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Original Research Article

Prevalence of COVID-19 infection among dental and nursing students in Alappuzha

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ABSTRACT

Background: The Corona Virus (SARS-COV2) is one of the major pathogens that affect the human respiratory system. As it spreads via droplets, healthcare workers are at increased risk of acquiring the infection. Nursing students who are exposed to the hospital setting during their clinical postings are prone to infection because they may provide care to patients who are suspected of or diagnosed with COVID-19 infection. In dentistry, the use of hand pieces and ultrasonic instruments during dental procedures unavoidably result in generation of blood and saliva droplets. Objective was to estimate the prevalence of COVID-19 infection among Dental and Nursing students of Government dental college and nursing college, Alappuzha.
Methods: A cross sectional study was conducted in Dental and Nursing students of Government TD Dental College and Nursing College, Alappuzha in November 2021. Convenient sampling was done and persons who were willing to take part in the study were distributed with a pretested questionnaire via Google Form and data was collected and analysed.
Results: Out of the 174 study participants, 77 were Dental students and 97 were Nursing students, 33% of Dental students and 36% of Nursing students reported of being infected with COVID-19 virus. Significant association was obtained between COVID-19 infection and contact with Covid positive case.
Conclusions: Prevalence of COVID-19 infection among Dental and Nursing students was 35.10%. Prevalence of COVID-19 infection among Dental students and Nursing students were 33% and 36% respectively.

Keywords: COVID-19 infection, Nursing students, Dental students

INTRODUCTION

Corona virus (SARS-COV 2) is one of the major pathogens that primarily targets the human respiratory system. They have been previous outbreaks of corona virus which include the severe acute respiratory syndrome (SARS-CoV) and Middle East Respiratory Syndrome (MERS-CoV) which have also been characterized as great public health threats. In December 2019, an outbreak of a novel beta corona virus disease 2019 (COVID-19) began in Wuhan, China's Hubei province. By now the virus has spread all around the world and disrupted all aspect of human life. The symptoms of SARS-CoV are similar to the previously known corona virus infections, these include fever, dry cough, fatigue and this SARS-CoV has a higher spreading nature. The virus could spread via respiratory

droplets and contaminated surfaces through the mucus membranes of mouth, eyes, nose and even via feco-oral route. This highly contagious nature of virus has made many medical Institutions to cancel all elective procedures to reduce the risk of contagion. In facing the global pandemic of COVID-19, nurses are the primary care givers for COVID-19 patients. Evidence has given by several Investigators that taking care of infected individual increase the risk of acquiring COVID-19.[1] Nursing students who are exposed to the hospital setting during their clinical practice course work are prone to infection because they may provide care to patients who are suspected of or diagnosed with COVID-19 infection. Hence, as future healthcare providers, nursing students need more comprehensive knowledge and skills to deal with the epidemic and spread of disease which may improve the country's ability to respond to pandemic.[2]

In dentistry, the use of hand pieces and ultrasonic instruments during dental procedures unavoidably result in generation of blood and saliva droplets. Consequently, their droplet could contaminate the dental instruments and surrounding environment, hence both the dental practitioners and patients could be at risk of being infected with COVID-19. Besides, the dental practitioners could be infected with SARS-COV2 virus, unnoticeably, and become carriers of virus. As a result, the dental services were limited to the emergency and urgent cases during the early days of pandemic. Therefore, strict precautionary protocols must be performed during the pandemic to reduce the risk of infection.[3] The purpose of this study is to evaluate the prevalence of COVID-19 infection among DENTAL AND NURSING students of Government td dental college and nursing college by conducting online questionnaire along with an aim to spread awareness on how to prevent and reduce transmission.

Objectives

Objective was to estimate the prevalence of COVID-19 infection among dental and nursing students of Government dental college and nursing college, Alappuzha.

METHODS

A cross sectional study was conducted in Dental and Nursing students of Government TD dental college and nursing college, Alappuzha in November 2021. Convenient sampling was done and persons were distributed with a informed written consent and pretested questionnaire via Google Form. Those who gave consent filled the questionnaire and those who did not consent were excluded from the study. The data was collected from 97 nursing students and 77 dental students. The data was coded and entered in Microsoft Excel 2007 spreadsheet and analysed using SPSS version 27. The descriptive statistical methods like frequencies and percentages were used. Inferential statistical methods like Chi-square test were used to find the association of COVID-19 infection with course studied, history of contact with COVID-19, reuse of mask, mask storage, face shield use, hand sanitiser use, use of gloves and vaccination against COVID.

RESULTS

A total of 174 students in Government nursing college and dental college of Alappuzha were studied. Out of which 97 (55.7%) were nursing students and 77 (44.3%) were dental students. Majority (82%) were hostellers.

Table 1: Practice of COVID appropriate behaviour in nursing and dental students.

Personal protection	Yes (%)	No (%)
N95	87.4	12.6
Habit of reusing mask	77	23
Proper keeping used mask	25	75
Use of face shield	42	58
Use of sanitizer while in clinics	90.8	9.2
Handwash after contact with patients	82.2	17.8
Use of glove during clinical posting	93.7	6.3
Completely vaccinated	97.7	2.3

Table 2: Factors associated with COVID-19 infection in nursing and dental students (n=61).

Factors	COVID-19 infected N (%)	P value
Contact history with COVID-19 positive prior to infection	24 (39.3)	<0.001
Nursing course	34 (55.7)	0.999
Habit of reusing mask	48 (78.7)	0.699
Properly envelope and store mask	13 (21.3)	0.755
Face shield use	25 (41)	0.846
Hand sanitizer in clinic	56 (91.8)	0.738
Always use gloves in clinic	29 (47.5)	0.133
Fully vaccinated against COVID-19	58 (95.1)	0.090

There were no comorbidities in 97% of the study participants. All the students were using masks. There were 152 students (87.4%) using N95 mask, 11 students (6.3%) using triple layer mask, 9 students (5.2%) using double layer mask and 2 (1%) students using cloth masks. More than three-fourth (77%) had the habit of reusing the mask. The (Table 1) shows the practice of COVID appropriate behaviour in nursing and dental students. Only one-fourth students had the habit of properly keeping the used mask. There were 42% students who used face shield. Majority (98.1%) used sanitizers while in clinics and 82.2% did hand washing after contact with patients. Majority (93.7%) used gloves during clinical positing.

There were 97.7% students who were completely vaccinated against COVID-19 and 98% among them took Covishield vaccine.

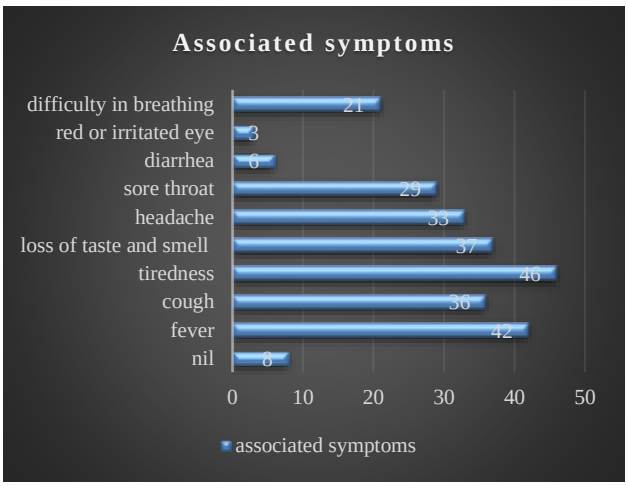

Figure 1: Symptoms of COVID-19 in COVID infected nursing and dental students.

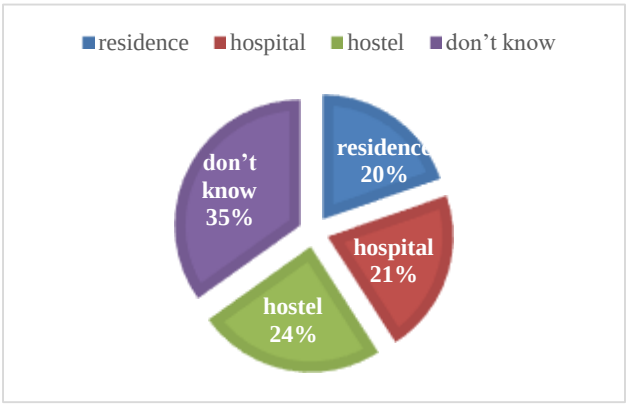

Figure 2: Sources of infection in COVID-19 infected nursing and dental students.

The prevalence of COVID-19 infection in the nursing and dental students of Government nursing college and dental college were 35.1%. There were 36% infected nursing students and 33% infected dental students. Out of the 61 COVID-19 infected, 49 students were isolated in home and 12 were admitted in hospital wards. Only 1 student required ICU admission. The most common symptoms in the COVID-19 infected of our study population depicted in (Figure 1) were tiredness (75.4%) followed by fever (68.85%), loss of taste and smell (60.65%), cough (59%), headache (54%), sore throat (47.5%). The most common associated symptom was tiredness (18%), fever (16%), cough (14%), loss of taste and smell (14%), headache (13%), sore throat (11%), difficulty in breathing (8%). Majority (35%) COVID 19 infected do not know their source of infection, 24% of the infected students reported their source as hostel, 21% reported their source as hospital and 20% reported their source as residence as shown in (Figure 2). The factors associated with COVID 19 are depicted in (Table 2). There is statistically significant association between COVID-19 and contact history with COVID-19 patient before infection ($p<0.001$).

DISCUSSION

In our study conducted among nursing and dental college students in Government nursing college and dental college Alappuzha, the prevalence of COVID-19 infection was 35.1% which was higher than the Jessy et al study conducted in Kerala (19.1%).[4] This was higher than the reported COVID infected among health care workers in US study (0.9%), French study (1.35%), Iran study (1%), Qatar study (10.6%) and Mumbai study (11%).[3-8] The most common symptoms of COVID positive students in our study were tiredness (75.4%) followed by fever (68.85%), loss of taste and smell (60.65%), cough (59%), headache (54%), sore throat (47.5%). The source of COVID infection was hospital in 20% positive students which was lower than that of Iran study (45.9%).[3] In a similar study in Kerala the symptoms were cough (88%), loss of taste (81.4%), sore throat (87%), fever (81.4%) and rhinorrhoea (80%).[4] In our study, the hospitalisation was done in 19.7% COVID infected students and 1.6% required ICU admission which was higher than that of Qatar study with hospitalisation of 11.6% and ICU admission of 1.6%.[7]

CONCLUSION

Prevalence of COVID-19 infection among Dental and Nursing students was 35.10%. Prevalence of COVID-19 infection among Dental students and Nursing students were 33% and 36% respectively.

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