

# Private Dental Clinic Management Experiences during the COVID-19 Crisis in Bangkok, Thailand: A Qualitative Study

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## Abstract

This study aimed to describe the experiences of private dental clinic providers in Bangkok managing their clinics during the COVID-19 crisis and to propose suggestions. A qualitative study was conducted. Nineteen private dental clinics were purposive recruited through snowball sampling to get various characteristics of clinic and were in-depth interviewed with semi-structured questionnaire. Content analysis was used to analyze the data. The study found that all dental clinics faced challenges in patient management due to various regulations, such as, COVID-19 screening was required before providing dental care, clinic environment and chair-side practices should reduce aerosol particles by improving ventilation system, air conditioning with HEPA (high efficiency particulate air) filters and extraoral suction (EOS). Personal protective measures such as isolation gowns, face masks especially double surgical masks, N95 respirators, or combinations of both, were emphasized. The study also revealed that some clinic owners felt the regulations were excessive or impractical, especially the ventilation systems. It was suggested that clear and feasible guidelines, with appropriate support to comply with strict dental clinic standards were needed to maximize benefits to the public and dental professionals. Overall, the study highlighted the

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Received 5 February 2024; Revised 7 May 2024; Accepted 5 June 2024

**Suggested citation:** Luksamijarulkul N, Yodbutr A, Wattanakul C, Sawangsri G, Tussanapirom T. Private dental clinic management experiences during the COVID-19 crisis in Bangkok, Thailand: a qualitative study. *Journal of Health Systems Research* 2024;18(2):264-76.

นัชชา ลักขมิจรรกุล, อารพารัตน์ ยอดบุตร, ชานอน วัตตะนกุล, กัญญาภัทสรส์ สว่างศรี, อีร์วัฒน์ ทิศนภิมย์. ประสบการณ์การจัดการคลินิกของผู้ให้บริการทันตกรรมเอกชนในช่วงวิกฤตโควิด-19 ในกรุงเทพฯ ประเทศไทย: การศึกษาเชิงคุณภาพ. *วารสารวิจัยระบบสาธารณสุข* 2567;18(2):264-76.

importance of dental clinic safety measures during the COVID-19 crisis and the need for ongoing support and regulation to ensure public safety and the continuation of dental services.

**Keywords:** COVID-19, private dental clinics, clinic management experiences, qualitative study

## ประสบการณ์การจัดการคลินิกของผู้ให้บริการทันตกรรมเอกชนในช่วงวิกฤตโควิด-19 ในกรุงเทพฯ ประเทศไทย: การศึกษาเชิงคุณภาพ

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### บทคัดย่อ

การศึกษานี้มีวัตถุประสงค์เพื่อถอดบทเรียนประสบการณ์ของผู้ให้บริการคลินิกทันตกรรมเอกชนในกรุงเทพมหานครในการบริหารจัดการคลินิกในช่วงวิกฤตการระบาดของไวรัสโควิด-19 และเสนอแนวทางการแก้ไขปัญหาดังกล่าว การศึกษาใช้ระเบียบวิธีการวิจัยเชิงคุณภาพ โดยเลือกคลินิกทันตกรรมเอกชน 19 แห่งแบบเจาะจงเพื่อทำการสัมภาษณ์เชิงลึกด้วยแบบสอบถามกึ่งโครงสร้าง และวิเคราะห์ข้อมูลด้วยการวิเคราะห์เนื้อหา (content analysis) การศึกษาพบว่า คลินิกทันตกรรมพบกับความท้าทายในการจัดการผู้ป่วยเนื่องจากแนวปฏิบัติที่หลากหลาย ในช่วงวิกฤตการระบาด การตรวจหาไวรัสโควิด-19 เป็นสิ่งที่จำเป็นก่อนให้การรักษาทันตกรรม ในการปรับปรุงสภาพแวดล้อมของคลินิกและการปฏิบัติงานข้างเก้าอี้ คลินิกเน้นลดการกระจายของละอองฝอยโดยการปรับปรุงระบบระบายอากาศ เครื่องปรับอากาศ และการใช้เครื่องกรองอากาศ HEPA (high efficiency particulate air) และ เครื่องดูดละอองฝอยภายนอก (extraoral suction: EOS) มีการใช้มาตรการป้องกันส่วนบุคคล เช่น การสวมเสื้อคลุมกันน้ำและหน้ากากป้องกันละอองฝอย ทั้งใส่หน้ากากผ่าตัดสองชั้น หน้ากาก N95 หรือการใส่หน้ากากทั้งสองชนิดพร้อมกัน การศึกษายังพบว่าเจ้าของคลินิกส่วนหนึ่งรู้สึกว่าแนวปฏิบัติมีความสิ้นเกิน (excessive) หรือไม่สามารถปฏิบัติตามได้ โดยเฉพาะในเรื่องของระบบระบายอากาศ กลุ่มตัวอย่างเสนอว่าควรมีคำแนะนำที่ชัดเจนและสามารถปฏิบัติตามได้จริง รวมถึงมีการสนับสนุนที่เหมาะสม ทั้งนี้เพื่อเป็นการควบคุมมาตรฐานคลินิกทันตกรรม เพื่อเพิ่มประโยชน์สูงสุดสำหรับสาธารณสุขและวิชาชีพทันตกรรมในอนาคต โดยรวมแล้วการศึกษาเน้นความสำคัญของมาตรการความปลอดภัยของคลินิกทันตกรรมในช่วงวิกฤตการระบาดของโควิด-19 และความจำเป็นของการสนับสนุนและการควบคุม เพื่อให้มั่นใจในความปลอดภัยของสาธารณสุขและการให้บริการทันตกรรมต่อไป

**คำสำคัญ:** โควิด-19, คลินิกทันตกรรมเอกชน, การบริหารคลินิก, การศึกษาเชิงคุณภาพ

### Background and Rationale

Physical distancing, wearing masks or face shields in public, and working from home, were the regulations proposed to counteract SARS-CoV-2, a novel strain of coronavirus “COVID-19” that emerged at the end of 2019.<sup>(1)</sup> The incubation period of the infection was from 2 to 14 days.<sup>(2)</sup>

Virus detection is possible within 20 days after the onset of symptoms including fever, cough, myalgia, fatigue, sputum production, headache, and hemoptysis with the possibility of abnormal chest computerized tomography (CT). Moreover, over 80% of infected persons were asymptomatic or with mild symptoms.<sup>(3,4)</sup> Common transmission



routes include droplet and aerosol from cough and sneezes of infected persons, direct contact with mucous membranes of oral cavity, eye, and nose.<sup>(5)</sup> The World Health Organization (WHO) announced that the spreading of the disease as pandemic on 11 March 2020.<sup>(6)</sup>

Dentists and oral health professionals face greatest risk of contracting COVID-19 as they interact closely with patients.<sup>(2,7)</sup> Their work causes constant exposure to body fluids, such as blood and saliva, as well as the spread of aerosols during dental procedures.<sup>(8,9)</sup> Early 2020, COVID-19 outbreaks started in Bangkok, Thailand. An initial wave of the infection peaked on 22 to 25 of March 2020, Thai Government decided to reinstate the Royal Decree for Public Administration in Emergency Situation, B.E. 2548 (2005). To ensure public safety, the Center of Diseases Control and Prevention (CDC), Ministry of Public Health as well as the Thai Dental Council and the Dental Association of Thailand issued the infection control guidance and regulations for healthcare facilities, with key concepts of reducing infection risk by isolating patients and protecting healthcare personnel. Such aerosol generating procedures (AGPs) should be performed with maximum caution of air changes per hour (ACH) protocol, or avoided completely.<sup>(3)</sup> Dental professionals, especially ones in clinics and private sectors were dramatically affected by this protocol, since AGPs were necessary in most of their treatments. These adjustments to minimize risks altered the financial opportunity of dentistry, resulting in a significant increase in cost and lower

income.<sup>(10)</sup>

Most private dental clinics had faced difficulties in the aspect of certain limitations and funding in keeping up with the regulations. Air ventilation in some dental clinics might not meet the minimum standards required to effectively prevent aerosol spread, further highlighting the impact COVID-19 had on the current dental practices across the country. There has been no study on dental clinic management under pandemic in Thai context. This study aimed to qualitatively describe the experiences of private dental clinic providers in Bangkok in managing their clinics during the COVID-19 crisis.

## Methodology

### Study design and participants

A qualitative study was carried out using in-depth interviews. An empirical phenomenological approach<sup>(11)</sup> was used to obtain detailed descriptions of clinic management experiences. The focus of phenomenological research was to describe commonalities of experiences across the target group. Participants were recruited through purposive sampling to get various locations and characteristics of clinics (from small clinic to private hospital) by snowball sampling asking clinic owners who were likely to participate in this research. The selection criteria were: i) clinic located in Bangkok; ii) non-government or non-profit organization; iii) legally registered clinic. The sample size was determined by data saturation - i.e., at

the point where no new themes from participants' experiences emerged. A total of 19 clinic owners of selected private dental clinics were included. Variations in years of work experience, and sizes of dental clinics were obtained to reach diversity of patient care experiences during COVID-19 epidemics.

Data were collected by in-depth interviews and observations with semi-structured questionnaire following key concepts of CDC infection control regulations of facility risk reduction, isolating patients, improving clinic air environment from AGPs, and protecting healthcare personnel.<sup>(3)</sup> Qualitative questions covered general clinic management, patient appointments for dental treatment and follow-up, environmental improvement in clinics emphasizing AGPs and chair-side practices, and personal protective measures, including limitations and suggestions regarding practice protocols in response to the issued regulations. The content validity of semi-structured tool was approved by 3 experts in dental public health field. In-depth interviews were done at a time convenient for participants between February and March 2021. With participant permission, all interviews were audio-recorded. Participants' age, marital status, years of work experience, years of clinic operation, and number of days per week and hours per day in services were stated before the proper questions were partaken. A broad data-generating question was first used: "please tell me about your experiences of general clinic management during COVID-19 epidemic". Open-ended

follow-up questions were used to obtain detailed descriptions. The final question was the limitations and suggestions regarding practice protocols proposed in response to the issued regulations. Probing questions, such as "please tell me more about that", were used to enhance the depth of discussion.

### Data analysis

Content analysis was employed as the primary method for analyzing qualitative data. The process involved thorough transcript readings to gain an understanding of conveyed meanings, identifying significant phrases and restating them in general terms, formulating meanings and validating meanings through research team discussions, identifying and organizing themes into clusters and categories, and developing a full description of themes. Agreement between authors was done by triangulation using multiple sources of information, interview, observation, and other documents to gain a comprehensive understanding of a topic. All authors agreed with the findings and chose the highlighted quotations. Transferability was established by considering variations of participant characteristics and sufficient quotations collected through in-depth interviews. An audit trail was maintained to ensure all analysis steps traced back to original interviews in the study.

### Ethics approval

Ethics approval for this research was received from the institutional review board at Faculty of

Dentistry, Mahidol University (COA.NO.MU-DT/PY-IRB 2020/051.0809). The study objectives and voluntary nature of the study were explained to participants, and informed consent was obtained before each interview. Names of the dental clinics and business providers remained anonymous. Confidentiality was assured by using numbers instead of names (e.g., clinic no. 1, 2, etc.) and removing identifying information from the transcripts. All recorded data were saved on a password-protected computer.

## Results

### General clinic management of studied dental clinics

Nineteen participating dental clinics were 13 small (1-4 dental chairs), 3 medium (5-8 dental chairs), and 3 large clinics (9-12 dental chairs). During a period of study, 11 clinics accepted only Thai patients, and 7 clinics accepted both Thai and foreign patients. One clinic experienced severe business loss and finally closed (clinic no. 15 in Table 1), therefore, only 18 clinics' reflections regarding dental clinic management experiences during the COVID-19 crisis were qualitatively described.

For general clinic management, most clinics shared common traits in days of operation as five clinic owners decided to close their clinics temporarily after Thai Government reinstating the royal decree on public administration emergency on 25 March 2020. However, thirteen clinics remained open. This could categorize clinics ac-

cording to their interval of operating time during the COVID-19 epidemics in Thailand (Figure 1) as follows:

- Group A: 8 clinics that re-opened before the absence of new domestic COVID-19 cases
- Group B: 7 clinics that re-opened after the absence of new domestic COVID-19 cases
- Group C: 3 clinics that remained opened after the national lockdown measures were implemented.

### Patient management: patient appointment and COVID-19 screening before dental care

The increase in cost and the reduction in income were commonly mentioned by many clinic owners. Most clinics encountered the situation by adhering to the regulation of physical distancing, whether by clinical setting rearrangement, or reducing the number of overlapped patient appointments for dental treatment and follow-up. Some clinics reduced more than 50% of patient appointments for dental treatment and follow-up compared with normal situations (pre-COVID epidemics). To make appointments, communication tools including mobile telephone, LINE application and e-mail, Facebook, and Zoom were used in 16 clinics, 8 clinics, 2 clinics, and 1 clinic, respectively. All clinics screened their patients for COVID-19 before treatment. The screening process includes filling COVID risk assessment form and measuring body temperature. Alcohol hand sanitizers were provided to visitors. Moreover, few clinics (such as clinics no. 6 and 12) had to check foreigners' vaccine passports.

Table 1 General characteristics of clinics inquired by the owners

Categories	Subcategories	Clinic No. 1	Clinic No. 2	Clinic No. 3	Clinic No. 4	Clinic No. 5	Clinic No. 6	Clinic No. 7	Clinic No. 8	Clinic No. 9	Clinic No. 10	Clinic No. 11	Clinic No. 12	Clinic No. 13	Clinic No. 14	Clinic No. 15	Clinic No. 16	Clinic No. 17	Clinic No. 18	Clinic No. 19
location		Ladprao	Bangkok Yai	Thawi Watthana	Watthana	Khlong Toei	Pathum Wan	Laksi	Chatuchak	Bangkhen	Bang Kapi	Phaya Thai	Khlong San	Bang Sue	Yan Nawa	Bang Phlat	Bang Sue	Prawet	Bang Sue	Bang Sue
Patient's nationality	Thai	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓
	Foreigners residing in Thailand	✗	✗	✓	✓	✓	✓	✗	✓	✗	✗	✗	✓	✗	✗	-	✓	✗	✗	✗
	Foreigners	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗	✗	✓	✗	✗	-	✓	✗	✗	✗
No. of units		5	3	3	2	4	12	3	6	3	2	6	3	2	2	-	12	2	3	11
Size of clinic		medium	small	small	small	small	large	small	medium	small	small	medium	small	small	small		large	small	small	large
Financial turn over	↑ cost	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	N/A	✓	-	✓	✓	✓	✓
	↓ income	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	N/A
Change in opening and closing time		✗	✗	✗	✓	✗	✗	✗	✓	✓	✓	✗	✗	✓	✗	-	✗	✗	✗	✗
No. of personnel	Dentist	↑	↓	same	↓	same	↓	same	same	same	same	same	same	↓	same	-	↓	↓	same	↓
	Non-dentist	same	same	same	same	same	same	same	↑	same	same	same	same	same	same	-	same	↓	same	↓
Wages for non-dentist		same	same	same	same	same	same	↓	same	same	same	same	same	↓	same	-	same	↓	same	↓

✓ = Yes ✗ = No ↑ = increased ↓ = decreased

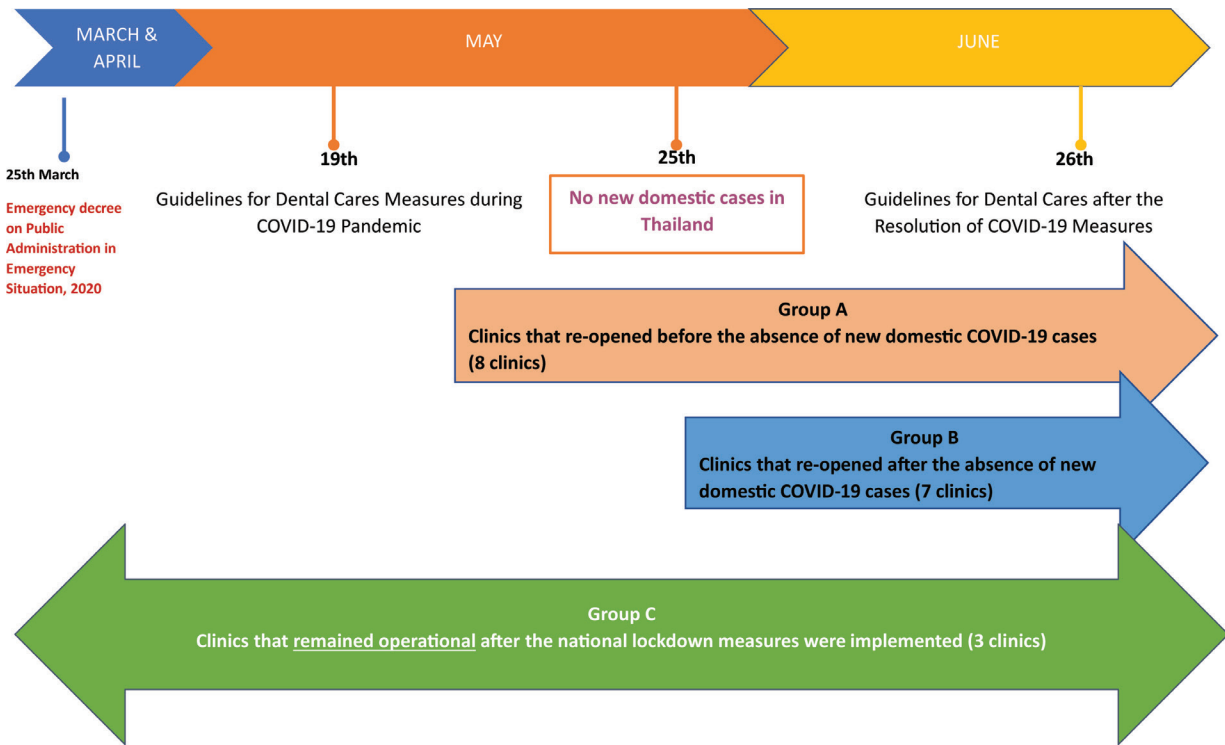


Figure 1 Eighteen dental clinics categorized by their operation in early 2020 COVID-19 epidemics.

### Clinic environment improvement and chair-side practices

For clinic environment improvement and chair-side practices using extraoral suction (EOS), more than half put their emphasis on aerosol reduction by improving their ventilation system, revamping air conditioning, and utilizing the HEPA filters, following by using exhaust fans and ultra-violet C (UVC) germicidal irradiation machines. Certain clinics had acquired or purchased new equipment during the pandemic to strengthen their infection control capabilities, they had mentioned dental EOS or extraoral suction system for chair-side practices to reduce aerosol particles and

fluids generated during dental procedures. For mouth-rinse practices, varied types of disinfectant mouthwash were used.

Eight clinics re-opened before the absence of new domestic COVID-19 cases (group A), they executed their infection control regulations by preventing excessive aerosol generation, via; adjusting the ventilation system, constructing separate operating rooms, and high-power EOS. Specifically, one clinic mentioned that *“we are confident in our screening protocols and our improved treatment rooms. Both patients and staffs will not go away if we remain confident in our infection control measures as we are barely*

affected by COVID-19 and the morale remained positive.” Most of them did not avoid AGPs since all believed that adjusted high-power EOSs were sufficient. Moreover, the application of plastic cup lids on the suction tips, aerosol box and procedure practices with 2 assistants working simultaneously at EOS were ensured for chair-side practices. Contrastingly, some clinics did not rely on EOSs due to expensiveness. They used exhaust fans, UVC sterilizers, and ozone machines.

For clinics that re-opened after the absence of new domestic cases (group B), some smaller clinics were closed for maintenance, and some were closed to avoid the COVID-19 situation. Both did not rely on the use of EOS. One of the closing-for-maintenance clinics mentioned that *“this improved clinical setting and ventilation did not affect financially, as the total cost was covered by the clinic’s reserved capital for intermittent maintenance.”* In contrast, some of the clinics that were closed to avoid the pandemic only used exhaust fans, doors, and windows for better ventilation. The owners stated that these clinics did not improve their ventilation system, as *“the clinic is quite old, so not much adjustment could be made, we opened doors and used fans to ventilate the air”, “we are also afraid of COVID-19, so it is better to wait until there is no more new case.”* Another clinic mentioned, *“I will wait until there’s no more new case, my clinic relies on only COVID-19 screening and minimizing overlapped patient appointments.”* However, in this group, there was also a large clinic that opened after the

absence of new domestic cases, which reduced aerosol generation by using high-power EOS.

For the last group, 3 clinics that remained operational after the national lockdown (group C), ventilation improvement was not their top priority. These clinics tended to rely on the use of EOS instead, as mentioned by one owner that *“during the lockdown period, there was barely any patient since places like restaurants were closed. We did however, standby for emergency treatment since healthcare providers were able to be open.”* Nonetheless, a clinic claimed that their suction had been improved and that they practiced with multiple suction units, hence EOSs were not required.

### Personal protective measures

The most common response found among the 3 groups was that personal protection had become more restricted or varied in both strategies and combinations. Most clinics required their dentists to wear isolation gowns, and some had to use disposable raincoats. Emphasis had also been put on protection via face masks, such as double surgical masks, N95 respirators as well as combinations of both surgical mask and N95. Additional equipment like mask fitters or fitting tapes had also been used in some clinics. However, the infection control capabilities of each clinic and their confidence in doing so might also determine the clinics’ operation.

### Opinions on limitations and suggestions regarding practice protocols

Regarding their opinions on the guidelines





from the associated organizations or the government, non-dentist worker subsidization was mentioned by several owners. Most of them were somewhat satisfied with the guidelines issued by the Thai Dental Council and the Dental Association of Thailand. One clinic owner justified that these guidelines were relatively “excessive”, and that to follow these regulations to which extent were up to the administrative figures. Another common feedback that recurred throughout multiple interviews was that the guidelines issued by the Thai Dental Council were outdated, and slow in publication. Smaller clinics addressed that the instructions were both impractical and difficult to follow, especially about the ventilation systems. Clinics with limited funding, and unsuitable infrastructure were likely unable to follow the guidelines to the ideal criteria.

### Discussion

Clinics that were closed to avoid the pandemic might have been affected by monetary and infrastructure issues. Incomes were reduced due to strict screening measures and reduced working hours. Financial difficulty was recurring, potentially preventing higher standards of infection control from being achieved. One clinic mentioned that the pandemic caused their revenues to decrease by 90%, and the struggle was further emphasized by a “*totally down-at-heel*” statement. Thailand’s economy might also contribute to some clinics’ financial decline as well. Further studies are necessary to portray the relationship between

COVID-19 and clinics’ financial status. The effect of COVID-19 on the economy should also be cautious as some owners reported that their revenues were already in decline prior to the pandemic. Moreover, financial difficulties might contribute to some clinics’ decision in making handmade equipment or methods to compensate for aerosol reduction aids, which included putting plastic cup lids on the suction tips, practicing with aerosol boxes that connected to the suction system, and using an instant UVC radiation machine.

The reasons behind each owner’s decision to keep their clinic running during the lockdown greatly varied, not overtly mentioned in the interview. They ranged from a clinic being situated in a commercial district (Pathumwan district), another clinic being part of a hospital, and the owner’s decision on using the aerosol box with suction tube.

PPE gowns and N95 respirators were necessary. Despite being supplied by the associated organizations; shortages of these personal protective barriers were still seen as the demand notably increased. Therefore, many clinics used raincoats or mask-locking frames as substitution, and respirators had to constantly be sterilized for reuse purposes. According to the Recommended Guidelines for Dental Treatments during the COVID-19 Outbreak from the Dental Council of Thailand, sealed surgical masks using mask fitters, or surgical tape could substitute N95.<sup>(6)</sup> As reported previously, the use of adhesive tapes might also enhance the effectiveness of surgical

masks.<sup>(7)</sup>

The Guidance for Dental Settings classifies the utilization of UVC devices under the alternative disinfection methods as its efficiency is still controversial.<sup>(8)</sup> The use of UVC light is not included in Thailand's guidelines as well.<sup>(5,6)</sup> A study in Italy explained the usage of UVC devices in dentistry as there were the types that sterilize the ambient air and the types that exposed the surrounding surface with UV radiation.<sup>(12)</sup> The two types of the machine had various advantages and disadvantages that might need to be studied further for dental application to establish their efficiency. However, about one-third of the clinics used UVC radiation to disinfect between cases. One clinic created a 36-watt mobile UVC machine to conduct an experiment to prove its effectiveness. Its result showed that UVC could efficiently reduce the number of microbes. However, the experiment did not provide any explanation on whether UVC could directly kill SARS-CoV-2. Interestingly, UVC was believed to kill the SARS-CoV-2 as viruses were more susceptible than bacteria. The owner claimed that if the bacteria were killed, so would the virus. UVC machines were not utilized in some clinics as the owners of those clinics pointed out that UVC could damage dental units, instruments made of plastics as well as other equipment when exposed to UVC. The CDC also suggested the removal of frequently touched objects and providing masks for the patients while these measures were not mentioned in guidelines from Thai Dental Council.<sup>(6,8)</sup>

Droplets reduction via EOS was neither included in the standard precautions nor CDC's guidelines.<sup>(8,13)</sup> As an article in the American Dental Association mentioned that the effectiveness or potential issues of EOS was still limited.<sup>(14)</sup> However, the Thai Dental Council suggested otherwise, influencing the use of EOS in 11 clinics.<sup>(6)</sup>

In comparison to an Iranian study, PPE shortages were commonly found in dental clinics of Iran and Thailand.<sup>(15)</sup> The Iranian clinics suffered economically due to the reduced hours and limited treatable criterion, which was similarly observed in our findings. Furthermore, almost 50% of dental clinics in Iran had considered closing their clinics until the pandemic had subsided. Regarding our data on clinic closures, some were reluctant to close, as the owners believed that their implemented measures were adequate. However, some wished their clinics to be demanded close by the Thai Dental Council, and to be provided with governmental non-dentist worker subsidy. Some limitations, such as, the different understanding in terminologies and definitions of clinic environment improvement and PPE probably occurred. However, the chance of bias was minimized with random clinic observation by researchers.

It is noteworthy that confidence in controlling infections by clinic owners directly affected the decision to close or open clinics during outbreaks. However, data from interviews indicated that while many clinics had elevated their infection control capabilities to approximate professional organization guidelines, some clinics lacked sufficient



resources and chose to close during outbreaks. Conversely, some clinics had chosen to use equipment with uncertain efficacy in preventing infection, such as UVC or home-made devices namely aerosol boxes connected to evacuation systems, and plastic cup lids. This can be observed from post-pandemic standard guidelines that do not incorporate these tools into service standards.<sup>(5,6,13)</sup> The fact that certain dental clinics chose to utilize instruments whose effectiveness in preventing the dissemination of the virus was questionable, partly due to slow and confusing policy measures and partly due to inadequate control and regulation of infection prevention standards in dental clinics during outbreaks. As a result, there are doubts about the safety standards of dental clinics in general.

During the pandemic, dental practices faced heightened risks of contagion, leading to significant financial challenges. The reduction in patient numbers has resulted in a sharp decline in income, while increased expenses, such as the procurement of PPE and renovations to meet safety standards, have further strained finances. This financial strain has proven severe, with some practices ultimately ceasing operations as a consequence. This phenomenon is observed across various countries. For instance, in Malaysia, over three-quarters of private dental practitioners reported a negative impact on their daily income during the pandemic, necessitating alternative income sources.<sup>(16)</sup> Similarly, the General Dental Council in the United Kingdom noted that 80% of

dental business owners experienced a decrease in income compared to the previous year, with 65% anticipating further declines in the subsequent years.<sup>(17)</sup> This data should raise concerns about the need for governmental financial assistance in the overlooked dental industry. The authorities primarily focused on supporting big sectors such as entertainment and travel.

This study should be beneficial to policy makers in dentistry to cope with new infectious outbreaks in the future. Clear and feasible guidelines, appropriate support for dental clinics to meet standards, and strict regulation of dental clinic standards are important measures for maximizing benefits to the public and the dental profession in the future.

### Limitation

The limitations of this research encompassed the following aspects: firstly, the study was confined to a single geographic location, specifically Bangkok, which might restrict the generalizability of the findings to broader contexts. Secondly, the study exclusively represented the perspective of service providers, potentially overlooking the perspectives of service recipients and other stakeholders, thus limiting the comprehensiveness of the insights obtained. Lastly, the utilization of a purposive sample selection method might introduce bias into the research outcomes, as it relied on the deliberate selection of participants based on specific criteria, potentially omitting important viewpoints and experiences that might be present

in a more randomly or broadly selected sample. A broader study is warranted to garner more comprehensive insights into this topic. Perhaps a quantitative study could address these limitations more effectively. Nevertheless, this study offers valuable insights and perspectives on the subject matter, serving as an initial step in comprehending the responses of private dental clinics to such crises.

### Recommendations

First and foremost, there is a pressing need for improved coordination among the organizations responsible for issuing protocols and guidelines, such as the Ministry of Public Health, Dental Association, and Dental Council. Delays and variations in guidance issuance had caused confusion and made it challenging for private dental providers to comply and implement the recommended measures. Secondly, the study underscored the importance of recognizing the specific challenges faced by small dental clinics in meeting certain protocol standards, often necessitating improvisation. Regulatory authorities should contemplate the creation of guidelines that were characterized by adaptability while simultaneously adhering to established safety standards. These guidelines should be specifically customized to align with the resources and capacities of smaller clinics. Collaborative efforts among involved organizations are also essential to ensure quick and unanimous responses to healthcare crises. Finally, it is recommended that the government extend financial

support to private dental providers in the form of soft loans and interest deductions. Such support can mitigate the economic impact of the COVID-19 crisis on dental clinics, contributing to their sustainability and continued provision of essential oral healthcare services for the population while ensuring they can provide services that meet safety standard regulations. Incorporating these recommendations into policymaking and organizational strategies will be valuable in enhancing the management and resilience of private dental clinics during future crises.

### Acknowledgements

Sincere thanks are extended to everyone that provided us with the necessary inputs, and those who participated in the interviews. Diligent advice of this paper by Assoc. Prof. Pipat Luksamijarulkul is highly appreciated.

### Funding

This report was supported by Mahidol International Dental School.

All authors declare that they have no conflicts of interest.

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