ORIGINAL ARTICLE

# Prevention and control of COVID-19 infection at the community health center during the new normal era

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## ABSTRACT

**Introduction:** Due to the coronavirus disease (COVID-19) pandemic, community health center services were limited. It was critical to have health protocols as a reference for the prevention and control of COVID-19 infection during adaptation in the new normal in Bandung City. The purpose of this research was to determine the prevention and control of COVID-19 infection at community health center in the new normal. **Methods:** A cross-sectional study was conducted utilizing observation through questionnaire with chosen yes (if appropriate) or no (if not appropriate) based questions in checklist form. Inclusion criteria was active dentist in community health center and exclusion criteria dentist was not completely answer question in checklist form. Purposive sampling was used to choose 30 dentists for the research sample. Data analysis uses frequency distribution and is divided into four stages, which are: preparatory, pre-visit, visiting, post-visiting stage. Data analysis uses frequency distribution. **Results:** At the preparatory stage were appropriate: Air flow setting on average 50%; clean water management 100%; room arrangement and management 50%. At the pre-visit stage were appropriate: Management of tele-dentistry detection and screening average 67%; patient treatment scheduling management 100%. The visiting patient stages were appropriate: detection and screening during patient visit only measurement of patients body temperature 100%; The concept of four handed dentistry 43.3%; implementation of isolation precaution in dentist personal protective equipment average 92.2% and in transmission precaution average 85%. At the post visit patient stages were appropriate: cleaning the workplace average 85%; Medical equipment management 100%; Medical waste treatment average 87.7%. **Conclusion:** During adaptation of the new normal, the implementation of prevention and control of COVID-19 infection in dental and oral health services community health center is not in accordance with the protocol. Improvements are still needed on several stages.

## KEYWORDS

Dentist, community health center, prevention and control of COVID-19 infection, new normal.

## INTRODUCTION

Coronavirus is a group of viruses that was recently discovered and named Severe Acute Respiratory Syndrome-Coronavirus-2 (SARS-CoV-2).[1] Coronavirus first emerged in Wuhan City at the end of 2019, and by the beginning of 2020, the Novel Coronavirus had infected 216 countries (2019-nCov).[2] Coronavirus Disease (COVID-19) was confirmed in Indonesia on March 2, 2020.[3] COVID-19 and the National Economic Recovery, on June 7, 2021, 1.863.031 positive cases were confirmed in Indonesia. As a result, Indonesia has one of the top 20 positive COVID-19 cases in the worldwide, and the highest in Southeast Asia.[4] According to the task group for the expedited handling of COVID-19, there were 20.524 confirmed cases in the city of Bandung as of June 8, 2021, with 89 people died.[5] The number of Covid cases in Indonesia is growing. The Government of Indonesia has declared COVID-19 a National Disaster in Presidential Decree No. 12 of 2020.[6]

Coronavirus Disease (COVID-19) spreads via aerosols, splatters, and drops.[7] This happens when you cough, talk, or sneeze.[7] Transmission can also occur by touch and inhalation through the mouth or nose.[7] This transmission is conceivable if there is a close proximity between infected and suspicious individuals. One of the occupations sensitive to COVID-19 exposure is dentistry.[8] According to the Indonesian Dental Association, 396 dentists were exposed to COVID-19 on February 5, 2021, including 199 community health centers, 92 hospitals, 36 clinics, 35 independent practice 13 persons, and 13 educational institutions of the Faculty of Dentistry, and 39 dentists died in 2021.[9]

Dentist's job does require dealing with the patient's mouth and carrying out actions that can produce aerosols and carry viruses.[6] According to Hall's classification of a person's social space zone or radius, dental treatment comprises intimate distance with a radius of 0-45 cm, which is the closest distance from the other three classifications.[10] The dentist is in close touch with the patient's oral cavity during the treatment, and equipment utilized in medical practice, such as hand-pieces and scalers, also transfer COVID-19 transmission through droplets.[11]

According to the Basic Health Research of the Ministry of Health of the Republic of Indonesia in 2018, dental and oral disorders are among the top ten ailments that Indonesians complain about, with a very high prevalence of 61%.[6] According to data from the Ministry of Health of the

Republic of Indonesia, there are a number of dental issues. cavities, foul breath, dry mouth, tooth pain, and bleeding gums after brushing teeth during the pandemic.6 Visits to the dentist at the health center were limited during the pandemic, causing delays in dental and oral health treatment, and many patients preferred to self-medicate for fear of getting the disease. COVID-19.[7]

Community health center, as primary health care, continues to be a community need in the attempt to reduce dental and oral disease morbidity.[6] Health services provided are linked to the spread of new cases and have an impact on dentists.[7] The pandemic condition persists, and dentists must deal with these problems on a daily basis, yet the service must continue to run.[12] In dealing with this issue, the Ministry of Health of the Republic of Indonesia issued Dental and Oral Technical Instructions for First Level Health Facilities, which includes four stages of the dental and oral health service scheme, namely preparation of the dentist, before patient visits, during patient visits, and after patient visits.[7] The technical instructions emphasize the importance of being careful in taking actions to prevent the transmission of the COVID-19 virus and have been socialized as a guideline for carrying out dental procedures at Primary Community Health Center in April 2021.[7]

According to the explanation above, the author is interested in determining the prevention and control of COVID-19 infection at the community health center in the new normal in Bandung City. The research findings are expected to provide input for the implementation of dentistry and oral health services at the community health center so that they may deliver quality services/good service quality and patient safety. The purpose of this research is to determine the implementation of prevention and control of COVID-19 infection in the implementation of dental and oral health services at the Bandung City Community Health Center.

## METHODS

The research design is cross sectional method utilizing observation use questionnaire with dentists at the Bandung City community health center, data collection using primary data through a checklist form that refers "Technical Manual for Dental and Oral Health Services at the First Health Facility during the New Normal" that published by Kementerian Kesehatan Republik Indonesia on 2021.

Data on the number of community health care obtained from the Dinas Kesehatan Kota Bandung. In 2022, the population was a dental polyclinic with 46 dentists actively performing operations at the Bandung City community health center. The research was conducted from November 2021 to March 2022. The research sample included 30 dentists chosen using the purposive sampling approach and the Lemeshow formula, with the criteria for the community health center being a dental clinic and dentists who are actively taking action and willing to be research subjects.

The instrument used in this study was a questionnaire that was validity and reliability check. Data analysis uses frequency distribution of prevention and control of COVID-19 infection about preparatory, pre-visit, visiting, post-visiting stages. Including observations about services, namely at the preparation stage, an assessment of the preparation before the community health center held services was made: the state of air flow setting, clean water management, and room management and setting. The stage before the patient visits, namely before the patient comes to the community health center.

Assessment of the management of patient detection and screening through tele-dentistry and management of patient visit scheduling. During the patient visit, the implementation of detection and screening at the time of the visit, the application of the concept of four handed dentistry, and the use of isolation precautions (personal protective equipment and transmission precautions) were observed. Following the patient visit, the implementation of cleaning the workplace environment, medical equipment management, and medical waste management was also observed.

The questionnaire has 2 answers, yes and no. Informed consent was carried out prior to observation and filling out a questionnaire. The assessment method utilized is to assign a score of 1 if the activity (service) is implemented in accordance with the standards and a score of 0 if it is not. The study's findings are presented as a frequency and percentage age based on the stages completed. Data analysis uses frequency distribution.

## RESULTS

The results of the study were obtained from 30 dentists who performed active services at the Bandung City community health center. The research results are grouped in the following 4 tables:

On table 1, The preparatory stage that has been carried out is 100% clean water management, but the air regulation and room management arrangements are on average 50%. For the ventilation windows 67% of community health centers used natural ventilation windows, and only 33% of them used exhaust fans (mechanical ventilation).

On table 2, Prior to the visit, not all tele-dentistry detection and screening were performed; only 67% performed tele-dentistry and verbal patient consent. The protocol is followed while asking for managing, and arranging patient treatment. Community health center treatment scheduling management has been carried out 100% for emergency and postponement.

**Table 1.** Frequency distribution of the preparatory stage on prevention and control of COVID-19 infection at the Bandung City community health center during the adaptation period of new habits

| Protocol | Yes | | No | |
|---|---|---|---|---|
| | F | % | F | % |
| *Preparatory Stages* | | | | |
| Airflow and ventilation setting natural ventilation | | | | |
| Natural ventilation windows | 20 | 67 | 10 | 33 |
| Mechanical ventilation | | | | |
| Exhaust fan | 7 | 33 | 23 | 67 |
| Clean water management | | | | |
| Planned water management | 30 | 100 | 0 | 0 |
| Room arrangement and management | | | | |
| Room arrangement and management | 15 | 50 | 15 | 50 |

**Table 2.** Frequency distribution of pre visit stages on prevention and control of COVID-19 infection at Bandung city community health center during the adaptation period of new habits

| Protocol | Yes | | No | |
|---|---|---|---|---|
| | F | % | F | % |
| *Pre-visit Stages.* | | | | |
| *Management of teledentistry detection and screening* | | | | |
| Teledentistry before patient visit | 20 | 67 | 10 | 33 |
| Verbal patient consent | 20 | 67 | 10 | 33 |
| *Patient treatment scheduling management* | | | | |
| Emergency conditions and risk of exposure to COVID-19 infection | 30 | 100 | 0 | 0 |
| Postponement of treatment for patients who have symptoms of COVID-19 | 30 | 100 | 0 | 0 |

On table 3, The stage of the visit, detection and screening of patients during the visit remained generally 0%, the protocol's implementation consists solely of measuring the patient's body temperature. The concept of four-handed dentistry is still used only 43.3%. Only doctors are required to wear gloves (100%) and the necessary headcap (100%) when using isolation precautions for personal protective equipment, while using of eye protection 90%, N95 mask or equivalent 86.6%, surgical scrub gown all cover 93.3%, and using boots or shoes 83.3%. Only the patient rinses (100%) before the required measure is taken under transmission precautions, and using high volume evacuators only 70%.

**Table 3.** Frequency distribution of the visiting patients stage on prevention and control of COVID-19 infection at Bandung City community health center during the adaptation period of new habits

| Protocol | Yes | | No | |
|---|---|---|---|---|
| | F | % | F | % |
| *Visiting patient stages* | | | | |
| *1. Detection and screening during patient visit* | | | | |
| Measurement of patients body temperature | 30 | 100 | 0 | 0 |
| Dental protective glasses | 0 | 0 | 30 | 100 |
| Head cap for patients | 0 | 0 | 30 | 100 |
| Isolation gown for patients | 0 | 0 | 30 | 100 |
| *2. The concept of Four handed Dentistry* | | | | |
| Four handed dentistry | 13 | 43.3 | 17 | 56.7 |
| *Implementation of Isolation Precautions* | | | | |
| *Dentist Personal Protective Equipment* | | | | |
| eye protection | 27 | 90 | 3 | 10 |
| N95 mask or equivalent | 26 | 86.6 | 4 | 13.4 |
| Gloves | 30 | 100 | 0 | 0 |
| Head Cap | 30 | 100 | 0 | 20 |
| Surgical scrub Gown all-cover | 28 | 93.3 | 2 | 6.7 |
| Boots or shoes | 25 | 83.3 | 5 | 16.7 |
| Transmission Precautions | | | | |
| high volume evacuator | 21 | 70 | 9 | 30 |
| The patient rinses their mouth before the procedure | 30 | 100 | 0 | 0 |

**Table 4.** Frequency Distribution of the Post-Visit Patient stages on prevention and control of COVID-19 infection at the Bandung City community health center during the adaptation period of new habits.

| Protocol | YES | | NO | |
|---|---|---|---|---|
| | F | % | F | % |
| Post-Visit Patient Stages | | | | |
| 1. Cleaning the Workplace | | | | |
| Cleaning and disinfection of the workplace | 30 | 100 | 0 | 0 |
| Manual medical record decontamination | 12 | 40 | 18 | 60 |
| Medical tools and materials in the drawer | 30 | 100 | 0 | 0 |
| Rubbish bin | 30 | 100 | 0 | 0 |
| 2. Medical equipment management | | | | |
| Pre-cleaning stage | 30 | 100 | 0 | 0 |
| Cleaning stage | 30 | 100 | 0 | 0 |
| Disinfection stage | 30 | 100 | 0 | 0 |
| Sterilization stage | 30 | 100 | 0 | 0 |
| 3. Medical waste treatment | | | | |
| Wastewater Management Installation (WWTP) | 19 | 63.3 | 11 | 36.7 |
| Domestic solid waste bin | 30 | 100 | 0 | 0 |
| Special symbol container | 30 | 100 | 0 | 0 |

On table 4, The post-visit stage, cleaning the work environment is still not appropriate, namely 40% medical record decontamination. Management of medical equipment is appropriate 100%. Medical waste management is still not appropriate, namely the management of liquid waste with the WWTP process as much as 63.3%.

## DISCUSSION

Table 1 depicts the preliminary step, which is the preparation that the community health center must perform before giving services. This study on ventilation is like Barbosa study, more than 50% of dentists did prepare good ventilation.[12] In addition, Barbosa study did good ventilation at the clinic, specifically the use of filters during 10 minutes between patients. The community health center must plan for airflow and ventilation, clean water management, and proper room organization and management. The findings of the field research revealed that the majority of the community health center had natural ventilation. Natural ventilation at the health center includes air sources such as windows that may be opened and closed to provide clean air.[6] Community health centers without natural ventilation do so since the dental clinic is still temporary and the room will be transferred in the future. According to the findings of Sun and Zhai's research, improved ventilation has a positive impact on reducing the transmission of COVID-19.[13] Because there is no clean air source from outside that works as an entry for oxygen from outside to inside the room when natural ventilation is not available, there is a greater chance of getting COVID-19. Due to the lack of natural ventilation in the room, dentists are unable to breathe clean air; instead, dentists only breathe air from rooms with a high risk of aerosol transmission.[14]

The results of field observations for mechanical ventilation, most of them do not have mechanical ventilation and do not know the correct location according to the guidelines. This study is not the same as Barbara's study, they do not observe mechanical ventilation, only describe general ventilation[12]. Mechanical ventilation or exhaust fans must be located at 20 cm from the floor which functions to circulate dirty air to the outside.[7] The majority of dental clinics still do not have an exhaust fan and do not know the correct location according to the rules. Exhaust fans are very important for room ventilation, the absence of an exhaust fan causes dirty air in the room to remain inside which has an impact on the transmission of the COVID-19 virus, the dirty air in the room will put dentists at risk of contracting COVID-19.[6] If it doesn't have an exhaust fan, the treatment room must have natural ventilation.[7] Community health center is not possible to provide natural and mechanical ventilation, so it is advisable to use an air purifier or HEPA filter which functions to filter air from contaminant bioaerosols.[7]

Clean water management necessitates an adequate and clear water flow; according to Fernando's research in Peru, clean water quality has an effect on preventing the spread of Covid-19.[15] The impact of a lack of clean water is a barrier to action for dentists.[15] Water is required for all dental treatments, either before or after any action, such as gargling, which helps to avoid the spread of COVID-19.[16] According to field observations, all have implemented clean water management with ample, clean, and transparent water sources. This demonstrates a great understanding of the necessity for action in water management. The arrangement and administration of the room are denoted by yellow and red line symbols, as well as the arrangement of patient mobilization in physical distance.[6] The Yellow Zone denotes the patient waiting area, the receptionist waiting area, and the staff room.[6] The Red Zone denotes a room that emits aerosols and requires decontamination. Community health center officers must examine the regulation of patient mobilization, as well as the number of patients entering the waiting room and the action.[6]

Colored zones or mobilization arrangements are helpful for patient monitoring, which has an impact on preventing COVID-19 transmission.[7]

Room arrangements and management are only applied by 50% of community health centers, the reason they do not apply the rules is because the waiting room is combined with the receptionist room (narrow health center room), so they cannot provide a special room for patient waiting rooms based on the applicable protocol. This has an impact on the accumulation of patients in the receptionist room, causing the application of physical distancing to be not optimal.

If the application of physical distancing is not carried out optimally, it will cause a high risk of transmission of COVID-19.[17] This will also have an impact on dentists both in the division of zones, firmness in implementing physical distancing, the number of patients waiting to enter the dental clinic can minimize the transmission of the COVID-19 virus.[1] This finding differs from Neetha's research from India, where the majority of health facilities give a separate waiting area before entering the dental facility.[18] The protocol, termed clean water management, has been followed during the preparatory stage of implementation. Air regulation and space management arrangements remain at 50% on average.

Table 2 depicts the stages of pre-visit patients. This step consists of two points: patient discovery and screening via tele-dentistry, and patient care scheduling management. Only 67% of community health centers have used tele-dentistry as an innovation for communicating with patients prior to the procedure. This finding is similar to Neetha Sehenoy's research from India, which found that 52.9% of dentists who had used tele-dentistry prior to the patient's appointment did so. With the difference, Bandung city dentists did not continuously hold teledentistry.[18] The community health center offers tele-dentistry through a helpline for dental and oral health services.

Patients can use this facility prior to visiting by calling the admin or dentist on duty. Before patients visit, tele-dentistry is used for registration, screening, and consultation.[19] This is significant because it can determine the patient's condition before coming to community health center; the difference with this case is that tele-dentistry was not systematically held. The rules say if the patient has COVID-19 symptoms, it is not permitted to attend the dental clinic; if the patient does not have COVID-19 symptoms, it is permitted to visit the dental clinic. This program is used to help dentists identify patients who are at risk of transmitting COVID-19.[7] According to Muhammad Imran's research from Pakistan, the use of tele-dentistry is beneficial in preventing COVID-19 transmission, tele-dentistry allows patients to consult without direct contact with the dentist.[19]

All community health centers were screened with the patient's consent. According to Payvand Menhadji's research from England, asking for this approval is essential for patient comfort and satisfaction in addition to prevention and control of COVID-19 infection.[20] Patient consent can have an impact on the dentist-patient relationship; patients will be more trusting and loyal if they explain clearly, polite and ask for approval before action.[20] The management of patient care schedule must prioritize patient needs based on the emergency state and danger of COVID-19 exposure, delaying therapy for 2-3 weeks if you have COVID-19 symptoms.[7]

This can benefit dentists by reducing COVID-19 transmission. [20] All health centers have highlighted the danger of COVID-19 exposure and delayed treatment if they encounter COVID-19 symptoms such as illness, cough, and fever. These findings are consistent with the Sanjeev study from Saudi Arabia, in which the majority of dentists in Arabia emphasize the risk of COVID-19 exposure.[21] These findings are similar to those of the Neeta Shenoy study from India, in which dentists prioritize patient activities based on COVID-19 exposure and delay therapy if COVID-19 symptoms exist.[18] The execution of the phases prior to the visit, detection, and screening of tele-dentistry has not been carried out by everybody, with only 67% of those who practice tele-dentistry doing and Asking for verbal patient consent. Management and scheduling of patient care are in accordance with the protocol. In this study similar with other study that prioritize patient safety, avoid dangerous things into patient.[18]

The findings of observations made during the patient's visit, which included detection and screening during the visit, the notion of four handed dentistry, and the use of isolation precautions. During patient visits, all take body temperature measures before entering the waiting area, which is performed by community health workers at the entry before the receptionist room. Body temperature measurement is used to determine the patient's body temperature; if the fever exceeds 38 degrees Celsius, an assessment is performed first to prevent virus transmission, as fever is one of the symptoms of COVID-19.[22] These results are the same as those of Hsiao and Chen from Taiwan, where every hospital in Taiwan takes body temperature measurements before entering the receptionist's room.[22] These results are not much different from Neeta Shenoy's research from India, the majority of which are body temperature measurements.[18]

Personal Protective Equipment (PPE) is not provided at all health locations for patients. Protective eyewear, a head cap, and an isolation gown are all suggested personal protective equipment for patients. The community health center, on the other hand, did not supply it since there was no budget. Personal Protective Equipment is essential because protective glasses, head caps, and isolation gowns can shield patients from droplets and aerosols during the process.[7] If such a system does not exist, it will have an impact on the transmission of the COVID-19 virus to dentists.[7] If the patient does not wear personal protective equipment according to the guidelines, splashes or aerosols from the procedure, such as splashes from a hand-piece, will stick to the head, clothes, or eyes, which are feared to contain the virus. The virus will be recognized by the receptor for the Angiotensin Converting Enzyme-2 (ACE-2) enzyme, which is located in the cell membranes of various organs including the mouth, lungs, kidneys, and liver.[23] This enzyme catalyzes the conversion of angiotensin I and II to angiotensin 1-9 and angiotensin 1-7, which serve as functional coronavirus receptors (SARS-CoV) and amino acid transporters.[22]

The notion of four handed dentistry is used by less than half of the dentists. This is not the same result with Neetha Senoy that was less than ideal.[18] Their reasoning is that there is no dental nurse and the dental clinic room is overcrowded. The concept of four-handed dentistry is vital because it can ease the dentist's movements in aerosol action, such as the use of a high volume evacuator, which has a high power and thus need the help of a dental nurse.[18]

The notion of four-handed dentistry improves service quality and reduces dentist fatigue when executing procedures.[7] The results of observations in the field, the effect of fatigue is related to compliance with the use of personal protective equipment, fatigue causes the dentist's non-compliance in wearing PPE according to the protocol. Research from Neetha Senoy is an additional reference that the application of the concept of four handed dentistry can control the spread of COVID-19.[18]

Personal Protective Equipment for operators and transmission precautions are two areas of isolation precautions.[7] Personal Protective Equipment (PPE) used by dentists during procedures should be level 3 PPE, which includes wearing protective eyewear, N95 masks or equivalent, gloves, headcap, surgical scrub gown all-cover, boots or covered shoes.[7] According to the findings, the majority of dentists wore safety glasses or goggles. These findings are similar to Barbosa's research on dentist practice change, protocol compliance, and dentist risk perception during the COVID-19 pandemic in Colombia, where the majority of dentists used googles.[12] Those who reasoned did not wear protective eyewear since they were uncomfortable. In fact, goggles are important to wear, because they function as eye protection from droplets and aerosols from various sides.[24]

According to the study's findings, the majority of patients have utilized N95 masks during patient treatment. This finding is consistent with Barbosa's Colombian study, which found that the majority of dentists used N95 masks.[12] Despite the fact that N95 masks are preferred by dentists because they fit better and have more layers for aerosol filters than surgical masks.[24] When surgical masks are worn, the gaps allow aerosols or other splashes to enter.[12]

During the process, all dentists wore gloves and a headcap. Gloves are necessary to wear because they prevent cross-contamination and give protection from chemicals and hazardous substances.[24] The majority of dentists wear gloves throughout treatments, which is consistent with the findings of Barbosa's study. The wearing of a headcap protects the head and hair from aerosols.[24] Ideally, the headcap and gown should be separated so that they can be removed independently, reducing the danger of transmission.[24] These findings are consistent with Neetha's study, in which the majority of dentists wear a headcap.[18]

Almost all dentists have worn an all-cover surgical scrub gown. Similar research shows every dentist was less than comfortable wearing all covers. Those who do not wear an all-cover surgical scrub gown due to discomfort, such as heat and discomfort. This is not the same as the Barbosa study, in which only 50% of dentists wore an all-cover medical scrub gown.[12] The usage of an all-cover surgical scrub gown serves to cover the body and clothing while also protecting the body from contamination by microorganisms.[24]

Dentists typically wear boots or covered shoes. The reason why they do not wear it was due to pain factors such as weight or a sense of limitation. Boots or covered shoes protect the operator's feet from splashes and aerosols. Boots or covered shoes must fit the operator perfectly to avoid bacterial contamination.[24] This finding differs from Barbosa's study because only around half of dentists wear boots or covered shoes.[12]

The application of this PPE has a great impact on dentists, through which dentists can protect their bodies directly from aerosols, tools and infectious materials in the workplace.[7] If this application is still not optimal, it is vulnerable to contracting diseases and work accidents.[6] Accidents work on the dentist can be in the form of being exposed to the eye of a bur, falling tools such as pliers, being hit by a syringe.[25] Prevention and control of this is done with the accuracy and completeness of the use of PPE based on the applicable protocol.[25]

Table 3 contains two transmission precautions: using a High Volume Evacuator (HVE) and gargling with antiseptic before the treatment. HVE is used by the vast majority for community health centers that do not yet have HVE because they are awaiting approval from the Bandung City Health Office. The researcher have not found article with specific explanation about HVE, but HVE is very important to minimize transmission.[7] High Volume Evacuator is a high-power suction device capable of removing 100 cubic meters of air per minute in order to minimize aerosols.[26] Because it limits direct aerosol exposure, the use of HVE can prevent virus transmission to dentists, making operations more comfortable and safe.[12] Before the operation, all patients gargled with antiseptic liquid. The use of antiseptic liquid when gargling serves to reduce microorganisms, so as to minimize transmission to dentists.[8]

These results are the same as those of Barbosa's study, the majority of patients gargling with antiseptic liquid before the procedure. Implementation at the stage during patient visits, detection and screening of patients during visits is still mostly 0%, while in accordance with the protocol only body temperature measurements for patients. The application of the concept of four handed dentistry is still below 50%. The application of isolation precautions on personal protective equipment is above 70%, only doctors wear gloves, head caps that are in accordance with protocols or guidelines. The application of isolation precautions to transmission precautions that are in accordance with the protocol, only the patient rinses his mouth before the procedure.

Table 4 about the post-visit stage consists of several points, including cleaning the work environment, managing medical equipment, and managing medical waste.[7] Cleaning the work environment includes routine procedures for cleaning and disinfecting the work environment, stages of decontamination of manual medical records, dental medical equipment and materials in a closed drawer, including the availability of a trash can.[7]

Based on observations, all dentists carried out routine procedures for cleaning and disinfecting the work environment. Dentists clean work surfaces regularly before each patient changes, this serves to prevent contamination of microorganisms. This result outperforms Hutton's study on the prevention and control of cross-infection in tooth extraction at the Dental Clinic of the Kakaskasen Community Health Center Tomohon city, where only 51.25% of dentists cleansed work surfaces.[27] Cleaning conducted on each patient has an impact on environmental hygiene and safety. At work, bacteria might linger or adhere to the surface after the operation, therefore they must always be cleaned to avoid infection.[20]

Implementation at the stage of decontamination of manual medical records is less than 50%. The reason why many dentists do not carry out the decontamination stage is because they do not know about the manual medical record decontamination stages. The manual medical record stage is carried out to prevent the transmission of viruses that can survive on paper for five days.[7] Medical records must be stored in a closed cabinet or special room for five days, after which they may be reused or archived.[7] If medical records are not decontaminated, they can be cause the transmission of the virus to dentists and health workers.[28]

All dentists stored all dental medical equipment and materials in locked drawers. To prevent microbial contamination, the function of equipment and supplies is stored in locked drawers.[12] If this is not done, it increases the danger of microorganism contamination in the equipment and materials to be used and causes non-sterility, which if utilized directly can raise the risk of microbe exposure to dentists who use these tools.[27] All dentists have supplied garbage cans in the dental polyclinic for medicinal, non-medical, and contagious fluids. If there are no three types of trash in the room, the risk of dentists being exposed to microorganisms, diseases or infectious materials increases. [27]

All dentists manage medical equipment, including the pre-cleaning, cleaning, disinfection, and sterilization steps.[6] The pre-cleaning stage is a cleaning performed at the start of the medical equipment that has been used to remove saliva, blood stains, and other body fluids.[29] A dentist or dental nurse performs this procedure by immersing the equipment in 2% glutaraldehyde liquid or according to the manufacturer's recommendations for 10-15 minutes.[7] The cleaning stage is the process of removing fluid, dirt, and blood that is connected to or adhering to the tool's surface, however it cannot destroy pathogenic bacteria.[7] A dentist or dental nurse does the cleaning stage both manually and mechanically.[29]

These findings are consistent with Hutton's study on the prevention and control of cross-infection in tooth extraction at the Kakaskasen Tomohon Community Health Center Dental Clinic, where the majority of dentists or dental nurses do the cleaning step.[27] The disinfection stage is a chemical-based process that reduces germs so that the instrument is safe to use, but it does not remove bacterial spores.[7] A dentist or dental nurse performs the disinfection phase by concealing the equipment with a disinfectant. Sterilization stages are a method of removing germs such as bacterial spores.[7]

The sterilization stage is carried out by a dentist or dental nurse using chemical liquids, dry heat, and autoclave. According to Hutton's research, the majority of dentists practice sterilization.[27] All of these stages must be completed in their entirety and in the correct order. If not done thoroughly and sequentially, the tools used are at risk of becoming unsterile and should not be reused for the following patient service use since it poses an infectious hazard and exposes dentists and patients to microorganisms.

Health workers must perform proper medical waste disposal in order to avoid sickness or injury to patients, the community, or the surrounding environment.[7] Health personnel must be able to verify that current trash is safely treated, including sorting, converting, and eliminating.[7] A Waste Water Treatment Plant (WWTP), separation of solid waste, notably medical and non-medical, and providing waste containers with unique symbols or labeled with biohazards are all part of the process of processing medical waste.[30] The treatment of all waste water resulting from patient acts that allow microorganisms, including the SARS-CoV-2 virus, blood, and patient's mouthwash, is known as wastewater treatment.[7] Wastewater treatment must follow the WWTP procedure, which includes the first sedimentation process, biological process, final sedimentation, and chlorination disinfection.[30]

The results of observations are more than 50% have carried out liquid waste management in accordance with the WWTP process. they did not implement it because there was no budget, where the WWTP process required a big budget. All dental polyclinics that provide medical and non-medical trash bins, the function of grouping medical and medical waste is to facilitate waste processing by waste officers. These findings are similar to Hutton's study on the prevention and management of cross-infection in tooth extraction, in which all dentists or dental facilities generate medical and fashionable waste. All dental polyclinics give labels with unique symbols for solid hazardous and toxic waste. Hazardous and toxic solid waste (B3) is residual material that will not be reused and has the potential to be contaminated by infectious substances.[7] This medical B3 waste container is yellow which will later be processed by the company's services by entering into a cooperation agreement in processing and destroying the have legality.

This finding is consistent with Hutton's study that the majority of dentists provide medical B3 waste dumpsters.[27] The stage after the patient's visit to the cleaning of the work environment, namely 40% disinfection of medical records, is still not in compliance with the protocol. Medical equipment is managed in accordance with the protocol. There are still medical waste management practices that do not adhere to the protocol, including the handling of liquid waste with the WWTP procedure, which accounts for up to 63.3% of the total.

Field observations revealed that community health centers with more complete health protocol facilities can provide more services to patients, particularly those that require action and are at risk

of causing aerosol exposure from patients, such as scaling or the use of burs, compared to community health centers with insufficient health protocol facilities. This is because dentists will feel safer from aerosol exposure, and patient safety will be improved.

The use of dental action services are regulated by standards, which state that each protocol must be followed in order for prevention and control of COVID-19 infection and management measures to be successful. According to the research, several protocols have been 100% implemented in accordance with technical guidelines, including clean water management, patient screening approval, management of patient care scheduling in prioritizing patient needs, measuring body temperature, dentists wearing gloves and head caps, patient rinses before the procedure, cleaning the work environment, storing tools and materials, and managing medical equipment.

However, the majority of the procedures are still not being carried out or offered by the community health center since they have not been implemented optimally.

All community health centers still do not supply patients with personal protective equipment like protective glasses, head caps, or isolation gowns. This demonstrates a poor level of implementation during the patient visit. Many practices, including mechanical ventilation, four-handed dentistry, and manual medical record disinfection, are currently being implemented at less than half of their potential. During the period of acclimating to new behaviors, prevention and control of COVID-19 infection should be implemented completely, because otherwise, COVID-19 transmission will still be a possibility.[7]

Dentists should carry out the protocol that relates to the technical manual for dentistry and oral health; this is related to patient safety.[7] Patient safety is an organized and systematic activity that aims to build sustainable procedures, processes, and environments in order to avoid losses and errors, as well as to prevent and limit undesirable errors.[31]

Some faults, such as inefficient communication, inappropriate tool cleaning, and officers' lack of expertise (in this case, dentists), can put dentists and patients in danger, particularly when it comes to the transmission of COVID-19.[31] Community health center was not divided based on the availability of complete or incomplete equipment, according to research at the Bandung City community health center, therefore certain treatments that were not carried out were not in compliance with the recommendations owing to incompleteness. Some dentists fail to follow the recommendations because they are unaware of the rules that have been established. Dentist disobedience, such as refusing to wear personal safety equipment in

According to the recommendations, it is also a barrier to implementation. Despite the fact that the dental and oral technical manual offers information for prevention and control of COVID-19 infection during the pandemic, it is designed to prevent the COVID-19 virus from being transmitted from patients to dentists and vice versa. Dentists should obey the Ministry of Health's guidelines when implementing protocols in order to ensure patient safety and high service quality. Researchers will be able to improve more samples in the future because they will be able to give clarity to the outcomes of the evaluation of preventative implementation so that they may provide clearer input. Furthermore, it is necessary to investigate the protocol or reference items specified in greater depth, such as the accuracy of the use of personal protective equipment, how dentists donning and doffing, and airborne transmission prevention, such as the use of other work area isolation devices other than HVE, such as saliva ejector and rubber dam.

During the period of adapting to new habits, dentists in the health center should improve their knowledge of prevention and control of COVID-19 infection in dental and oral health services, and the Bandung City Health Office should be able to improve health facilities at the health center dental polyclinic, such as patient personal protective equipment, exhaust fans, and HVE. Because it is critical that all service operations at community health centers adhere to Ministry of Health criteria in order to prevent infection, ensure the health and safety of health workers and dentists, and ensure they can continue to provide high-quality service and ensure patient safety.

## CONCLUSION

During adaptation of the new normal, the implementation of prevention and control of COVID-19 infection in dental and oral health services community health center is not in accordance with the protocol. Improvements are still needed on several stages

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