demographic Characteristics of Participants (N = 340)

Variables		Number of Respondents (%)
Sex	Male	48 (14.1)
	Female	292 (85.9)
Age	Less than 40 years	184 (75.3)
	More than 40 years	76(22.4)
Education level	3 years	44 (12.9)
	Final year	228 (67.1)
	Intern	68 (20.0)

None of the participants had COVID-19 or have had diagnostic tests and only one (1.17%) person knew some people in her/his family who were infected with 2019-nCoV (Table 2).

Table 2: Number and Percentage of Corona Distribution (N = 340)

	Yes, No. (%) No,	No, No. (%)
Being affected by the virus	0 (0)	340 (100)
Having done diagnostic tests	0 (0)	340 (100)
Knowing someone affected by the virus	1(17.1)	339 (83.98)

Knowledge Level of Participants

The overall knowledge score of dental students was 16.35 ± 3.3. About 18.82% of the respondents knew the coronavirus family before the 2019-nCoV infection begins. Social applications were the first resources (52.94%), followed by the Ministry of Health, theWorld Health Organization, and the media (51.72%). The important point is that the World Health Organization and the Ministry of Health were the most common sources of information about 2019-nCoV (55.29%), followed by social applications (48.23%), and media (42.35%). The majority of the respondents (94.11%) regarded COVID-19 as contagious and 47.05% knew initial related symptoms such as fever and cough, and 12.94% of them knew advanced symptoms such as dyspnea.

Moreover, 85.88% of the Dental students had correct information about the source of infection, while 14.12% did not have the correct information. Besides, 68.23% of the participants had the best awareness of prevention methods and 31.77% had lower responses. In addition, 20% of the respondents were aware that the period of incubation for COVID-19 is about 2 - 28 days, while 58% answered 2 - 18 days. Assessing the scores of questions showed that the mean score of knowledge was 16.35±3.3 (out of 96); 56.5% of them had satisfactory knowledge (score 17.87 ± 1.98; more than the cutoff point) and 43.5% had a knowledge score of lower than the cutoff point (score 11.88±2.5).

The stress level (on a 1 - 10 scale) did not have a significant correlation with both sex and work experience. Also, we found no significant correlation between knowledge, work experience, and education level. Finally, 75.29% agreed that healthcare workers should be more involved and 92.94% agreed that their information should be updated to reduce the prevalence of the infection, while others did not.

DISCUSSION

Nowadays, COVID-19 is a life-threatening agent with the worldwide spread and it has become an international concern. This disease was first reported on 12 December 2019 from Wuhan.[1] Due to the virus outbreak[4], more than 150 countries are currently infected and this virus's pandemic is a global emergency.[7] Health workers, especially dentist, have close contact with infected patients and have a decisive role in infection control.[8] In our country, India, as one of the top 10 countries that have the highest incidence of infection, assessing the level of dental students' information about COVID-19 can be an effective step in controlling the disease. The current study of 340 dental students showed their anxiety for themselves and their family affliction with COVID-19.

Haung and Zhao in a study conducted at the time of the COVID-19 outbreak in China found high levels of anxiety among healthcare workers compared to others.[9] In another study in Saudi Arabia, a high level of anxiety about MERS infectious disease was shown in medical students.[10] The probable reasons for almost high anxiety may be the worry about being infected, the difficulty in the control of the epidemic, and the shortage of medical facilities across the country.

This study showed that the awareness of this sample of dental students was good regarding COVID-19 infection during the current outbreak so that more than half of (56.5%) the dental students had good knowledge (more than the cutoff point) about the diseaseandinterestingly, mostof them rated their information as high as 6.12 (range of 1 - 10).

Having sufficient knowledge may reflect the successful distribution of information about COVID-19 by different media. These results are in line with a study that revealed good knowledge and positive attitude among healthcare workers towards MERS[11] and also consistent with another study by Alqahtani[12] among 418 health college students in Najran, Saudi Arabia.

Our results showed that dental students obtained their information through various media such as credible websites, WhatsApp, and TV. The widespread use of the internet and its availability to wider sectors of society have made it a major source of information for the population and dentist as a member of the population use this information source as others do. Similar to our findings, other studies reported that participants usually obtained their information about infectious diseases through the internet and watching TV.[13-15]

The total knowledge score was not affected by age and education level and it was not significantly different between dental students with less or more work experience. In line with our study, the results of north India College students from different majors and different educational backgrounds did not show the significant effect of age and education level on their information.[7] In this regard, the generalized overbreak and high rate transmission of COVID-19 in the world might have increased the nurse's attention and knowledge of this pandemic disease.

CONCLUSIONS

Dental students had almost good knowledge about COVID-19. However, more information still must be provided by the WHO and the Ministry of Health for medical staff to mediate the better control of the infectious disease.

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