IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 21, Issue 8 Ser.7 (August. 2022), PP 67-72
www.iosrjournals.org

Knowledge and Perception of Dental Professionals Regarding the Use of Various Safety Protocols During and After Dental Aerosol Procedures in Covid-19 Pandemic.

AUTHOR

ABSTRACT
Background
The aim of the present study is to assess the knowledge and perception of safety protocols used before and after dental aerosol procedures among Dental professionals.
MATERIALS AND METHODS*: An online survey was conducted with a self-prepared questionnaire with a sample size of 354 participants consisting of post graduate students, dental practitioners who work in private/government institute/hospitals. The questionnaire was prepared on Google Forms and the link was circulated to postgraduate students and dental practitioners via email and WhatsApp platforms. Data was analyzed at 95% confidence intervals with a p-value <0.05 considered as statistically significant. The results of the study was tabulated.*
RESULTS: 94.9% of the participants perform aerosol generating procedure, 76.8% participants use PPE during the procedure. 43.2% of the participants prefer reusable elastomeric respirator with cartridges. 37.9% of participants responded ventilation to be the preferred method. 75.4% of the participants feel incorrect doffing of the PPE can increase the chances of contracting corona virus. 83.3% of the participants felt using PPE reduces performance and skills during dental aerosol procedure.
CONCLUSION: The present study revealed that 76.8% of the participants used PPE during aerosol generating procedures, 54% and 39.5% of the participants knew the first procedure in donning and doffing of PPE respectively, 73.7% of the participants knew which area to doff the PPE in whereas only 48% knew the correct color of the bag in which to dispose the PPE and only 49.7% of the participants knew when to fumigate the aerosol generated surgical area.
KEY WORDS*: dental aerosol generating procedures, survey study, safety protocols, COVID-19, knowledge and perception.*

Date of Submission: 06-08-2022 Date of Acceptance: 21-08-2022

I. INTRODUCTION

On December 30, 2019, multiple cases of pneumonia of unknown etiology were identified in Wuhan city in the People's Republic of China. WHO named it as COVID-19 and declared it as a public health emergency of international concern because of its highly infectious nature.[1] COVID-19 is caused due to SARS-cov-2 virus which is a single-stranded RNA with protein spike, envelope membrane, and nucleic capsid. In most of the cases, the average incubation period is of 4–14 days[3]. The clinical symptoms are varied and manifest as fever, nasal congestion, headache, cough and sore throat, shortness of breath, nausea, vomiting, and diarrhea. COVID-19 is spread among humans through all kinds of droplet infection including through sneezing and coughing[4].

COVID-19 has so far affected a large number of health professionals around the world[5]. Since dentists work in close proximity to body fluids such as saliva and blood in the oral cavity; they are at a high risk to get infected[6]. The emergence of COVID-19 made us realize that even though we have been working in the field of dentistry and handling clinical cases with HIV, hepatitis, tuberculosis, and other infectious diseases, we were never prepared for a pandemic with such a high impact on community health[7].

The first case of COVID‑19 in India, a student who had returned to his home for a vacation from Wuhan University, was confirmed on January 30 in Kerala's Thrissur district. According to the Ministry of Health and Family Welfare, Government of India, by August 1, 2020 India already had more than 1.5 million total cases worth more than 15 million worldwide, which was ever increasing by each passing day[8].

Dentists work in an environment of aerosol and splatter. The airborne material can spread at a distance of eighteen-inches from the operator site[9].

Within the dental office, dental practitioners, members of the dental team, and patients can potentially be exposed to aerosolized infectious agents in clinical and non-clinical settings through face-to-face communications, exposure to saliva, blood and other body fluids, and indirectly, by contact with surfaces that may serve as fomites (i.e., any inanimate object which when contaminated with or exposed to an infectious agent can then transfer that agent to a new host). The exact infectious capability of AGDPs is not currently known since there is a high level of heterogeneity amongst such aerosols, including their aerodynamics, microbial bioload, and pathologic potential.This heterogeneity may be due to the source of the aerosol (i.e., aerosols from an ultrasonic scaler may differ from those generated by a handpiece), the physical plan within the dental operatory (doorways, air flow, air filtration systems, etc.), and characteristics of individual patients [(10-12)].

To protect the dental community, the Indian Dental Association has issued guidelines to suspend elective or planned dental treatment and carry out only emergency procedures. To have minimal or no contact with patients, telemedicine or telephonic communication is being advised. Dentists are in a state of psychological distress and fear while working in such an unprecedented situation. Dentists, among various health professionals, fall at the highest risk of contracting an infection.

In order to resolve and monitor its spread, dentists should ideally maintain a high degree of competence and honesty. The Centers for Disease Control and Prevention (CDC), the American Dental Association (ADA), and the WHO are providing specific recommendations for dentists to control the spread of COVID‑19. Such precautions include PPE, washing of hands, patient assessment, proper usage of rubber dam, anti‑retraction handpieces, oral rinsing before the procedure, and clinic disinfection [(13-15)] Dentistry is undergoing a phase where there is a need to enhance and improvise the way of practice. This survey was conducted among the dental professionals to assess the awareness and knowledge about the use of safety protocols during and after aerosol generating procedures in COVID-19 pandemic.

II. MATERIALS AND METHODS

The present study was conducted from June 2021 to August 2021. The study was designed using Google forms using a self-prepared questionnaire. The sample size (340) was calculated based on ease of use of safety protocols. A total of 354 dental professionals consisting of post graduate students, dental practitioners who work in private/government institute/hospitals participated in this study.

The Inclusion Criteria were:

- Dentists- practicing in Punjab either in clinical practice/ college belonging to private/government institution.
- Dental post graduate students.

The Exclusion criteria were:

- Dental undergraduate students

The questionnaire were structured based on CDC (Centers for disease control and prevention) guidelines for COVID-19 safety protocols and submitted to the institutional review board for validation. It consisted of questions related to the accurate precautionary measures adopted by the dental practitioners during/after an aerosol generating procedure and which would be the preferred methods the participants are comfortable with. Participants were given a short introduction about the purpose of the study. The Questionnaire comprised of two parts. The first part comprised of a set of multiple-choice questions relating to age, region of practice and designation. The second part comprised of single correct answer type of questions about COVID-19 safety protocols to be used during and after a dental aerosol generating procedure and multiple-choice questions related to individual's perception of using those safety protocols.

PROCEDURE:

The questionnaire was prepared on Google Forms and the link was circulated to postgraduate students and dental practitioners across Punjab via email and WhatsApp platforms. Data analysis was done in Google forms.

STATISTICAL ANALYSIS:

Data was collected, coded and fed in SPSS for statistical analysis. Descriptive statistics analysis was carried out including frequency and percentage. Continuous data were presented as mean and standard deviation categorical data as number and percentages.Data was analysed at 95% confidence intervals with a P value <0.05 considered as statistically significant. The results of the study was tabulated.

III. RESULTS

Among the 354 participants of the survey, 36.2% (128) were 25-30 years old, 49.4% (175) were 31-45 years old and 14.4% (51) were over 45 years of age. 62.1% (220) of the participants were from semi urban

areas, 31.4% were from urban areas and 6.5% (23) were from rural areas (Table 1). Around 37.9% (134) participants were postgraduate students (Table 1).

According to the present study, 94.9% of the participants performed aerosol generating procedures in a dental set up during the covid -19 pandemic and only 4.2% (15) did not. Only 76.8% (272) of the participants used PPE during aerosol generating procedures whereas 12.4% (44) did not. Also, 78.2% of the participants wore eye protective equipment during dental aerosol generating procedures whereas 11.6% (41) did not (Table 2).

Only 15.5% participants knew the recommended eye protective equipment correctly. Also 54% and 39.5% of the participants knew the first procedure in donning and doffing of PPE respectively. 73.7% of the participants knew which area to doff the PPE in whereas only 48% knew the correct color of the bag in which to dispose the PPE. Also, only 49.7% of the participants knew when to fumigate the aerosol generated surgical area. (Table 3).

43.3% of the participants wore reusable elastomeric respirator with cartridges and 49.4% of the participants thought the combination of N95 Mask and Surgical Mask provided a better seal. 41.22 felt that a face shield provided a good field of view during an aerosol generating procedure. 59.9% of the participants used disposable/ single use surgical gown during an aerosol generating procedure and 37.9% of the participants felt exhaust fans and windows in surgical area reduced the pathogens in the air, generated during any aerosol procedure. 83.3% of the participants felt that the current COVID-19 safety protocols of using PPE reduce your performance and skills during any aerosol procedure and 75.4% of the participants felt that incorrect doffing of PPE after an aerosol generating procedure had a higher chance of contracting Corona Virus. On performing chi square goodness of fit test, there was significant difference between the observed and the expected frequencies in the answers of all the perception-based question (P value <0.05). (Table 4).

IV. DISCUSSION

Currently the COVID-19 pandemic is a crucial matter of debate across the world. The most commonly affected are the healthcare workers and patients who are in need for emergency treatments. Proven transmission routes of COVID-19 from human to humans are droplets, saliva, or direct

Contact. Dentists are considered to be at high-risk of contracting the Corona virus as dentists work in close proximity to the oral and nasal cavities. Most dental procedures generate a significant number of droplets and aerosols posing potential risk of transmission. Hence appropriate safety protocols need to be followed during and after a dental aerosol generating procedure.

A review conducted by Zemouri et al. In 2017showed that 38 types of microorganisms could be found in the air of the dental clinic, including *Legionella pneumophila*, the causative agent of severe pneumonia[16]. Ricci et al in 2012 reported of patients acquiring pneumonia after being treated at a dental clinic[17]. A study conducted by Wang et al in 2004, examined the oral cavity of SARS patients and found large amount of SARS-CoV RNA in their saliva ((7.08×10^3) to (6.38×10^8) copies/ml), suggesting the possibility of coronavirus transmission through oral droplets[18].

The emergence of the COVID-19 pandemic has thrown light on how important is infection control in a dental setup. Failure to follow any of the infection control protocols due to lack of information and understanding of the current and correct policies, presents a state of ignorance towards the dangers of cross infection between healthcare professional and patient.

Arora S et al in 2020, conducted a survey to assess the knowledge, risk perception, attitude, and preparedness of the dentists in India about COVID-19. A cross-sectional online survey was carried out among registered dentists in India. A self-administered, anonymous, questionnaire comprising of 25 close-ended questions was circulated to gather the relevant information. A total of 765 dentists submitted a response, out of which 646 complete responses were included in the statistical analysis. During the survey, it was found that varied technological advances are offered to dentists to ensure good clinical practice. They also concurred that there was a need to standardize the tools and measures available to carry out dental practices[19].

Gambarini G et al in 2020, took a survey on 500 Italian practitioners concerning the perceived risks of aerosol contamination in COVID-19 times and their attitude toward modifications of treatment protocols to reduce this risk. 70% of the dentists consider the dental practice more dangerous for the diffusion of COVID-19 than other social activities. 5% consider dental practice more dangerous only for the patients. Aerosol contamination was perceived as a risk from the most dentist (70%), but there was agreement on the most dangerous way of cross infection in dental settings. Most of the dentists (55%) believed implementations in their protocols were needed to reduce the risk of COVID-19 infections. The survey demonstrated that COVID-19 had a great impact on dental practitioners; it increased not only fear of aerosol contamination during dental treatments but also influenced the fear of close contacts[20].

Ahmed MA et al in 2020 conducted a study to evaluate the patient's knowledge, attitude, and practice of cross infection control in dentistry during COVID-19. A large number of participants also agreed that proper

disposal of waste is utmost important for cross-infection control and patient waiting area should also be marked with social distancing sign (82.66%). However, when asked about the common route of COVID-19 transmission in dentistry, (45.5%) participants were of the opinion that it is not through aerosol (water droplets) generated during dental procedures[21].

Dental schools, dental councils are responsible for educating appropriate infection control measures and ensuring healthier and safer working conditions. Strict implementation these protocols in practice is the responsibility of the dental professional.

Dental treatments require high levels of concentration and focus by the dentist. But these enhanced safety measures may have a deteriorating effect on the performance of the dental professional during an aerosol generating procedure. Breathing difficulties, fogging of eye wear/ face shields, excessive sweating and heat produced while wearing PPE can affect focus of the dental professional during clinical procedures. Hence this questionnaire is designed to assess the knowledge and ease of use of the safety protocols during and after a dental aerosol generating procedure.

In the present study, 95% of the participants perform aerosol generating procedure, 76.8% participants use PPE during the procedure. 43.2% of the participants prefer reusable elastomeric respirator with cartridges, which is a good option as it has a 99.9% particulate filter. The only disadvantage is that it is expensive compared to N95/ surgical mask. In terms of providing good seal, 49.4% participants chose N95 plus surgical mask. Eye safety wear is important to prevent aerosols and body fluids from entering the eye. Majority of the participants preferred safety glasses as it provides good seal compared to the face shield.

According to the current CDC guidelines, the correct sequence of donning a PPE is in this order wash hands - wear gown - wear mask/respirator - wear gloves and doffing a PPE is in this order remove gloves - remove gown - remove eye wear - remove mask/respirator. In this study, only 54% of the participants chose the right answer of washing hands before wearing any other equipment and removing gloves first before doffing the rest of the PPE. Only 39.5% of the participants answered gloves has to be removed first while doffing a PPE. Eye protection is an important protective measure while performing aerosol generating procedure. In this study only 15.5% of the participants answered eye protective equipment is recommended during aerosol procedures.75.4% of the participants feel incorrect doffing of the PPE can increase the chances of contracting corona virus.

48% of the participants responded that a PPE should be disposed off in a blue color-coded bag. According to AIIMS biomedical waste guidelines the PPEs should be disposed off in a red color-coded bag. When asked which would reduce the pathogens in the air generated during aerosol procedures, 37.9% of participants responded ventilation to be the preferred method. Teichert-Filho R et al in 2020, conducted a study using a protective device to reduce aerosol dispersion in dental clinics during COVID-19 pandemic. The device consists of a rigid translucent acrylic structure (methyl poly-methacrylate), adjusted to the dental chair, involving the patient's head, neck and chest. There is also a piping system to generate negative pressure, for aspiration and filtering of the air inside the device chamber. The operator works through small holes in the acrylic structure, to reduce contact with the micro particles arising from aerosols during dental procedures. Simulated dental procedures using a fluorescent dye in the water of the dental equipment were carried out, with and without the use of the device. The presence of the dye was analyzed at various locations, such as on personal protective equipment (PPE), the dental chair and on the clinic floor. Results showed that in the simulated dental procedure using the device, the dye was observed only on surgical gloves, apron (fists), inside the pipe system and internal walls of the acrylic chamber[22]. According to CDC guidelines, a closed surgical area should be fumigated after every aerosol procedure. In this study 49.7% of the participants answered that it should be fumigated after every aerosol procedure. When participants were asked if the current COVID-19 safety protocols of using PPE reduce your performance and skills during any aerosol procedure, 83.3% of the participants answered yes, 10% answered may be. Since PPE traps heat, it can be uncomfortable for the operator when performing skillful dental procedures which requires concentration. A light and breathable material should be devised to counter this issue.

The above knowledge-based assessment shows that >50% of the participants need to educate themselves about the correct safety protocol to be adopted during a dental aerosol generating procedure.

Despite implementing all the possible measures to reduce bias, the study still has some limitations. The major limitation was short time duration for data collection assuming the rapid effect this pandemic is currently having on dental health professionals, which could have resulted in a smaller than expected sample. The data collection was done only on Google forms the link for which was sent to the participants on E-mail and WhatsApp platforms so it could have resulted in the inclusion of dentists practicing in states outside Punjab. Some regions across the state were more affected than others which may influence the administration and safety protocols implemented by a particular region that could also influence the result of a study. Therefore, the findings of the current survey should be interpreted cautiously and should not be generalized.

V. CONCLUSION

The present study revealed that 76.8% of the participants used PPE during aerosol generating procedures, 54% and 39.5% of the participants knew the first procedure in donning and doffing of PPE respectively, 73.7% of the participants knew which area to doff the PPE in whereas only 48% knew the correct color of the bag in which to dispose the PPE and only 49.7% of the participants knew when to fumigate the aerosol generated surgical area. In conclusion, we recommend that all dental professionals shouldpursue the CDC and WHO guidelines from the respective websites and implement them in their clinics/ departments.

REFERENCES

[1]. Huang X, Wei F, Hu L, Wen L, Chen K. Epidemiology and clinical characteristics of COVID-19. *Arch Iran Med*. 2020;23(5):268–271. doi:10.34172/aim.2020.09

[2]. Chen Y, Liu O, Guo D. Emerging coronaviruses: genome structure, replication, and pathogenesis. *J Med Virol*. 2020;92(4):418–423. doi:10.1002/jmv.25681

[3]. Guan WJ, Ni ZY, Hu Y, et al. Clinical characteristics of coronavirus disease 2019 in China. *N Engl J Med*. 2020;382(18):1708–1720. doi:10.1056/NEJMoa2002032

[4]. Chan JF, Yuan S, Kok KH, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *Lancet*. 2020;395 (10223):514–523. doi:10.1016/S0140-6736(20)30154-9 .

[5]. Zhang Z, Liu S, Xianf M, et al. Protecting healthcare personnel from 2019-nCov infection risks: lessons and suggestions. *Front Med*. 2020;1–3.

[6]. Cleveland JL, Gray SK, Harte JA, et al. Transmission of blood borne pathogens in US dental health care settings. *J Am Dent Assoc*. 2016;147:729–738. doi:10.1016/j.adaj.2016.03.020

[7]. Arora S, Saquib SA, Attar N, Pimpale S, Zafar KS, Saluja P, Abdulla AM, Shamsuddin S. Evaluation of knowledge and preparedness among indian dentists during the current COVID-19 pandemic: a cross-sectional study. Journal of Multidisciplinary Healthcare. 2020;13:841.

[8]. Raza M, Jain S, Sharma P, Kumar P, Shetty D, Juneja A. Awareness related to COVID 19 among dental health-care students and professionals of national capital region: A cross sectional study. Indian Journal of Dental Sciences. 2020 Oct 1;12(4):209.

[9]. Harrel SK, Molinau J. Aerosols and splatter in dentistry: a brief review of literature and infection control implications. *J Am Dent Assoc*. 2004;135:429–437. doi:10.14219/jada.archive.2004.0207

[10]. Kumar PS, Geisinger ML, Avila-Ortiz G. Methods to mitigate infection spread from aerosol-generating dental procedures. Journal of Periodontology. 2021 Jun;92(6):784-92.

[11]. To KK, Tsang OT, Yip CC, Chan KH, Wu TC, Chan JM, Leung WS, Chik TS, Choi CY, Kandamby DH, Lung DC. Consistent detection of 2019 novel coronavirus in saliva. Clinical Infectious Diseases. 2020 Jul 28;71(15):841-3.

[12]. Rodríguez-Morales AJ, MacGregor K, Kanagarajah S, Patel D, Schlagenhauf P. Going global–Travel and the 2019 novel coronavirus. Travel medicine and infectious disease. 2020 Jan;33:101578.

[13]. Khader Y, Al Nsour M, Al-Batayneh OB, Saadeh R, Bashier H, Alfaqih M, Al-Azzam S. Dentists' awareness, perception, and attitude regarding COVID-19 and infection control: cross-sectional study among Jordanian dentists. JMIR public health and surveillance. 2020;6(2):e18798.

[14]. Modi PD, Nair G, Uppe A, Modi J, Tuppekar B, Gharpure AS, Langade D. COVID-19 awareness among healthcare students and professionals in Mumbai metropolitan region: a questionnaire-based survey. Cureus. 2020 Apr;12(4).

[15]. Raza M, Jain S, Sharma P, Kumar P, Shetty D, Juneja A. Awareness related to COVID 19 among dental health-care students and professionals of national capital region: A cross sectional study. Indian Journal of Dental Sciences. 2020 Oct 1;12(4):209.

[16]. Zemouri C, de Soet H, Crielaard W, Laheij A. A scoping review on bio-aerosols in healthcare and the dental environment. PloS one. 2017 May 22;12(5):e0178007.

[17]. Ricci ML, Fontana S, Pinci F, Fiumana E, Pedna MF, Farolfi P, Sabattini MA, Scaturro M. Pneumonia associated with a dental unit waterline. The Lancet. 2012 Feb 18;379(9816):684.

[18]. Wang WK, Chen SY, Liu IJ, Chen YC, Chen HL, Yang CF, Chen PJ, Yeh SH, Kao CL, Huang LM, Hsueh PR. Detection of SARS-associated coronavirus in throat wash and saliva in early diagnosis. Emerging infectious diseases. 2004 Jul;10(7):1213.

[19]. Arora S, Saquib SA, Attar N, Pimpale S, Zafar KS, Saluja P, Abdulla AM, Shamsuddin S. Evaluation of knowledge and preparedness among indian dentists during the current COVID-19 pandemic: a cross-sectional study. Journal of Multidisciplinary Healthcare. 2020;13:841.

[20]. Gambarini G, Galli M, Gambarini E, Di Nardo D, Seracchiani M, Obino FV, Patil S, Bhandi S, Miccoli G, Testarelli L. Fine aerosols and perceived risk of COVID-19 among Italian dental practitioners: An experimental survey. J Contemp Dent Pract. 2020 Jun 1:599-603.

[21]. Ahmed MA, Jouhar R, Adnan S, Ahmed N, Ghazal T, Adanir N. Evaluation of Patient's Knowledge, Attitude, and Practice of Cross-Infection Control in Dentistry during COVID-19 Pandemic. European Journal of Dentistry. 2020 Dec 15;14(S 01):S1-6.

[22]. Teichert-Filho R, Baldasso CN, Campos MM, Gomes MS. Protective device to reduce aerosol dispersion in dental clinics during the COVID-19 pandemic. International endodontic journal. 2020 Nov;53(11):1588-97

TABLES

Table 1: Demographic details of the survey participants

Variable		Frequency	Percentage
Age	25-30 years	128	36.2
	31-45 years	175	49.4
	> 45 years	51	14.4
Geographical Area	Rural	23	6.5
	Semi-urban	220	62.1
	Urban	111	31.4
Designation	Dentist at a Govt. organization	61	17.2
	Dentist at a Private Dental Institute/Hospital	67	18.9
	PG student	134	37.9

	PG student, Dentist at a Private Dental Institute/Hospital	3	.8
	Private practitioner	84	23.7
	Private practitioner, Dentist at a Private Dental Institute/Hospital	3	.8
	Private practitioner, PG student	1	.3

Question	Options	Frequency	Percentage
Do you perform any aerosol generating procedures in a dental set up during the current COVID-19 pandemic?	Maybe	3	.8
	No	15	4.2
	Yes	336	94.9
Do you wear Personal Protective Equipment (PPE) during aerosol generating procedures?	Maybe	36	10.2
	No	44	12.4
	Yes	272	76.8
Do you wear an Eye Protective Equipment during a dental aerosol generating procedure?	Maybe	36	10.2
	No	41	11.6
	Yes	277	78.2

Table 2: Participant responses for practice-based questions

Question	Correct Answer Respondents [n (%)]
Which according to you is a recommended eye protective equipment?	Both 55(15.5%)
During DONNING of PPE, which of these do you perform first?	Wash Hands 191(54.0%)
During DOFFING of PPE, which do you remove first?	Gloves 140 (39.5%)
In which area do you doff your PPE?	Separate designated area 261(73.7%)
In which color coded bag should you dispose the PPE after an aerosol generating procedure?	Blue 170(48.0%)
When should you fumigate the aerosol generated surgical area?	After each aerosol generating procedure 176(49.7%)

Table 3: Participant responses for knowledge-based questions

Question	Option	Frequency	Percentage	P-value
Which of these do you wear during an aerosol generating procedure?	N95 Mask	45	12.7	.000
	N95 Mask + Face shield/ Safety Glasses	63	17.8	
	N95 Mask + Face shield/Safety Glasses + Surgical Gown	66	18.6	
	N95 Mask + Surgical gown	27	7.6	
	Reusable elastomeric respirator with cartridges	153	43.2	
Which respiratory protective equipment do you think provides a better seal during a dental aerosol generating procedure?	N95 Mask	93	26.3	.000
	N95 Mask + Surgical Mask	175	49.4	
	Reusable Elastomeric Respirator with Cartridge	86	24.3	
Which eye safety wear do you think provides a good field of view during an aerosol generating procedure?	Both	23	6.5	.000
	Face shield	146	41.2	
	None	23	6.5	
	Safety Goggles	162	45.8	
In your PPE kit which type of surgical gown/ body suit do you use during an aerosol generating procedure?	Disposable/ single use surgical gown	212	59.9	.000
	Reusable /washable surgical gown	142	40.1	
Which among these do you feel would reduce the pathogens in the air, generated during any aerosol procedure?	exhaust fans and windows in surgical area	134	37.9	.000
	High volume suction	85	24.0	
	patient aerosol box	68	19.2	
	Use of rubber dams	67	18.9	
Do you feel the current COVID-19 safety protocols of using PPE reduce your performance and skills during any aerosol procedure?	Maybe	36	10.2	.000
	No	23	6.5	
	Yes	295	83.3	
Do you think incorrect doffing of PPE after an aerosol generating procedure has a higher chance of contracting Corona Virus?	Maybe	58	16.4	.000
	No	29	8.2	
	Yes	267	75.4	

Table 4: Participant responses for perception-based questions