

# Knowledge, Anxiety level and Perceptions on Prevention Protocol of COVID19 among Medical and Dental Graduates

Mahima Sophia M, Manavalan Madhana Madhubala<sup>2</sup>, Dakshine Suthakaran<sup>3</sup>, Monica Diana S<sup>4</sup>,  
Maghizh Jemima M<sup>5</sup>

<sup>1</sup>Professor, Department Of Anatomy, A.C.S Medical College and Hospital, Dr.M.G.R Educational and Research Institute, Chennai, Tamil Nadu, <sup>2</sup>Reader, Department of Conservative Dentistry and Endodontics, SRM Dental College, SRM University Ramapuram, Chennai, Tamil Nadu, <sup>3</sup>Intern Sree Mookambika Institute of Medical Sciences, Kulasekaram, Kanyakumari, Tamil Nadu, <sup>4</sup>Associate Professor, Department Of Anatomy, Amala institute of Medical Sciences, Thrissur, Kerala, <sup>5</sup>Post Graduate, Department of Pathology, Sree Balaji Medical College and Hospital, Bharath University, Chennai

## Abstract

**Aim** To study the knowledge, anxiety level and perceptions on prevention protocol towards COVID19 among medical and dental students.

**Methodology:** The study population was under graduate and post graduate students of medical and dental colleges of India whose conventional academic curriculum was withdrawn due to COVID19 lockdown. An online semi-structured questionnaire was developed based on Current interim guidelines for Disease Control and Prevention (CDC) and WHO and circulated. This online self-reported questionnaire contained the following three sections related to knowledge anxiety and perception on prevention protocol among medical and dental students. . There were 7 multiple choice questions in the knowledge section. Anxiety related section and perception on prevention protocol related to novel coronavirus contained 9 items that were to be rated in the 5-point Likert scale. The data was statistically analysed.

**Result:** Around 52% of the students have good knowledge about COVID19 transmission and diagnosis. Most of the students (55.7%) are comfortable with their virtual classrooms and around 54.5% of students showed self-interest to volunteer patient care without more anxiety. Over 42.2% of students needed faculty supervision and other health professionals acting within their scope of practice and around 82% of students wanted to follow strict preventive protocols to protect themselves from COVID19 infection.

**Conclusion :** Most of the students are having good knowledge about COVID19 even though they are anxious about their academic curriculum and risk of exposure at present situation. The perception on prevention protocol evaluation showed that there should be strong need to implement infection control measures for COVID19 across all healthcare institutions.

**Key Words:** Coronavirus, dental students, medical students, India, COVID19

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## Corresponding Author :

**Manavalan Madhana Madhubala MDS,**  
Reader, Department Of Conservative Dentistry and  
Endodontics, SRM Dental College, SRM University  
Ramapuram, Chennai, Tamil Nadu - 600089.  
E Mail Id – vuncychrist@gmail.com  
Contact - + 9994482281

## Introduction

Coronavirus disease 19(COVID19) was initially reported at Wuhan city of Central Hubei province of China in the month of December 2019<sup>[1]</sup> and the infection spread across the globe rapidly with increasing mortality rates <sup>[2]</sup>, after which WHO declared it as a Public Health Emergency of International Concern on

30th January 2020<sup>[3]</sup>.

Coronavirus has outer fringe of envelope proteins resembling crown so it is named as “corona” meaning ‘crown’ in Latin. They are generally pathogenic to mammals and birds and it causes mild upper respiratory tract infections in humans.<sup>[4]</sup> COVID19 outbreak and the subsequent social lockdown has brought about unexpected lifestyle changes across the people globally and made them to stay indoors and work from home. This event even had a memorable impact on academics of graduating students from the medical and dental schools. They are facing a very different time line now. COVID19 lockdown has led to rescheduling of course curriculum from offline to online mode which resulted in clinging of medical and dental students to their technical gadgets. Usually, the health professional students are rewarded for how well they mastered their chosen field, and how efficiently handle the patients. Recently, COVID19 pandemic had a great influence on their progress of academic curriculum due to sudden long time lock down. And also the panic prevails among the students to resume on their routine hospital postings and academic classrooms.

Mode of transmission of SARSCoV-2 put forth not only healthcare workers but also health care students among the highest risk of population for being exposed to infection.<sup>[5]</sup> The highly contagious virus is going to be an additional hazard for the healthcare students in addition to their extended work hours, physical and psychological academic stress in management of this COVID19 situation. Hence the aim of the present study was to study the knowledge, anxiety and their perception towards prevention protocol of COVID19 among medical and dental students.

## **Materials and Methods**

Study Design: Cross sectional study

Study Setting: Medical and Dental Students residing in their homes due to COVID19 lockdown

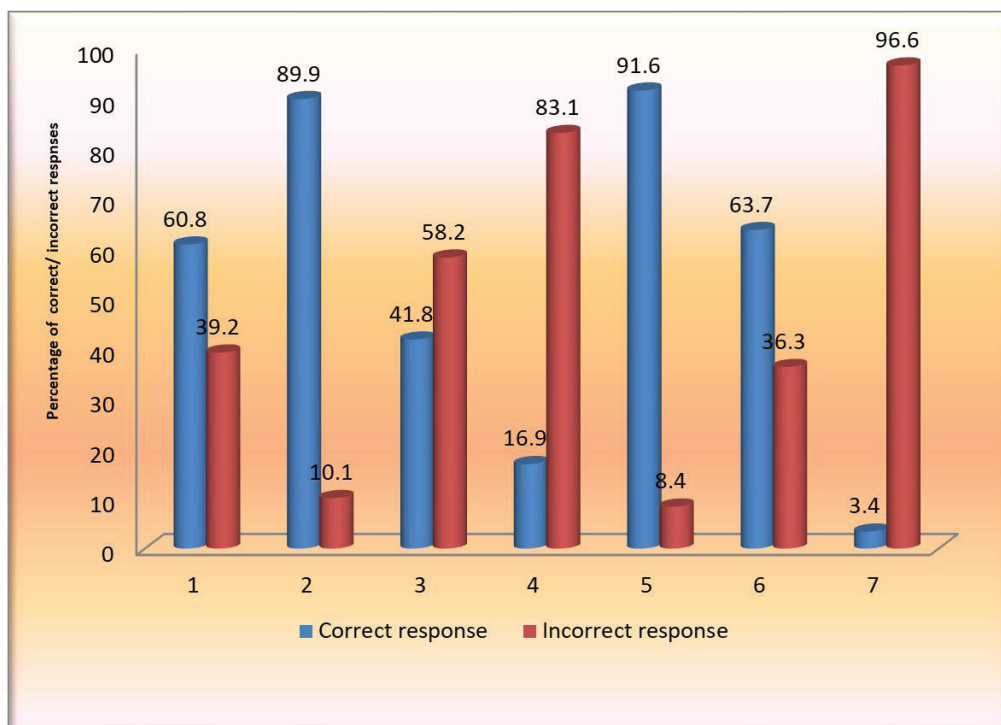
Study Population: Undergraduate Medical and Dental students

Sampling Technique: Convenient Sampling

An online semi-structured questionnaire (Fig.1-4) was prepared and the questionnaire was circulated using google forms, with a consent form attached to it. The questionnaire link was informed through various social media. On the whole, the survey was sent to 430 potential responders. After the demographic details, a set of several questions appeared sequentially, in which participants have to answer session wise. The data collection was initiated on 24th May 2020 at 4 PM IST and closed on 30th May 2020 at 4 PM IST. The socio-demographic variables included age, gender, education, domicile. This online self-reported questionnaire contained the three sections related to knowledge, anxiety and perception on prevention protocol among medical and dental students. There were 7 multiple choice questions in the Knowledge section. Anxiety and Perception on prevention protocol section related to COVID19 had 10 and 8 items respectively. The completed survey was obtained with a response rate of 75.1%.The data was tabulated and analysed descriptively.

## **Results**

A total of 237 responses were received out of 430 circulated forms. Among various sub-groups, 36.4 % of the medical students and 63.6% of the dental students completed the survey.



**Fig.1 – Percentage of correct & incorrect response on knowledge towards COVID19**

On analysing the results of knowledge towards COVID19, about 52.5% of students gave correct option and 47.4% of them opted for various incorrect options. The percentage of correct/incorrect options for each question was shown in Fig.4.

Extension of virtual classrooms would be better to decrease the anxiety towards COVID19 among 55.7% of students and 32.1% of students are not anxious about absence of direct classrooms. Only 34.6 % and 5.1% of them agreed and strongly agreed that they are effective in decreasing their anxiety towards time lapse on completion of academic curriculum and they were equivalent to direct classroom for understanding and interaction. On resuming normal postings, only 47.3% of students would feel comfortable to attend hospital wards with proper precautions. On coming to protection, they strongly (15.2% and 30.8% respectively) disagree with the fact that simple wearing of face mask in college campus would be highly effective in protecting them from COVID19 infection. Most of the students (46.4%) believed they would be safer with PPE kits while

attending outpatient disposal while 35.4% and only 3% of them stated that they are confident without any form of protection. Most of the students (84.4%) stated that they would insist on the susceptible and suspicious person to be screened in the hospital and quarantine while 7.6% and 5% would be more anxious to move out and to avoid those patient suspected of COVID19 immediately. About 69.7% worry about their vulnerable family members and friends of catching the infection while 13.9% were worried about self-infection. In spite of that, half of the students wanted to participate in direct care of patients in this COVID19 outbreak for public service or humanitarian reasons only, while only 21.5% of students wanted it to be curriculum to have better knowledge and 8.4% did not want to take part in it. If the college resumes towards this lockdown, only 32.9% of students wanted to attend on self-interest while 11.4% of student’s parents were not comfortable to send their ward. Equal percentage of students (32.6%) did not want to attend due to COVID scare and also could not decide anything. (as shown in Table – 1)

**Table 1 - Percentage of given different options in the Anxiety section of questionnaire**

Q.No	A	B	C	D	E
1	55.7	12.7	32.1	-	-
2	8.9	16	35.4	34.6	5.1
3	17.7	47.3	13.9	9.7	11.4
4	14.6	29.6	21.9	25.5	8.5
5	1.3	16.9	35.4	46.4	-
6	3.0	5.1	7.6	84.4	-
7	21.5	20.3	8.4	49.8	-
8	32.9	23.6	11.4	32.1	-
9	41.4	13.9	16.5	28.3	-
10	10.1	26.1	24.1	39.7	-

On analysing the perception towards prevention protocol students towards COVID19 sacting within their scope of practice, 54.4% accepted to volunteer if there is a critical or emergency health care worker need for patients. On volunteering, 54.5% of students wanted them to be fully trained for clinical management as they were self-interested to take care of patients. Majority of the students (39.7%) wanted to wear PPE and 10% wanted to limit patient volume and 26.2% did not even want to attend postings whereas 10.1% opted to attend

alternate days of posting to minimize the exposure. Among these, 83.5 % of them strictly needed PPE supplies to be accessed in all situations Majority of the students (81%) felt fumigation and wide area spraying are must to be done on hospital premises. Majority of students (80-84%) needed that PCR testing to be readily available to medical students, patients, and all health care provider in college campus and could be closely monitored among students to check the incidence.(as shown in Table - 2)

**Table 2: Perception among students towards prevention protocol section of questionnaire**

Q.No	Strongly disagree	Disagrees	Neutral	Agrees	Strongly Agrees
1	11.8	30.4	30	21.5	6.3
2	3.4	5.5	36.7	46.0	8.4
3	0.4	1.3	13.5	46.8	38.0
4	0.8	1.7	18.1	51.9	27.4
5	24.1	26.6	25.3	16.5	7.6
6	20.3	34.2	11.3	22.8	5.5
7	3.3	1.7	13.2	40.1	41.7
8	1.3	5	15.6	46.8	34.2

## Discussion

As global measures are being taken to have timely control over the transmission of COVID19, good knowledge, less anxiety and prevention practices among students are the need of an hour. Most of the medical and dental students will be in the line of highest risk to exposure once they resume their academic curriculum. This study helps to gain deeper understanding about the anxiety level towards COVID19 and measures that are necessary for protection from COVID19.

Knowledge can influence the perceptions of students towards this pandemic. It helps in easy recognition and careful handling of potential COVID19 patients after resuming to work. However, the level of knowledge and perceptions on COVID19 remain unclear. In this regard, we aim to explore knowledge, anxiety and perception towards COVID19 prevention prevailing among the medical and dental students during this peak period.

Bats are the natural reservoir of a wide variety of coronaviruses, including those that caused SARS in 2002 and Middle East Respiratory Syndrome (MERS) in 2012. SARS-CoV-2 was identical to a bat CoVRaTG13<sup>[7]</sup>. Most (60.8%) of students opted the correct source. The common signs or symptoms include fever, fatigue, respiratory difficulty and sore throat which have highest transmission rate in its early phase.

Its transmission is primarily through the droplet nuclei, however, SARS-CoV-2 viron particles have also been found in blood and fecal swabs<sup>[6]</sup>. The contact and non-contact mode of transmission was known to only 41% of students. Immediate hospitalization is needed only for the patients with recent onset of respiratory problems or cough or difficulty in breathing within the past 14 days which was opted by only 63.7% of the students. RT-PCR testing is a commonly used technique that can detect the presence of SARS-CoV-2 in a biologic specimen<sup>[7]</sup>. Eventhough RT-PCRs testing uses fluorescent dyes; its sensitivity seems to be low<sup>[8]</sup> which are not known to 70% of the students.

The sudden transition from on-campus learning to distance learning approach requires a great deal of mental and technical challenge. Most of them (55%) were comfortable with extension of virtual classrooms

to decrease the anxiety towards COVID19 and some (32.1%) were not so anxious about lack of direct classrooms. So, most of the academic timing can be converted and utilised for clinical posting as college reopens after COVID era. Few of them were only scared to attend hospital postings as others were comfortable with proper precautions (47.3%) as they accept it as their profession. Preventive measures such as wearing mask, providing PPE and following strict disinfection protocol as given by US Centres for Disease Control and Prevention(CDC) <sup>[9]</sup> would help in reducing the anxiety of students on attending outpatient disposal and ward rounds. Provision of PPE kits would be safer while attending outpatient disposal or during meeting patients alone and it has to be made mandatory for most of the students as very less number of them only are confident without any form of protection. Most of the students (84.4%) were seem to be responsible on prevention they would insist on the susceptible and suspicious person to be screened in the hospital and quarantine. Very few seemed not to do anything on seeing suspected patients which shows their irresponsible professionalism. The hindrance factor to resume their work may be due to their worry about vulnerable family members while only 13.9% were worried about self-infection. This attitude of students shows integrity towards their family members and to their profession. Our survey results showed that 50% students liked to participate in direct care of COVID19 patients as public service or humanitarian reasons. Several governments also have instructed that health care students can be volunteered in promoting health systems affected by COVID19. The factors such as self-interest, personal and parents scare also play an equally important role in resourcing the healthcare students in managing the situation.

On analysing the prevention protocol, faculty or any experienced health care worker supervision is must on offering opportunities to students to execute direct COVID19 patient care. Perception towards prevention protocol seem to be secured (42.2%) only on faculty supervision and other health professionals acting within their scope of practice. This shows that students need faculty supervision for both physical and mental support whereas 36.7% could not decide anything shows their ignorance and lack of knowledge on prevention protocol. On volunteering, majority of the students opted to undergo complete training for

clinical management of COVID patients as they were self-interested while 28.3% relied on self- observation from other health careworkers (HCW). Limited patient volume per day (10%) and alternate days of attending posting schedule and also be good option to reduce the risk of exposure of students. PPE supplies have to be available and to be accessed in all situations as most of the students are interested in patient care with equal importance on their safety. PPE creates an efficient block against transmission of virus and dangers of aerosols produced especially from the operative area in dentistry [10]. Fumigation and fogging have no role in the modern operation room[9]. Results inferred that most of the students were not aware that fumigation actually causes activation of airborne particles[11]. The N95 respirator is preferred over face mask when performing or presents for aerosol-generating procedures [12]. A clean gown with goggles or disposable face shield and clean non-sterile gloves are recommended on working of patients [9].

Providing availability of PCR testing to all medical students, patients, and all health care providers in college campus can be useful for easy reduction of causalities among students. The availability of testing kits should be easily accessible as most of the students were keen on their regular monitoring and early prevention of COVID19 infection. These measures would help in reducing the incidence of disease and give assurance to the students to be in safer environment.

### Conclusion

Students showed adequate knowledge of COVID19 and are ready to volunteers for emergency patient care inspite of their anxiety about COVID panic. Their perception showed that there is a strong need to implement infection control measures for COVID19 and conducting periodic webinars, educational interventions and training programs could be a safe tool to create awareness among them.

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