



KNOWLEDGE, ATTITUDE AND PRACTICE OF INFECTION CONTROL DURING COVID - 19 PANDEMIC AMONGST DENTAL POSTGRADUATES

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Abstract –

Patient safety is a priority for achieving higher quality health care standards and human error reduction. The dentist may be the first man or woman to come in contact with an infected person and infect others or through following proper precautions can save spread of the disease. The aim of this study was to assess the level of appropriate infection control practices, level of awareness, perception, and attitude regarding the coronavirus disease (COVID-19) and infection control among Postgraduate Dentists. This study included 90 dental postgraduates in dentistry all over the India. Data were collected by self-

administered questionnaires> composed of 17 questions. The questionnaire consisted of questions assessing their awareness, the signs and symptoms of the disease, mode of transmission of COVID-19 and contamination control measures as well as infection control for preventing COVID-19. It has been concluded that Dental postgraduate students have high levels of adequate infection control practices in the awareness of level of their satisfaction with their knowledge.

Keyword -postgraduate dentists, postgraduate students, COVID-19, pandemic

INTRODUCTION –

Assuring patient safety is one of the priorities in the process of achieving higher quality health care standards and error reduction.¹ Coronavirus disease 2019 (abbreviated "COVID-19") is a deadly respiratory illness, this is due to a novel coronavirus and became first detected in December 2019 in Wuhan, China. New person-to-person route of transmission is inflicting the disease to spread rapidly throughout distinct continents and is much more likely to affect elderly adult as well as old age group individual. The dentist may be the first man or woman to come in contact with an infected person and infect others or through following proper precautions can save spread of the disease. Dentists who are specializing in the area of public health dentistry are at an elevated threat of contacting such an infection because of the nature of their work.² To combat a pandemic, dentists should be conscious of recent developments, following apt guidelines (i.e., the WHO recommendations at <https://www.Who.Int/emergencies/illnesses/novel-coronavirus-2019/technical-steering>) make efforts to save the transmission of such disease.

Due to lockdown, public and private universities have activated the e-learning knowledge of mode for training and because the authorities ordered, universities are closed and no face-to-face activities allowed. This has forced college students of all disciplines which includes dentistry to stay at home. To guarantee the final success for combat towards COVID-19, adherence to these measures are crucial, which is basically laid low with their knowledge, attitudes, and practices (KAP) towards COVID-19 in accordance with KAP concept. Once the regulations are eased students have to come back and resume their clinical work in the campus. This study were assessed the Knowledge, Attitude and Practice of Infection control during COVID-19 Pandemic amongst Dental Postgraduates.

Objectives - This study aimed to assess the level of awareness, perception, and attitude regarding the coronavirus disease (COVID-19) and infection control among Postgraduate Dentists.

MATERIAL AND METHODS –

A multi-centric cross-sectional survey-based study was conducted from March 2020 to August 2020 during a period of strict lockdown to implement social distancing in order to avoid the spread of COVID-19. As it was not feasible to conduct a population-based survey at this time, the investigators used an online method of data collection.

Study setting - A questionnaire was designed on google forms, available at: <https://forms.gle/PCJJEPP2ouGLvise8> and this hyperlink became shared to WhatsApp groups of students doing Postgraduation in different field of dentistry all over the India. The hyperlink was additionally shared personally to postgraduates in the contact lists of the investigators. Upon clicking on the link, the 1st page assured the data confidentiality, Postgraduate students were informed about the study objectives and stated that this study was purely voluntary participation. Postgraduate students consent were taken who were participating in this study had to click on the 'next' button to answer the questionnaire, and they had whole freedom either to answer or decline the questionnaire. Only the principal investigator had access to the data and no personal details (e-mail deal with, telephone wide variety, call, and many others.) have been required. Responses were sought from only the students who were currently doing postgraduation in dentistry and a submission was considered only when the 'submit' button was clicked at the end of the questionnaire. The study duration became from March 2020 to August 2020, and each comfort sampling (researchers themselves contacted postgraduate's dentists to participate) and snowball sampling (the collaborating postgraduate's dentists have been requested to forward the questionnaire to their colleagues) were used so that maximal participation could be ensured. The questionnaire changed into dispensed individually via a quick response (QR) code in addition to posted on numerous social media systems like WhatsApp.

Study population - The study population consisted of students doing Postgraduation in different field of dentistry all over the India. A web questionnaire was sent in March 2020. The questionnaire consists of a series of questions about practicing in clinical field while doing PG, there demographic characteristics;

their awareness of the signs and symptoms of the disease, mode of transmission of COVID-19 and contamination control measures as well as infection control for preventing COVID -19; and their mindset in the direction while treating patients with COVID -19.

The sample size calculated was 90, assuming a response rate of 50%, 95% confidence interval (CI), Z of 1.96, and margin of error of 5%. A further 10% (N=10) was added to counteract any errors in completing the questionnaires, resulting in a final sample size of 95. The survey commenced on March 2020, and the required sample size was achieved on August 2020.

Measurements –An initial draft of the questionnaire become designed, and subsequently validated in postgraduates. The questionnaire consisted of questions assessing demographics; information sources; knowledge, attitude and practice toward COVID-19; and perceived barriers to infection control. Demographic characteristics included gender, age, profession and experience, and one item concerning information about COVID-19.

Statistical Analysis -The data were tabulated and entered into Microsoft excel 2010 .The descriptive evaluation of the responses was carried out and the outcomes have been expressed inside the form of frequencies and percentage. The chi-square test became used for comparison between women and men with respect to the questions associated with information i.e. knowledge , attitude and exercise i.e. practice towards infection control in the course of COVID -19 pandemic amongst Dental Postgraduates.

RESULT-

In this survey it has been reported that the postgraduates filling the form were very much aware about infection control (84.6%)and postgraduate students who had attended lecture and training were approx..69.2% and around 92.3% of postgraduates are aware about COVID-19 symptoms. 92.3% of the people responded to be the most needed thing to follow the COVID-19guidelines while entering into the dental clinic. Chemical agents and radiation rays are most effective for disinfection i.e. 84.5% dentist has responded in this survey. The Chemical disinfectant most of the students use 1% sodium hypochlorite and it has found to be the most effective agent as a disinfectant and for scrubbing preferably they use commercially available products such as betadine, Dettol, savlon etc. While delivering the dental prosthesis 77% dentists are found to be following the disinfection protocol in their lab. 92.3 % of people

disinfect not only the operative surface but also the dental surgical materials like splinting, impression material, suture, instruments. All the postgraduate dentists autoclave the instruments after every patient by following the procedure of washing 1st with tap water, then wipe with spirit, then autoclave.

DISCUSSION – The rapid surge of COVID-19 disease has not only raised widespread public health concerns but has collapsed world's economy. It has put immense strain on social stability and the global health systems, particularly challenging the health care workers including the Dental care professionals (DCP). The current study aimed to assess the level of awareness, perception, and attitude regarding the coronavirus disease (COVID-19) and infection control among Postgraduate Dentists. This study revealed adequate knowledge and positive attitude of post graduates towards the COVID-19 disease. Most of the participants in the current study exhibited sufficient knowledge about questions related to mode of disease transmission, infection control, disinfection of operative surface, dental care procedures, significance of mask, sanitization while examination, and WHO guidelines regarding hand hygiene. These outcomes are in accordance with the results reported by Khader et al.³ It was observed that the postgraduates reported better and significant knowledge scores. Considering this, the scientists and health authorities have cautioned the DCPs should carefully assess the information related to COVID-19 and should utilize only the authentic and scientific literature as a source of information.⁴ Another study reported that only 56.5% of respondents had sufficient knowledge regarding transmission, symptoms and treatment of COVID-19.⁵ This study has reported to be 92.3% awareness about identifying the patients at risk and also 92.3% dentists have found to be instructing to the patients regarding wearing mask while sitting in waiting room, washing hands before getting in dental chair, washing the hands for 20 sec and also following the protocol by using study 1% sodium hypochlorite and it was found to be the most effective by 69% of individuals. minimization of aerosol generating procedures, autoclaving handpieces, surgical materials such as splinting, impression materials, suture, disinfecting the instruments by following procedure of washing the instrument 1st with tap water, then wiping with spirit then autoclaving, and also disinfecting the operative surface. The merits of this study lie in its concept of addressing current pandemic dilemma and highlighting the area where little research has been done until now. The key results of present study may be used to create awareness in designing efficient infection control measures of COVID-19.

CONCLUSION - Our results indicated that postgraduate students have high levels of knowledge regarding appropriate practices for infection control in the Dental Clinics during COVID -19 Pandemic

TABLE: Responses to various questions in relation to various practices among the study population

Question	Option			
1. Have you received training in infection control in dentistry	Yes	No		
	77	13		
2. Have you attended training or received lectures regarding covid-19.	Yes	No		
	63	27		
3. Are you aware of covid-19 symptoms and ways of how to identify patients at risk of having covid-19	Yes	No		
	81	9		
4. Is it necessary to ask patients to set far from each other, wear masks while in the waiting room, and wash hands before getting in the dental chair.	Must needed	Not much needed		
	82	8		
5. Which of the following agent do you think Most effective in disinfecting operative surfaces ?	1% sodium hypochlorite	Using detergent	5% sodium hypochlorite	-
	65	0	25	-
6. What is the recommended timing for hand washing?	10 sec	20sec	30sec	-
	10	70	10	-
7. When you should autoclave the Handpiece?	After every patient	After 5 patient	At the End of the Day	-

	100	0	0	-
8. What is the procedure for disinfecting the instrument	1st with tap water, then wipe with spirit, then autoclave	Wipe with spirit and autoclave	Directly autoclave the instruments	-
	78	8	4	-
9. Do you think that all dental surgical materials (for splinting, impression material ,suture,instruments)must be disinfected ?	Always	Never	Depends upon patients medical history	-
	83	0	7	-
10. Why is it important to disinfect dental impressions ?	To prevent cross contamination	for more detailed registration	to protect from physical changes /for easier processing	-
	65	22	3	-
11. Are you aware about different disinfectant used for different dental material to avoid adverse reactions ?	Yes	No	Doesn't Matter	-
	78	12	0	-
12. Which of the following type of disinfection is most accepted for surgical equipments	Chemical agents	radiating rays sun	physically removing debris	both a and b

		exposure		
	18	10	0	62
13. Which of the following is the most commonly used chemical disinfection in your clinic	Sodium hypochloride	impression disinfection	spray ethanol hydrogen peroxide	ammonium compound iodophoregluteraldehyde
	62	12	0	16
14. Do you think there is chance of cross infection from clinic to lab and from lab to clinic if we don't follow the protocol?	Yes	No	Maybe	Not Sure
	65	25	0	0
15. How often do you chemically disinfect impressions before sending to the laboratory	Sometimes	Always	Never	-
	22	50	18	-
16. Practice of disinfecting beforehand	Washing with tap water	brushing away the debris	chemical agents	none of the above
	10	35	35	0
17. Do you disinfect the implant prosthesis before delivering it to patient ?	Yes	No	Maybe	No need
	67	10	13	0

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