Perception about COVID-19 among Dental Students of a Tertiary Care Dental Hospital, Bangalore - A Cross-Sectional Survey

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ABSTRACT

BACKGROUND

During the lockdown period of COVID-19 pandemic, dental colleges in Bangalore, India, had switched to online dental education and when the cases started to decline, the dental colleges finally welcomed students on campus in November 2020 following the Government directions. Majority of the dental procedures produce droplets and aerosols in a dental practice. In this context, the standard protective measures are not enough in the daily dental practice during this pandemic. Dental professionals, students in particular should be aware of the main symptoms of COVID-19, its mode of transmission and precautions to be adopted in the dental practice so as to break the chain of infection. The purpose of the study was to investigate the perception regarding COVID-19 among the dental students of a dental teaching institution in Bangalore city.

METHODS

An online questionnaire was created to assess the perception about COVID-19 among dental students. Total enumeration method was followed, and undergraduates, interns and post graduate students of a tertiary care dental hospital participated in the online survey. chi-square goodness of fit test was used to compare the differences in the distribution of respondents and independent chi- square test was used to do the comparison in the difference of responses towards the study questionnaire between the students studying in different undergraduate years; with level of significance set at $P < 0.05$.

RESULTS

About 380 dental students participated in the online survey; correct response rate was slightly higher among clinical dental students than pre-clinical students. Educational and training programmes related to COVID-19, infection control and practices were implemented at the institution for the dental professionals in the academic level.

CONCLUSIONS

The perception about COVID-19 among pre-clinical dental students were slightly lower than the clinical students.

KEY WORDS

Clinical, COVID-19, Dental Students, Pre-Clinical

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BACKGROUND

In the current situation of COVID-19 pandemic dental professionals should be familiar with the mode of transmission of the virus, identifying the patients with symptoms and to take necessary protective measures to break the chain of infection while in the dental practice.[1] In a recent study, COVID-19 was found in the saliva[2] of infected patients and this situation is alarming for the dental professionals as most of the dental procedures are aerosol producing which in turn lead to direct and indirect disease transmission. Hence, it is crucial for dentists to procure preventive strategies to avoid the COVID-19 infection by focusing on patient placement, hand hygiene and having Personal Protective Equipment (PPE). Due to the unique characteristics of dental procedures, the standard protective measures in daily clinical work are not effective enough to prevent the spread of COVID-19, especially when patients are in the incubation period, and are unaware of them being infected or choose to conceal their infection.

Thus, this study intended to investigate the perception regarding COVID-19 among dental students in a tertiary care dental institution in Bangalore city. Before the institution closed for the lockdown a screening and triage form was issued and undergraduates were briefed by the faculty of Public Health Dentistry on the precautions to be taken. As part of preparedness of dental students for patient care once the lockdown ended, we wished to identify the gaps in the knowledge amongst the undergraduate and postgraduate students of our institution so that they can be further updated to deal with patient care during the year of the COVID-19 pandemic. Hence this study was carried out online to assess the perception about COVID-19 among the dental students.

The findings helped the institution to organize the necessary educational programs for the students in order to provide up-to-date information and deliver the best practice to control the Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV-2) disease in the Dental scenario.

METHODS

A descriptive cross-sectional online survey was carried out using Google forms after obtaining ethical clearance from the Institutional Review Board (RRDCHET/06PHD/2020). The informed consent was obtained from the respondents; data was collected from April 2020 to May 2020 from all the under-graduate dental students, interns and postgraduate students of a tertiary care dental institution in Bangalore city. A pilot survey was carried out among 20 dental students of the tertiary care dental institution, who were excluded in the final survey, to test the online questionnaire for comprehensibility and acceptance.

Data collection was done maintaining anonymity and confidentiality by not recording the names of the participants on the questionnaire. A pre-tested questionnaire was used to collect the data from the participants. Questions from previously published literature were included in the questionnaire. Face validity was established by a consultative process with experts. The questionnaire consisted of 28 closed-ended questions which included 13 knowledge, 5 attitude and 7 practice questions assessing the perception about COVID-19 among dental students. Total enumeration method was followed and students of a tertiary care dental college were invited to participate in the online survey. Reminders to encourage participation were given after 3 working days, to improve response rate. Total number of the participants was estimated as 350.

Statistical Analysis

Statistical Package for Social Sciences [SPSS] for Windows Version 22.0 Released 2013. Armonk, NY: IBM Corp., was used to perform statistical analyses. Comparison of distribution of responses for questionnaire among study participants with responses for study questionnaire between Pre-clinical (1st and 2nd year BDS students) and Clinical (3rd and 4th year BDS students, interns and PG students) work exposure participants using chi square Test was done, with a statistical significance of $P < 0.05$.

RESULTS

A total of 380 dental students participated in the study, among them males were 78 (20.5 %) and females were 302 (79.5 %). Majority of participants were of the age group 18 - 25 years (91.6 %, N = 348) and about 31.3 % (N = 119) of them were 1st year BDS followed by 2nd year BDS (28.2 %, N= 107). 1st (31.3 %, N = 119) & 2nd (28.2 %, N = 107) year BDS students were categorized as having only pre-clinical work experience and other participants (3rd year - 14.2 %, N = 54; 4th year - 10.5 %, N = 40; Interns - 6.3 %, N = 24; PGs - 9.5 %, N = 36) with clinical exposure. In that aspect about 226 (59.5 %) of the dental students were from pre-clinical and about 154 (40.5 %) of them from clinical work exposure (Table 1).

Variable	Category	N	%
Area of Work Exposure	Pre-clinical	226	59.5 %
	Clinical	154	40.5 %

Table 1. Distribution of Study Participants Based on the Area of Work Exposure

Majority of the dental students (96.3 %, N = 366) responded that COVID-19 was spread through respiratory droplets, aerosol, direct contact, feco- oral route and fomites (Table 2); includes 98.2 % (N = 222) of pre- clinical students and 93.5 % (N = 154) of clinical students (P - 0.005) (Table 3).

About 49.2 % (N = 187) participants did not know that the etiologic agent of Covid-19, SARS-CoV-2 is different from SARS-CoV, but it has the same host receptor (Table 2); 55.8 % (N = 126) were the pre-clinical and 39.6 % (N = 61) were the clinical students (P - 0.008) (Table 3.).

About 68.7 % (N = 261) of the dental students were aware that antiseptic mouthwashes could only reduce the viral load whereas it could not be eliminated in the saliva (Table 2) (Graph 1); included 64.2 % (N = 145) of the pre-clinical and 75.3 % (N = 116) of the clinical students (P - 0.04) (Table 3).

A relatively greater number of clinical students (29.9 %, N = 46) than the preclinical students (23 %, N = 52) responded that COVID-19 was not fatal than NIPAH virus infection (P - 0.002) (Table 3). Majority of the participants (82.6 %, N = 314)

(Table 2) and majority of the preclinical (85 %, N = 192) and clinical students (79.2 %, N = 122) (Table 3) (Graph 3) (P - 0.04) had the attitude that India could win the battle against the SARS-CoV-2. Majority of the dental students (86.1 %, N = 327) responded that all surfaces, chairs, magazines, doors of the clinic and waiting area that came into contact with dentists and patients were considered "potentially infected" (Table 2), among them 81 % (N = 183) were pre-clinical and 93.5 % (N = 144) were clinical students (P < 0.001) (Table 3). About 50.8 % (N = 193) of them responded that the virus remained longer on steel instruments (Table 2); 45.6 % (N = 103) were preclinical and 58.4 % (N = 90) were the clinical students (P - 0.01) (Table 3).

Questions	Responses	N	%	χ^2 Value	P-Value
COVID-19 is spread through respiratory droplets, aerosol, direct contact, feco-oral route and fomites	True	366	96.3 %	678.716	<0.001*
	False	12	3.2 %		
	Don't know	2	0.5 %		
COVID-19 may be spread through the airborne route.	True	237	62.4 %	167.563	<0.001*
	False	110	28.9 %		
	Don't know	33	8.7 %		
The etiologic agent of Covid19, SARS-CoV-2 is different from SARS-Co-V, with same host receptor.	True	172	45.3 %	133.111	<0.001*
	False	21	5.5 %		
	Don't know	187	49.2 %		
Fever, fatigue, dry cough, myalgia- main symptoms of SARS-CoV-2	True	342	90.0 %	549.874	<0.001*
	False	26	6.8 %		
	Don't know	12	3.2 %		
Individuals infected with COVID-19 can spread the disease even in the pre-symptomatic stage through saliva.	True	343	90.3 %	555.353	<0.001*
	False	10	2.6 %		
	Don't know	27	7.1 %		
All surfaces, chairs, magazines, and doors of the clinic and waiting area that come into contact with dentist and patients must be considered "potentially infected."	True	327	86.1 %	475.932	<0.001*
	False	20	5.3 %		
	Don't know	33	8.7 %		
The virus remains longer on steel instruments	True	193	50.8 %	86.247	<0.001*
	False	47	12.4 %		
	Don't know	140	36.8 %		
Dentists are most exposed to the risk of being affected by COVID-19, much more than any other health professionals.	True	329	86.6 %	485.121	<0.001*
	False	30	7.9 %		
	Don't know	21	5.5 %		
The SARS-CoV-2 can survive hands, surfaces or objects when came in contact with infected saliva even before 9 days	True	153	40.3 %	18.479	<0.001*
	False	88	23.2 %		
	Don't know	139	36.5 %		
Rinses with antiseptic mouthwashes can only reduce the viral load but it cannot be eliminated through the saliva.	True	261	68.7 %	217.016	<0.001*
	False	45	11.8 %		
	Don't know	74	19.5 %		
Minimum time taken for hand washing is 20 sec.	True	345	90.8 %	565.647	<0.001*
	False	26	6.8 %		
	Don't know	9	2.4 %		
Alcohol-based hand sanitizer used in hand hygiene contains ---------- alcohol.	20 %	31	8.2 %	287.468	<0.001*
	33 - 40 %	68	17.9 %		
	60 - 95 %	281	73.9 %		
Current treatment for COVID-19 includes isolation, early symptomatic, and supportive treatment.	True	362	95.3 %	656.232	<0.001*
	False	4	1.1 %		
	Don't know	14	3.7 %		
COVID-19 can affect anyone regardless of their age, race or ethnicity.	Agree	369	97.1 %	695.437	<0.001*
	Disagree	6	1.6 %		
	Don't know	5	1.3 %		
A patient who has tested negative twice after having completed quarantine does not pose a risk of infection.	Agree	197	51.8 %	84.479	<0.001*
	Disagree	132	34.7 %		
	Don't know	51	13.4 %		
COVID-19 is fatal than NIPAH virus infection	True	175	46.1 %	27.984	<0.001*
	False	98	25.8 %		
	Don't know	107	28.2 %		
India can win the battle against the COVID-19.	Agree	314	82.6 %	426.258	<0.001*
	Disagree	7	1.8 %		
	Don't know	59	15.5 %		
As an oral health professional, we have a responsibility to give awareness about COVID-19 to avoid social stigma regarding the same	Agree	368	96.8 %	689.847	<0.001*
	Disagree	3	0.8 %		
	Don't Know	9	2.4 %		
Is a preoperative antimicrobial mouth rinse recommended for a dental practice?	Yes	314	82.6 %	428.863	<0.001*
	No	4	1.1 %		
	Don't Know	62	16.3 %		
If yes, which one is currently recommended for use?	0.2 % Povidone	14	3.7 %	265.158	<0.001*
	1 % H202	23	6.1 %		
	Chlorhexidine	201	52.9 %		
	Either a or b	142	37.4 %		
Donning PPE: gloves, mask / respirator, goggles / face shield, gown.	Yes	240	63.2 %	155.200	<0.001*
	No	84	22.1 %		
	Don't Know	56	14.7 %		
Doffing PPE: Gown, Gloves, Mask / respirator, Goggles / Face shield.	True	161	42.4 %	21.258	<0.001*
	False	131	34.5 %		
	Don't Know	88	23.2 %		
The use of hand instrumentation, dental dam and high-speed suction can significantly minimize the spread of COVID-19.	Yes	153	40.3 %	24.889	<0.001*
	No	81	21.3 %		
	Don't Know	146	38.4 %		
Screening for dental emergencies using Tele-dentistry or other methods minimizes the risk of transmission.	Yes	227	59.7 %	171.416	<0.001*
	No	19	5.0 %		
	Don't Know	134	35.3 %		
If a patient reports with a travel history and symptoms of COVID-19, will you treat him / her according to the triage?	Yes	212	55.8 %	88.505	<0.001*
	No	96	25.3 %		
	Don't Know	72	18.9 %		
Will you report suspected cases to the concerned staff and Head of Institution?	Yes	361	95.0 %	650.942	<0.001*
	No	3	0.8 %		
	Don't Know	16	4.2 %		

Table 2. Comparison of Distribution of Responses for Questionnaire among Study Participants Using Chi Square Goodness of Fit Test

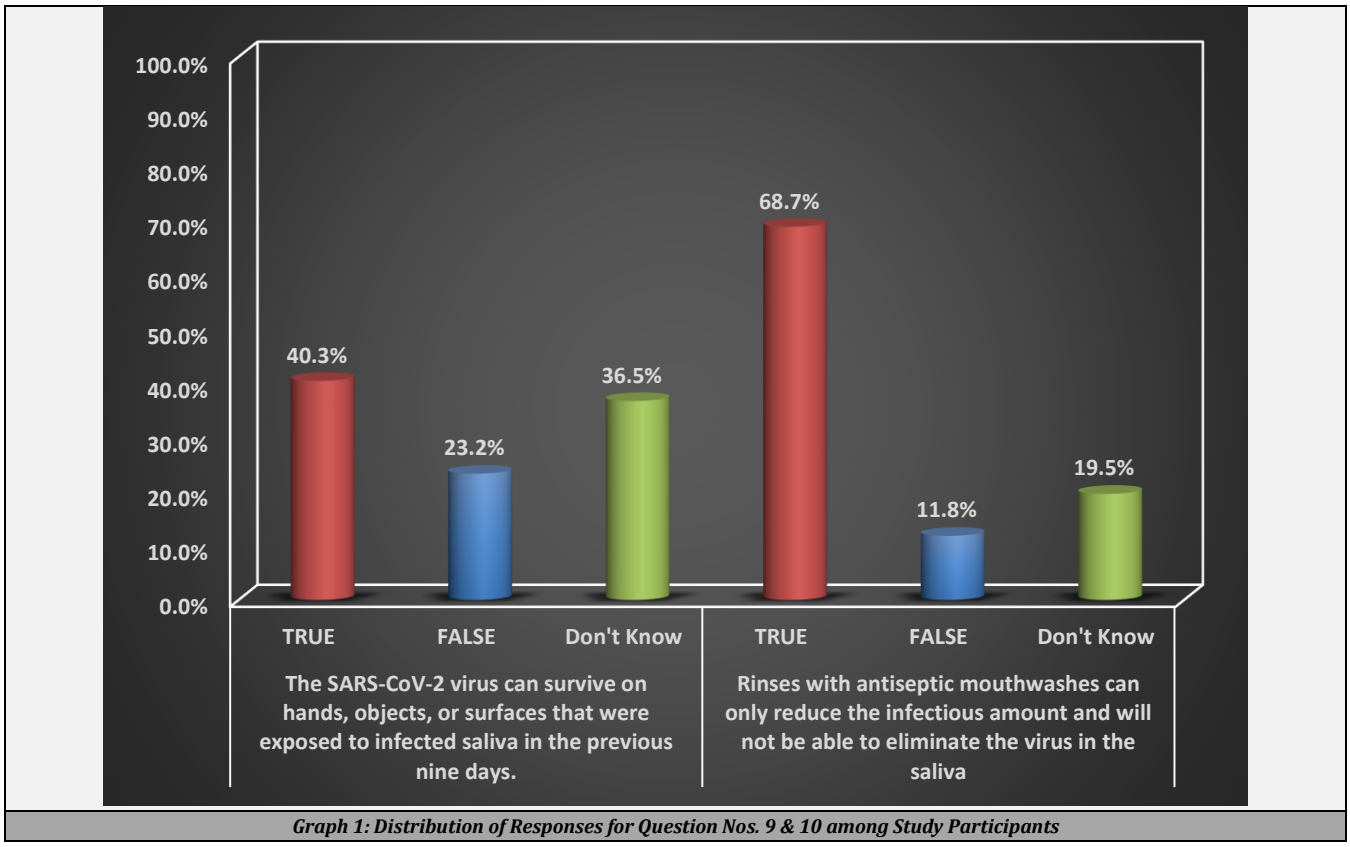
Questions	Category	Pre-clinical		Clinical		χ^2 Value	P-Value
		n	%	n	%		
COVID-19 is spread through respiratory droplets, aerosol, direct contact, feco-oral route and fomites	True	222	98.2 %	144	93.5 %	10.698	0.005*
	False	2	0.9 %	10	6.5 %		
	Don't know	2	0.9 %	0	0.0 %		
COVID-19 may be spread through the airborne route.	True	135	59.7 %	102	66.2 %	1.648	0.44
	False	70	31.0 %	40	26.0 %		
	Don't know	21	9.3 %	12	7.8 %		
The etiologic agent of Covid19, SARS-CoV-2 is different from SARS-CoV, with same host receptor.	True	89	39.4 %	83	53.9 %	9.551	0.008*
	False	11	4.9 %	10	6.5 %		
	Don't know	126	55.8 %	61	39.6 %		
Fever, fatigue, dry cough, myalgia- main symptoms of SARS-CoV-2	True	202	89.4 %	140	90.9 %	1.258	0.53
	False	15	6.6 %	11	7.1 %		
	Don't Know	9	4.0 %	3	1.9 %		
Individuals infected with COVID-19 may can spread the disease even in the pre-symptomatic stage including through saliva.	True	200	88.5 %	143	92.9 %	4.319	0.12
	False	5	2.2 %	5	3.2 %		
	Don't know	21	9.3 %	6	3.9 %		
All surfaces, chairs, magazines, and doors of the clinic and waiting area that come into contact with dentist and patients must be considered "potentially infected."	True	183	81.0 %	144	93.5 %	21.088	<0.001*
	False	11	4.9 %	9	5.8 %		
	Don't know	32	14.2 %	1	0.6 %		
The virus remains longer on steel instruments	True	103	45.6 %	90	58.4 %	8.914	0.01*
	False	26	11.5 %	21	13.6 %		
	Don't know	97	42.9 %	43	27.9 %		
Dentists are most exposed to the risk of being affected by COVID-19, much more than other health professionals.	True	190	84.1 %	139	90.3 %	3.484	0.18
	False	20	8.8 %	10	6.5 %		
	Don't know	16	7.1 %	5	3.2 %		
The SARS-CoV-2 can survive hands, surfaces or objects when came in contact even before 9 days with infected saliva.	True	89	39.4 %	64	41.6 %	6.571	0.04*
	False	44	19.5 %	44	28.6 %		
	Don't know	93	41.2 %	46	29.9 %		
Rinses with antiseptic mouthwashes can only reduce the viral load whereas it cannot be eliminated in the saliva.	True	145	64.2 %	116	75.3 %	6.141	0.04*
	False	33	14.6 %	12	7.8 %		
	Don't know	48	21.2 %	26	16.9 %		
Minimum time should be taken for hand washing is 20 sec.	True	203	89.8 %	142	92.2 %	1.354	0.51
	False	16	7.1 %	10	6.5 %		
	Don't know	7	3.1 %	2	1.3 %		
Alcohol-based hand sanitizer used in hand hygiene contains alcohol.	20 %	21	9.3 %	10	6.5 %	0.958	0.62
	33-40 %	40	17.7 %	28	18.2 %		
	60-95 %	165	73.0 %	116	75.3 %		
Current treatment for COVID-19 include isolation, early symptomatic, and supportive treatment.	True	212	93.8 %	150	97.4 %	4.273	0.12
	False	2	0.9 %	2	1.3 %		
	Don't know	12	5.3 %	2	1.3 %		
COVID-19 can affect anyone regardless of their age, race or ethnicity.	Agree	219	96.9 %	150	97.4 %	0.132	0.94
	Disagree	4	1.8 %	2	1.3 %		
	Don't know	3	1.3 %	2	1.3 %		
A Patient who has tested negative twice after having completed quarantine does not pose a risk of infection.	Agree	109	48.2 %	88	57.1 %	5.091	0.08
	Disagree	80	35.4 %	52	33.8 %		
	Don't know	37	16.4 %	14	9.1 %		
COVID-19 is fatal than NIPAH virus infection.	True	95	42.0 %	80	51.9 %	12.778	0.002*
	False	52	23.0 %	46	29.9 %		
	Don't know	79	35.0 %	28	18.2 %		
India can win the battle against the COVID-19.	Agree	192	85.0 %	122	79.2 %	6.602	0.04*
	Disagree	1	0.4 %	6	3.9 %		
	Don't know	33	14.6 %	26	16.9 %		
As an oral health professional, we have a responsibility to give awareness about COVID-19 to avoid social stigma regarding the same	Agree	216	95.6 %	152	98.7 %	3.388	0.18
	Disagree	3	1.3 %	0	0.0 %		
	Don't know	7	3.1 %	2	1.3 %		
Is a preoperative antimicrobial mouth rinse recommended for a dental practice?	Yes	168	74.34 %	146	94.8 %	33.723	<0.001*
	No	1	0.44 %	3	2 %		
	Don't know	57	25.22 %	5	3.2 %		
If yes, which one is currently recommended for use?	0.2 % povidone	12	5.3 %	2	1.3 %	31.695	<0.001*
	1 % h202	17	7.5 %	6	3.9 %		
	Chlorhexidine	93	41.2 %	108	70.1 %		
	Either b or c	104	46.0 %	38	24.7 %		
Donning PPE: gloves, mask / respirator, goggles / face shield, gown.	Yes	147	65.0 %	93	60.4 %	14.208	0.001*
	No	37	16.4 %	47	30.5 %		
	Don't know	42	18.6 %	14	9.1 %		
Doffing PPE: Gown, Gloves, Mask / respirator, Goggles / Face shield.	True	86	38.1 %	75	48.7 %	11.737	0.003*
	False	74	32.7 %	57	37.0 %		
	Don't know	66	29.2 %	22	14.3 %		
Do you think the use of hand instrumentation along with the use of dental dam and high-speed suction can significantly minimize the spread of COVID-19?	Yes	64	28.3 %	89	57.8 %	50.538	<0.001*
	No	43	19.0 %	38	24.7 %		
	Don't know	119	52.7 %	27	17.5 %		
Screening for dental emergencies using Tele-dentistry or other methods minimizes the risk of transmission.	Yes	116	51.3 %	111	72.1 %	16.505	<0.001*
	No	13	5.8 %	6	3.9 %		
	Don't know	97	42.9 %	37	24.0 %		
If a patient reports with a travel history and symptoms of COVID-19, will you treat him / her according to triage?	Yes	133	58.8 %	79	51.3 %	5.922	0.06
	No	47	20.8 %	49	31.8 %		
	Don't know	46	20.4 %	26	16.9 %		
Will you report suspected cases to the concerned staff and Head of Institution?	Yes	210	92.9 %	151	98.1 %	5.533	0.06
	No	2	0.9 %	1	0.6 %		
	Don't know	14	6.2 %	2	1.3 %		

Table 3. Comparison of Responses for Study Questionnaire between Pre-Clinical and Clinical Work Exposure Participants Using Chi Square Test

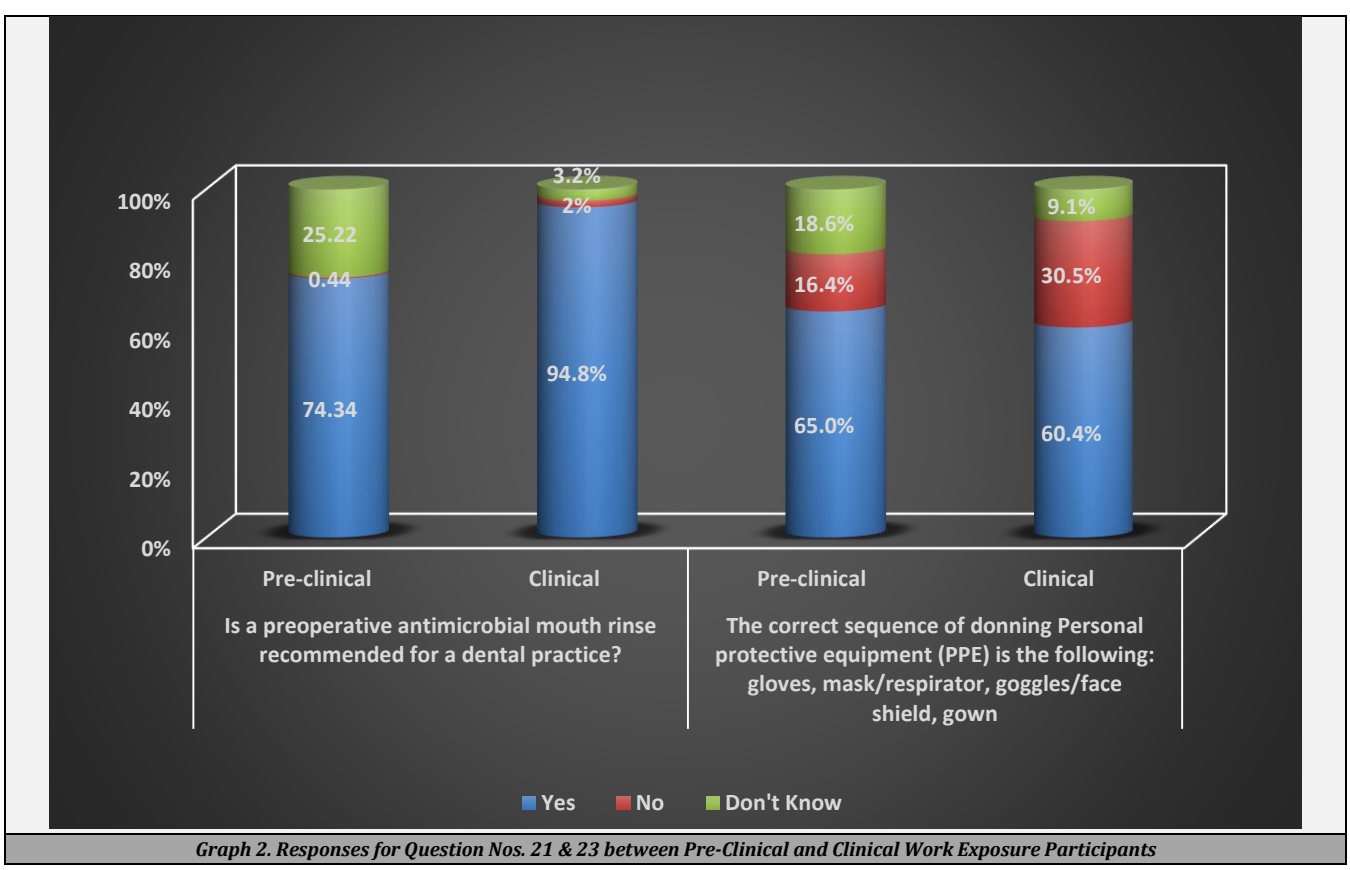
About 40.3 % (N = 153) of them responded that covid-19 virus can survive hands, surfaces or objects when came in contact with infected saliva before 9 days. (Table 2); 39.4 % (N = 89) were the pre-clinical and 41.6 % (N = 64) were the clinical students (P - 0.04) (Table 3) (Graph 1).

Majority of them (82.6 %, N = 314) responded that a preoperative antimicrobial mouth rinse was recommended for a dental practice (Table - 2); 74.34 % (N = 168) were pre-clinic and 94.8 % (N = 146) were clinical students (P < 0.001) (Table 3) (Graph- 2) and about 52.9 % (N = 201) of the total participants responded Chlorhexidine was currently recommended for use (Table -2), among them 41.2 % (N = 93) were pre-clinical and 70.1 % (N = 108) were clinical students (P < 0.001) (Table 3).

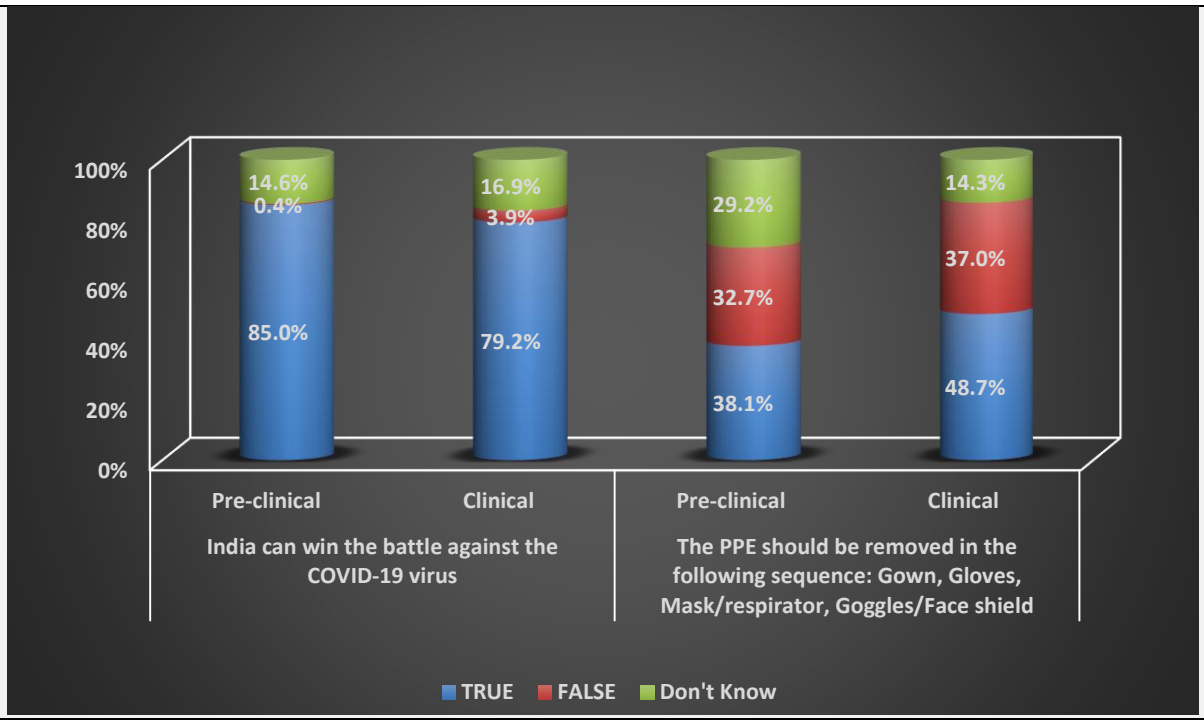
About 22.1 % (N = 84) of the participants responded that the correct sequence of donning Personal protective equipment (PPE) was not the following: gloves, mask / respirator, goggles / face shield, gown (Table -2); 16.4 % (N = 37) and 30.5 % (N = 47) were pre-clinical and clinical students respectively (P - 0.001) (Table 3) (Graph- 2). About 34.5 % (N = 131) of them responded that the doffing sequence of the PPE was not correct as mentioned: Gown, Gloves, Mask / respirator, Goggles / Face shield (Table -2); 32.7 % (N = 74) of them were pre-clinical and 37 % (N = 57) were clinical students (P - 0.003) (Table 3) (Graph 3).



Graph 1: Distribution of Responses for Question Nos. 9 & 10 among Study Participants



Graph 2. Responses for Question Nos. 21 & 23 between Pre-Clinical and Clinical Work Exposure Participants



Graph 3. Responses for Question Nos. 19 & 24 between Pre-Clinical and Clinical Work Exposure Participants

About 40.3 % (N = 153) of the participants thought that the use of hand instrumentation along with the use of dental dam and high-speed suction could significantly minimize the spread of COVID-19 (Table -2); 28.3 % (N = 64) and 57.8 % (N = 89) of them were pre-clinical and clinical students respectively (P < 0.001) (Table 3). A response rate of 59.7 % (N = 227) thought that screening for dental emergencies using Tele-dentistry or other methods minimized the disease transmission risk of COVID-19 (Table 2); 51.3 % (N = 116) were the pre-clinical and 72.2 % (N = 111) were clinical students (P < 0.001) (Table 3).

DISCUSSION

This descriptive online cross-sectional survey was conducted among 380 dental students of a tertiary Dental Care Hospital, to assess the perception about COVID-19; about 59.5 % and 40.5 % were pre-clinical students and clinical students respectively. In the present study, the correct response rate about the mode of transmission was high (96.3 %); however, awareness about the spread through airborne route of COVID-19 was relatively low among pre-clinical and clinical students (59 - 66.2 %). It supports the findings of the studies done in different parts of the world.[3-11]Contrarily, low knowledge about the mode of transmission was found in the studies done in UAE (2020) (39 %).

In the present study, majority of the participants (90 %) were aware of the main clinical symptoms of COVID-19. Similar results were found in the studies done in different parts of the world;[5-8,11-15] whereas the findings were contrary to the studies of PAN-India (2020) (58.8 %)[4] and Iran (2020)[16] (47.5 %).

Majority of the participants (90.3 %) of the current study were aware of the fact that COVID-19 could be spread even in the pre-symptomatic stage from an infected patient, even through saliva. It was reported that live viruses were present in the saliva of infected individuals by viral culture method.[17]

In the present study most of the study population (86.1 %) were knowing that all the surfaces, chairs, magazines, doors of the clinic and the waiting area that come into contact with the dentists and patients must be considered "potentially infected", whereas only 50.8 % of them were aware of the fact that SARS-CoV-2 remained longer on steel instruments. Similar findings were found in a study done in Lebanon (2020); majority (91.1 %) of them knew that COVID-19 could persist on surfaces for several days.[7] As Corona virus can survive in aerosol and inanimate surfaces at room temperature for several days, clinical assistants should make sure to disinfect those surfaces.[18]

The dental healthcare professionals (DHPs), due the nature of treatment and high chances of coming in contact with body fluids like saliva and blood, face the highest risk of getting COVID-19 virus infection[6] and this was supported by majority (86.6 %) of the respondents of the current study, which was similar to the PAN-Indian study (87 %) [11] and was supported by an article published in New Year Times.[19]

Majority of the participants of the current study reported that they followed hand hygiene practices like hand washing for at least 2 minutes (90.8 %) and using hand sanitizers which contained 60 - 95 % alcohol (73.9 %); supportive literature findings were reported in many studies.[3,4,6-8] Majority of the respondents (95.3 %) were aware that there was no effective cure for COVID-19, but isolation, early symptomatic and supportive treatment could help most patients recover from the infection; similar to the Mumbai study (2020)[3] (93.7 %), Jordan study(2020)[13] (78.9 %), and China (2020)[14] (94 %). In contrary to this, the findings of Tamil Nadu study (2020); 39.85 % of the participants thought that the present most effective strategy in controlling COVID-19 was containment and mitigation.[10]

The overall case fatality rate of COVID-19 is 2.3 % in China according to the empirical clinical data, explains much lower

than that of SARS (9.5 %), MERS (34.4 %), H7N9 (39.0 %)[14] and NIPAH (40 - 75 %).[20] In the present study, only 28.2 % of the participants were not knowing whether COVID-19 was fatal than NIPAH virus infection, among them preclinical dental students were the most (35 %). Most of the respondents (82.6 %) of the current study had an attitude that India could win the battle against the COVID-19; similar to the results of the Chinese study (2020)[14] (97.1 %). In the present study, most of the participants (96.8 %) had an attitude to increase the awareness of COVID-19 to avoid social stigma regarding the same, as oral healthcare professionals; similar to the results of Jharkhand study (85 %) (2020)[6] and Jordan study (2020) (67.7 %).[5]

A pre-procedural mouth rinse would be most useful in the dental cases when rubber dam cannot be used. A pre-operational mouth wash containing oxidative agents such as 1 % hydrogen peroxide or 0.2 % povidone is recommended, as 2019-nCoV is vulnerable to oxidation and thus reducing the salivary load of oral microbes, including potential 2019-nCoV carriage.[1] In the current study, only a few participants (37.4 %) recommended pre-operational mouth rinses either 1 % hydrogen peroxide or 0.2 % povidone; high response rate was given by pre-clinical dental students, the response rate was similar in the Karnataka study (2020)[15] (11-17 %) and Tamil Nadu study (2020) (43 - 57 %).[10]

Likewise, in the Jharkhand study (2020), for a question "Do you think a preoperational antimicrobial mouth rinse with 0.2 % Chlorhexidine, 1 % hydrogen peroxide or 0.2 % Povidone-iodine reduces the salivary load of COVID-19", majority of the participants (58.3 %) were not sure about this.[6]

When asked about the sequence of donning and doffing Personal Protective Equipment (PPE) in the current study, only 22.1 % of the participants responded the mentioned sequence as wrong; most of them (37 %) were clinical dental students. This implies the sensitization about the importance of PPE in dental practice during COVID-19 among the dental students. Contrary results were found in the Jharkhand study (2020)[6] (76.7 %) and in Lebanon study (2020) (64.8 %); more than half of the participants were aware of the donning and doffing sequence of PPE.

Dentists should minimize the utilization of ultrasonic instruments, high-speed hand pieces, and three-way syringes to cut back the chance of generating contaminated aerosols.[18] In the present study, only 40.3 % agreed that the use of hand instrumentation along with dental dam and high-speed suction can significantly minimize the spread of COVID-19; among them 57.8 % were clinical dental students; similar to the Jharkhand study (2020)[6] (70.7 %) and the study done among Indian dentists (2020)[11] (73.7 %).

Tele-dentistry will be of great assistance within the current pandemic situation.[21] The dentist has the whole right of educating and informing the patients through tele-screening with the help of applications available on the digital platform.[22] More than half of the present study population (59.7 %), agreed the fact that screening for dental emergencies using tele-dentistry or other methods, minimizes the disease transmission, which was supported by the PAN-Indian study (2020) (46.3 %).[11]

In the current study, more than half of the participants (55.8 %, N = 212) were ready to treat patients with a travel history according to the triage, thus recording the travel history as crucial for dental treatment during the pandemic. Triaging is the process of determining the priority of patients' treatment needs based on the severity of their condition.[30] Supportive findings were found in the study conducted among Indian dentists (2020)[4]; 93.8 % of the respondents were aware of the critical importance of ascertaining the recent travel history of the patient. The COVID-19 pandemic has now spread to more than 200 countries and hence the travel history of a patient is crucial in determining his / her risk status.[4] Majority of the participants (95 %) of the present study agreed to report the suspected cases to the concerned staff and Head of the Institution; which was similar to the findings of the Jordan study (2020) (58.2 %).[5]

With the reopening of colleges and hostels in Karnataka, Bengaluru's local civic body, the Bruhrat Mahanagara Palike (BBMP) has deployed the mobile swab collection teams in colleges and higher education institutions across the city, including our institution. Adequate measures were taken to sensitize about the guidelines and standard operating procedure issued by the state government and were followed in the institution.

CONCLUSIONS

Overall perception about COVID-19 among clinical dental students was slightly higher when compared with pre-clinical students. Open communication between students, teachers, and administrative staff would enhance mutual trust and facilitate adequate cooperation. With the increased knowledge of viral features, epidemiologic characteristics, clinical spectrum, and treatment, efficient strategies must be employed to stop and control the spread of COVID-19. As a result, posting visual alert icons such as signs and posters at the doorway and in strategic places to issue patients with instructions (in appropriate languages) about hand hygiene, respiratory hygiene, and cough etiquette have been implemented according to guidelines of the National Accreditation Board for Hospitals & Healthcare Providers (NABH). The infection prevention and control strategies that should be adopted were communicated through online sessions during the lock down and reinforced in the offline classes after the resumption of regular college for students in the campus.

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