



## Willingness to Volunteer during the Covid-19 Pandemic among Dental Public Health Professionals in India

Priyanka<sup>1</sup>, Charu Khurana<sup>2\*</sup>, Shourya Tandon<sup>3</sup>, Sanchit Pradhan<sup>4</sup>

Department of Public Health Dentistry, SGT Dental College, Hospital and Research Institute

SGT University, Gurugram, Haryana,

Email: [drcharukhurana@gmail.com](mailto:drcharukhurana@gmail.com)

### ABSTRACT

*The epidemic of Novel Coronavirus Disease (COVID-19) started in the country of China, evolved rapidly into a public health emergency and has resulted in a global pandemic. In this time of crisis, involvement of volunteers with medical background is an important means to combat the situation. An online questionnaire study was carried out among 200 Dental Public Health Professionals registered in Indian Association of Public Health Dentistry (IAPHD). A pretested, self-administered 20-item questionnaire was used to determine the perception of public health dentists to volunteer for health care and social services during pandemic. It also elicited their self-declared knowledge, attitude and behaviour towards COVID-19 management. With a response rate of 63.5% around 127 public health dentists having mean age of 30.3±5.7 years responded back via mail. Of which a majority of participants (81.8%) were willing to volunteer during the pandemic. The mean knowledge, attitude and behaviour score of COVID-19 was 5.5±0.7, 5.6±1.8, 3.8±1.4 respectively. The attitude and behaviour score came out to be statistically significant (P=0.04) based on sex whereas government-affiliated professionals had significantly better attitude in comparison to private employees (P=0.02). Highly motivated response to support medical professionals in COVID-19 was observed among dental public health specialists. With the rapid surge of COVID cases in India, Public health dentists with knowledge of basic human science, fundamentals of epidemiology and ability to deal with patients in community settings are an invaluable auxiliary force in the management of COVID-19.*

**Key words:** COVID-19, Dentists, Public Health, Volunteer

Received 10.07.2022

Revised 12.08.2022

Accepted 11.10.2022

### INTRODUCTION

Pandemic disease has recently become a world-threatening public health emergency. In December 2019, a new coronavirus strain was discovered in Wuhan, China, after the outbreak of pneumonia[1] Patients infected with the new coronavirus develop a mild cough resulting in fulminant respiratory failure. Positive results were also observed in asymptomatic patients[2] People reported human-to-human transmission globally. On March 11, 2020, the outbreak of this new coronavirus disease was declared a pandemic by the World Health Organization (WHO)[3].

To date, no absolute antiviral treatment protocol has been marketed for the treatment of coronavirus disease (COVID-19). WHO treatment guidelines focus primarily on the use of symptomatic control and infection control measures[4] WHO has also launched various online training courses and resource materials on COVID-19 in regional languages to increase the awareness and strengthen preventive strategies among healthcare professionals[5] Public health emergencies increase demand for many critical services and reduce their ability to meet those demands. Since the first broke out of COVID epidemic, healthcare systems of the entire world have been under great pressure. The surge in positive cases has led to a dramatic increase in need for medicines. This has been raised as an important issue that needs to be addressed before such pandemics strike. Due to the limited medical resources, recruiting volunteers with a medical background is an essential tool for dealing with a pandemic[6]

Dentists can provide potential support with volunteer activities during the time of such crisis. Although dental and medical doctors have different areas of activity, but their academic curriculum and clinical training has much in common. Dentists, with in-depth knowledge of head and neck anatomy and aseptic surgery techniques, are an invaluable resource in the management of pandemic[7]

Dental council of India (DCI) issued an advisory on 16<sup>th</sup> May 2020 for dental surgeons that after thorough and comprehensive training they can perform Covid-19 management activities like patient triaging, monitoring vital signs, post discharge counselling and writing prescriptions[8]

Dentists in the field of public oral health are specifically trained about fundamentals of epidemiology, health surveillance, community-based disease prevention and management. With such competencies, Public health dentists can provide assistance to expand the capacity of health officials to manage COVID-19[9] Assessing Knowledge, perception, and Behaviour of Public Health Dental Professionals towards COVID-19 management is definitely an important step to understand their willingness to provide voluntary support in the time of crisis.

## **MATERIAL AND METHODS**

### **Design and population of the study**

An observational study was carried out among Dental Public Health professionals to assess their willingness and perception to volunteer in COVID-19 management. The target population was enrolled from the dental professionals registered in Indian Association of Public Health Dentistry (IAPHD). A total of 2000 IAPHD members list was obtained from the head office of the association. By using systematic random sampling, every 10<sup>th</sup> member was chosen and a total of 200 mails were sent. All dental professionals who were Master of Dental Surgery (MDS) in Dental Public Health or Post Graduate (PG) students in department of Public Health Dentistry were taken into the study whereas those not interested to participate and didn't submit questionnaire within stipulated time (4 weeks) were excluded. The present study was carried out for 2 months from March to April 2021.

### **Study questionnaire**

A structured, pre-tested, self-administered questions was prepared in English language and documented online. All the questions were generated based on theoretical facts, research, findings, and specialists opinion. The questions were comprised of two sections and estimated to take around 10 minutes to complete. The first part of questionnaire consisted of demographic details and second part included 20-item closed ended questions to determine the participants' objective knowledge, attitude and behaviour towards pandemic management. A pilot study was conducted on 30 individuals to check the understanding, feasibility, validity, and reliability of the structured questionnaire. An intra class correlation of 0.8 was obtained indicating good reliability. To avoid any bias, results and participants of the pilot study were not taken in the final study.

### **Ethical consideration**

Ethical approval was provided by the Ethical Committee of SGT University, Gurugram, Haryana, India (FODS/EC/SS/PHD/2021/46) on 20 February, 2021 prior to the study. All the study participants filled the Informed consent in google form and their confidentiality was assured.

### **Statistical Analysis**

The information reported was calculated and analysed using excel and SPSS Version 20. The statistical tests used were Mann Whitney, Kruskal Wallis and Spearman's correlation test. The level of significance was kept 5% and  $p \leq 0.05$  considered statistically significant.

## **RESULTS AND DISCUSSION**

Around 127 participants with a mean age of  $30.3 \pm 5.7$  years filled the study questionnaire representing a response rate of 63.5%. Of all, 48 (37.8%) males and 79 (62.2%) females participated. The majority of participants (55.1%) of participants were MDS and 44.9% were post graduate students in department of Public Health Dentistry. Around 66.9% participants reported having experience of less than 5 years after completing graduation in Bachelor of Dental Surgery (BDS) and 12.6% participants had more than 10 years of working experience after graduation. Of all, 81.9% participants were affiliated to private organization and only 18.1% were affiliated to government sector (Table 1).

Table 2 demonstrates the knowledge, attitude and behaviour level regarding COVID-19 management among the study participants. Almost all participants (99.2%) participants had knowledge about origin and mode of infection of covid-19. It was seen that 83.5% participants were willing to be a part of covid-19 vaccination team. Around 86.6% participants felt that formal training should be mandatory for dental professionals to become a part of COVID-19 management team. A Statistically significant association was observed between gender and attitude ( $P=0.05$ ), gender and behavior ( $P=0.04$ ) and between affiliation and attitude domain ( $P=0.02$ ) regarding COVID-19 management among study participants in Table 3. Correlation statistics revealed a significant association between knowledge and attitude ( $P=0.03$ ), knowledge and behaviour ( $P=0.007$ ) and attitude and practice ( $P=0.001$ ) among study participants towards COVID-19 management (Table 4).

Readiness to become a part is one of the important aspects of an effective public health system structure in pandemic situation[10] Past experience with emergency planning shows that finding and recruiting volunteers can be a major task. Dentists can be a potentially important resource in a public health crisis. The dental profession is widely recognized as an integral part of the healthcare system[11] Previously limited research work has been done to access the capabilities, attitudes and behaviour towards volunteering on COVID-19 frontline.

The present study found that majority of participants (81.8%) was willing to be a part of COVID-19 management team. This is in line to the research done by *Rajesh et al.*, who reported 96 % dental professionals interest in participating for disaster management[12] This response is found to be in contrast with the study done by *Shahinet al.*, where only 25% participants were willing in COVID-19 management[13]When asked about specific work to be done, 83.5 % participants expressed positive response to be a part of covid-19 vaccination team if given an opportunity.

In our study, only few study participants (27.6%) had prior experience of volunteering the pandemic control programme but 82.7% participants keep themselves constantly updated regarding COVID-19 management protocols. If certified training programme pandemic management is provided, Dental public health professionals can provide a boundless support to our public health system in these pandemic times, as in present study only 36.2% participants had undergone certified training programme for COVID-19 management which is similar to studies done by *Panditaet al.*, and *Ammaret al.*, where 30.9% and 48% participants had undergone training in public health emergencies. In the present study, significant result came out in mean attitude and behaviour scores in relation to gender among study participants. The results are contradictory to research done by *Panditaet al.*, whereas no statistically significance was observed in mean values of knowledge, attitude and behaviour in relation to educational qualification among study participants. The results are in contrast with study done by *Panditaet al.*, where significant difference was reported among knowledge and attitude scores in relation to educational qualification. [14-15] but in contrast to results of *Rajeshet al.*, where only 4% had training experience of disaster management.

Almost every participant (99.2%) in present study had knowledge about infection and mode of origin of COVID-19 while 98.4% had knowledge about COVID-19 symptoms. This is similar to studies done by *Ammaret al.*,and *Alawia et al.*, where also 93.5% and 92% participants had correct knowledge about mode of transmitting the infection of COVID[16] but contradictory to results of research carried out by *Mustafa et al.*,and *Khaderet al.*,where only 43.9% and 36.1% of participants had correct knowledge[17-18]

In the present study, 97.2% participants had knowledge about preventive measures of COVID-19 similarly to results (97.2%) observed as 37% of present study participants have registered themselves for the 'Volunteers for COVID-19' initiated by the National Institutional for Transforming India ie NITI Aayog.

This study has few limitations which must be considered. Our study was comprised of a self administered dichotomized questionnaire which is prone to self reporting bias. The study had small sample size and also confined to public health dentists only who responded back via mail therefore findings might not be generalizable. Our study helps in identifying the key areas where public health dentists would be most comfortable in being involved to volunteer and may serve as auxiliary force in COVID-19 management.

**Table 1: Demographic details of study population**

Variable	Frequency	%
<b>Gender</b>		
Males	48	37.8%
Females	79	62.2 %
<b>Age (Years)</b>		
23-35	88	69.3%
36-45	30	23.6%
More than 45	9	7.1%
<b>Educational Qualification</b>		
MDS	70	55.1%
Post Graduate Student	57	44.9%
<b>Years of Experience</b>		
<5 years	85	66.9%
5-10 years	26	20.5%
>10 years	16	12.6%
<b>Affiliation</b>		
Private	104	81.9%
Government	23	18.1%

Table 2: Knowledge, Attitude and Behavior towards volunteering during COVID-19 pandemic among study participants (n=127)

Questions	Participants' n (%)		
	Yes	No	Maybe
<b>KNOWLEDGE</b>			
Do you feel you have the knowledge about origin and mode of infection of covid-19	126 (99.2)	1 (0.8)	NA
Do you feel you have the knowledge about covid-19 symptoms	125 (98.4)	2 (1.6)	NA
Do you feel you have the knowledge about preventive measures of covid-19	124 (97.6)	3 (2.4)	NA
Do you feel you have adequate knowledge about quarantine and isolation protocols	111 (87.4)	16 (12.6)	NA
Do you feel you have the knowledge about covid-19 treatment protocols	103 (81.1)	24 (18.9)	NA
Are you aware about guidelines on covid-19 management for dental professionals given by Dental Council of India (DCI)	113 (89)	14 (11)	NA
<b>ATTITUDE</b>			
Do you feel Dental Public Health professionals should be actively involved in COVID-19 management	104 (81.9)	4 (3.1)	19 (15)
Are you willing to be a part of covid-19 management team	103 (81.1)	6 (4.7)	18 (14.2)
Do you feel you could be a part of pre-screening and diagnosis team for covid-19 management	98 (77.8)	8 (6.3)	20 (15.9)
Do you feel you could be a part of covid-19 administration team	102 (81)	7 (5.6)	17 (13.5)
Do you feel you could be a part of infection control team	89 (70.1)	18 (14.2)	20 (15.7)
Do you feel you could be a part of post discharge counseling and management team for covid-19 patients	101 (79.5)	12 (9.4)	14 (11)
If given an opportunity, are you willing to be a part of covid-19 vaccination team	106 (83.5)	8 (6.3)	13 (10.2)
<b>BEHAVIOR</b>			
Have you ever volunteered for any pandemic control programme	35 (27.6)	92 (72.4)	NA
Have you ever performed any role in covid-19 management	61 (48.4)	65 (51.6)	NA
Have you undergone any certified training programme for covid-19 management	46 (36.2)	81 (63.8)	NA
Do you keep yourself constantly updated regarding COVID-19 management protocols	105 (82.7)	22 (17.3)	NA
Do you feel that formal training should be mandatory for dental professionals to become a part of COVID-19 management team	110 (86.6)	4 (3.1)	13 (10.2)
Do you feel remuneration or reward in any form is required for volunteers to be a part of covid-19 management team	104 (81.9)	10 (7.9)	13 (10.2)
Have you registered yourself for the 'Volunteers for COVID-19' initiated by the National Institutional for Transforming India (NITI Aayog)	47 (37)	80 (63)	NA

NA: Not Applicable

Table 3: Mean values of Knowledge, Attitude and Behavior based on demographic variables

Demographic variable		Knowledge Mean (SD)	Attitude Mean (SD)	Behavior Mean (SD)
Age (Years)	23-35	5.4 ± 0.8	5.4 ± 1.8	4.0 ± 1.5
	36-45	5.6 ± 0.7	5.7 ± 1.7	4.1 ± 1.6
	>45	5.6 ± 0.7	5.8 ± 2.0	3.5 ± 1.2
	<b>P value</b>	0.4	0.4	0.7
Gender	Male	5.6 ± 0.7	5.8 ± 1.6	4.3 ± 1.6
	Female	5.4 ± 0.8	5.1 ± 1.8	3.7 ± 1.4
	<b>P value</b>	0.4	<b>0.04*</b>	<b>0.04*</b>
Educational Qualification	MDS	5.4 ± 0.9	5.5 ± 1.9	4.0 ± 1.6
	PG Student	5.5 ± 0.7	5.5 ± 1.6	3.9 ± 1.4
	<b>P value</b>	0.7	0.6	0.6
Affiliation	Private	5.5 ± 0.7	5.4 ± 1.8	3.9 ± 1.4
	Government	5.4 ± 1.1	6.1 ± 1.5	4.1 ± 1.9
	<b>P value</b>	0.5	<b>0.02*</b>	0.5

SD: Standard Deviation; Kruskalwallis test, Mann-whitney test; \*P ≤ 0.05 statistically significant

Table 4: Correlation Analysis of Knowledge, Attitude and Behavior among study participants

Variable	Knowledge		Attitude		Behavior	
	r	p value	r	p value	r	p value
Knowledge	-	-	-	-	-	-
Attitude	0.189	0.03*	-	-	-	-
Behavior	0.240	0.007*	0.392	0.001*	-	-

Spearman correlation; \* $P \leq 0.05$  statistically significant

## CONCLUSION

This study has put emphasis on the role of dentists in fulfilling the clinical support system during COVID-19 situation. Results of our study can be very valuable in guiding the recruitment of dental public health specialists as volunteers for the COVID-19 frontline. During this unprecedented time, cohesive and coordinated effort of all healthcare professionals is needed to combat the situation. By virtue of their training and community health skills, dental public health professionals can be helpful in various sectors to lessen the burden from the medical professionals.

## REFERENCES

- Singhal T. (2020). A review of coronavirus disease-2019 (COVID-19). *Indian J Pediatr*;87(4):281-6.
- Casella M, Rajnik M, Cuomo A, Dulebohn SC, Di Napoli R. (2021). Features, Evaluation, and Treatment of Coronavirus (COVID-19) [Internet]. Available from: <https://pubmed.ncbi.nlm.nih.gov/32150360/> [Last accessed on 2021 Mar, 23].
- Cucinotta D, Vanelli M. (2020). WHO Declares COVID-19 a Pandemic. *Acta Biomed*;91(1):157-60.
- Sanders JM, Monogue ML, Jodlowski TZ, Cutrell JB. Pharmacologic treatments for coronavirus disease 2019 (COVID-19): A review. *J Am Med Assoc* 2020;323(18):1824–36.
- World health organization. Responding to COVID-19: Real-time training for the coronavirus disease outbreak. 2021. Available from: <https://openwho.org/channels/covid-19>.
- Hodge JG, Gable LA, Calves SH. Volunteer health professionals and emergencies: assessing and transforming the legal environment. *Biosecur Bioterror*. 2005;3(3):216–223.
- Seneviratne CJ, Lau MW, Goh BT. (2020). The role of dentists in COVID-19 is beyond dentistry: voluntary medical engagements and future preparedness. *Front Med*. 7:566.
- Guidelines for Dental Professionals in Covid-19 pandemic situation. Available from: <https://www.mohfw.gov.in/pdf/DentalAdvisoryF.pdf> [Last accessed 2021 Jan 23].
- Leppin A, Aro AR. (2009). Risk Perception to SARS and Avian Influenza: Theoretical Foundations of Current Empirical Research. *Int J Behav Med*.16(1):7–29.
- Barnett DJ, Balicer RD, Thompson CB, Storey JD, Omer SB, Semon NL, et al. (2009). Assessment of local public health workers' willingness to respond to pandemic influenza through application of the extended parallel process model. *PLoS one*.4:e6365.
- Chhabra K, Rajesh G, Shetty P, Prasad K, Chhabra C, Muddapur M. (2014). Disaster management among dental graduates in a private dental institution in India: a pilot study. *Disaster Med Public Health Prep*. 8(1):37-43.
- Rajesh G, Binnal A, Pai MB, Nayak V, Shenoy R, Rao A.(2017). General Dental Practitioners as Potential Responders to Disaster Scenario in a Highly Disaster-prone Area: An Explorative Study. *J Contemp Dent Pract*. ;18(12):1144-52.
- Shahin SY, Bugshan AS, Almulhim KS, AlSharief MS, Al-Dulaijan YA, Siddiqui I, et al.(2020). Knowledge of dentists, dental auxiliaries, and students regarding the COVID-19 pandemic in Saudi Arabia: A cross-sectional survey. *BMC oral health*. 20:1-8.
- Pandita V, Basavaraj P, Singla A, Gupta R, Kaur R, Vashishtha V, et al. (2016). Recasting disaster recovery strategy at dental workplace in Combating crisis—a questionnaire study. *J ClinDiag Res*. 10(4):ZC39-ZC44.
- Ammar N, Aly NM, Folanay MO, Mohebbi SZ, Attia S, Howaldt HP, et al. (2020). Knowledge of dental academics about the COVID-19 pandemic: a multi-country online survey. *BMC Med Educ*;20:1-2.
- Alawia R, Riad A, Kateeb E. (2020). Knowledge and attitudes among dental students about COVID-19 and its precautionary measures: a cross-sectional study. *J Oral Surg Oral Med*. ;27:17.
- Mustafa RM, Alshali RZ, Bukhary DM. Dentists' Knowledge, (2020). Attitudes, and Awareness of Infection Control Measures during COVID-19 Outbreak: A Cross-Sectional Study in Saudi Arabia. *Int J Environ Res Public Health*. 17(23):9016.
- Khader Y, Al Nsour M, Al-Batayneh O.B, Saadeh R, Bashier H, Alfaqih M, et al. (2020). Dentists' Awareness, Perception, and Attitude Regarding COVID-19 and Infection Control: Cross-Sectional Study Among Jordanian Dentists. *JMIR Public Health.Surveill*;6(2):e18798.

## CITATION OF THIS ARTICLE

Priyanka, C Khurana, S Tandon, S Pradhan. Willingness to Volunteer during the Covid-19 Pandemic among Dental Public Health Professionals in India. *Bull. Env.Pharmacol. Life Sci., Spl Issue [2]: 2022: 162-166*