



Attitude, perception, and awareness among dental practitioners in the Namakkal district of Tamil Nadu about severe acute respiratory syndrome coronavirus 2 and disease management – A prevalence study

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Abstract

Background: Due to the availability of proper hygiene standards and suggestions, many dental health centers fail to satisfy the minimal disease control criteria.

Objective: The goal of this research was to investigate the degree of attitude, perception, and awareness of severe acute respiratory syndrome coronavirus 2 (SARS-COV-2) and disease management among dental practitioners in Namakkal district – A prevalence study.

Methods: Dental practitioner operating in Namakkal district private health center, nursing homes, and health-care organizations was included in the research population. An questionnaire survey was issued to a test group in May 2020. The participants answered a sequence of quiz about dental practitioner survey was, their deep understanding of latent period, disease symptoms, SARS-COV-2 spreading route, and disease prevention.

Results: A total of 207 dental practitioner were included in this study (98 males and 109 females). While all respondents (100%) were aware of the PPE required in this situation, a small percentage (2.5%) did not prefer to use one. About 99.5% of them endorsed social isolation as a containment measure to avert this epidemic and correctly identified the age group in which the disease is most prevalent. Few respondents (81.6% and 73.9%, respectively) were aware with the specifics of vaccine development and the death rate in the worst-affected nations. Similarly, not everyone was aware of the disorders associated with this disease (91.3%) or the actions that should be educate patients.

Conclusion: In general, participants possessed a reasonable/above-average level of knowledge of the virus, its transmission, prevention, and therapy (around 90–100% correct responses overall). Almost all participants endorsed sharing this information with their patients, while a few expressed reservations. This research reveals that dental practitioner had a high level of knowledge and awareness of the pandemic.

Introduction

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a recently discovered budding virus that started in Wuhan, China, and spreads over the world, creating a pneumonia outbreak. The fast-spreading virus appears to be more contagious than SARS-CoV and MERS-CoV-9.^[1] Human-to-human transmission has been hypothesized to occur through airborne droplets, contact with or touching an infected person,

or a contaminated surface. Furthermore, though alternate channels such as blood or saliva have not been examined, they are plausible due to the established spread of blood-borne infectious STD, HCV, including HBV through blood or saliva. These mechanisms of transmission raise concerns about a similar way of SARS-CoV-2 in the clinical area.^[2]

On March 11, 2020, the World Health Organization (WHO) declared the SARS-CoV-2 outbreak a “pandemic.”^[3] It turned out to be a “black swan” occurrence, a rare and inherently

unpredictable event with devastating consequences, to use economists' phrase. Pandemics usually trigger global recessions; however, the economy was already feeble and vulnerable before to the epidemic. The virus has an effect on every aspect of global commerce. This event has an impact on almost every industry and has been grouped together.^[4]

When lockdown protocols were implemented in India, dental health center was closed. The majority of dentists who perceive the pandemic's consequences intend to delay reopening their clinics for an additional time period. As a result, dentistry and dental clinic personnel will earn no money and have a terrible future.^[5] Due to their close proximity to diseased patients, health-care professionals are constantly at an increased risk of infection.^[6]

SARS-CoV-2 and Tooth Aid

While working with patients afflicted with the virus, a considerable number of medical staff have been reported to become sick.^[7] This is not the case at the dental practice. To the possibilities of transferring and acquiring the infection amongst staff or individuals; nevertheless, due to the nature of dental therapy and the intimate interaction with patients, the dental clinic may be a riskier environment for spreading the virus.^[8] While SARS-CoV-2 patients are not supposed to have dental care, dental emergencies sometimes happen, therefore, it's impossible to avoid close contact. Furthermore, the disease's very extended latent period.^[9] However, in other cases, symptoms did not appear for up to 14 days,^[10,11] and the post-infection interval makes it difficult for medical personnel to determine the existence of SARS-CoV-2 infection, thereby increasing disease transmission during these rest periods. As a potential outcome, infected people by SARS-CoV-2, therefore, do not exhibit symptoms that threaten severe harm to dentists and several other dental team members. Dentists must keep a high consciousness and authenticity to deal with the illness and track and regulate its spread. To prevent the spread of SARS-CoV-2, the Centers for Disease Control and Prevention, the American Dental Association, and the WHO have issued practical instructions to dentists and dental staff.^[12-14] As with other contagious diseases, these suggestions include the use of personal protective equipment, thorough patient evaluation, rubber dam isolation, anti-retraction handpiece, mouth rinsing before dental treatments, and clinic disinfection. Furthermore, certain guidelines and studies included important information concerning illness signs and symptoms, routes of transmission, and referral mechanisms, with the purpose of boosting dentists' knowledge and prevention strategies to contribute to population-level disease control and prevention.^[1,12]

Dentists are considered to be at the highest risk for the contract and transmission of the corona virus among all health professions.^[5] Dental treatments may be ascribed to these concerns due to their unique character, such as aerosol

creation, sharps handling, and caregiver proximity to the patient's oropharynx region.^[1,6] As a result, dental practitioner is at a greater threat for developing an infection from a patient and spreading it to their loved ones. Furthermore, if adequate safety precautions are not implemented, dental clinics are likely to expose patients to cross contamination.^[6] Globally, dental authorities' reactions and actions ranged from suggesting dentists stop practicing in California, USA, to urging dentists close their clinics,^[15] to refusing routine tests in the United Kingdom.^[16] On April 16,2020, the Indian Dental Council released an advise stating that dental practitioner must follow certain guidelines, henceforth strictly adhere to all decontamination, disinfection, and sterilization protocols in dental clinics, permitting for a maximum of three or four patients per day. In the near future, the council also recommends only emergency dental procedures, which will have an impact on dentists' financial situation.^[5] The SARS-CoV-2 pandemic, on the other hand, could be ended in less than 18 months, according to the US government's SARS-CoV-2 response plan, which was revealed on March 13, 2020. Shutting down dental services during an outbreak may lower the number of people infected, but it would exacerbate the misery of those who require immediate dental care.^[3] Dental professionals are currently being put to the test in ways they had not anticipated.^[4] With the rising prevalence of this unique disease, dentists must be better prepared to diagnose a possible SARS-CoV-2 infection and refer patients with a suspect, established, or past SARS-CoV-2 infection to appropriate treatment centers.^[6] Moreover, health-care facilities are an essential aspect of any community and cannot be stopped for a long period of time during pandemic conditions.^[17]

Objectives

Many dental clinics lack the basic minimum standards for infection control, despite the availability of disease prevention standards and regulations, due to low motivation in following the necessary procedures. This low motivation in putting in the extra, but essential, effort could be due to the large number of patients who are treated for free or at a reduced cost.^[18,19] Thus, the study aimed to investigate dental practitioner attitudes, perceptions, and awareness of SARS-CoV-2 and disease management in the Namakkal district.

Procedure

The participants in our research included dental practitioner from the Namakkal district, regardless of whether they worked in private health center, hospitals, or government health centers. This survey was carried out in May 2020. The data were gathered using an online questionnaire created with Google Forms. The dentists were chosen from WhatsApp groups of dentists. However, each randomly selected participant was contacted to check that he or she was a dentist from the Namakkal district. The questionnaires were designed to be anonymous to protect the privacy and confidentiality of all information gathered during

the study. The Institutional Ethics Committee provided ethical approval.

Study instrument

After reviewing relevant studies and international norms,^[1,14-16] the survey questionnaires were designed. The questionnaire was developed in English and had a series of questions concerning sociodemographic characteristics, dentist understanding, perspectives, and views of SARS-CoV-2, and disease management in dental clinics. The analysis was formalized as multiple-choice quiz split into a number of questions: Dentists' segment of the population and profession-related qualities, dentists' knowledge and understanding of the gestation period, disease symptoms, mode of transmission of SARS-CoV-2, and preventive services for trying to prevent SARS-CoV-2, and dentists' behavior against treating a patient with SARS-CoV-2.

Data analytics

The IBM SPSS Statistics for Windows, Version 20.0, Armonk, NY: IBM Corp., was used to analyze the data. Continuous variables were described using means and standard deviations, whereas categorical data were described using percentages.

Results

The characteristics of dentists participating in the study

There was a total of 207 dentists in this study (98 males and 109 females). Table 1 lists the characteristics of the participants. A total of 162 (78.3%) have completed their postgraduate program in dentistry, 38 (18.4%) are practice dentistry, and the remaining (3.4%) are working as faculty in an education institution.

Knowledge of the SARS-CoV-2 infection's incubation period, symptoms, and transmission pathway

Majority of dentists (98.6%) stated that respiratory droplets are the primary mode of transmission for the novel coronavirus, and a comparable percentage of them correctly stated the infection's incubation period. When asked about moderate symptoms (96.6%), reducing virus transmission (99.5%), and plasma therapy, they gave a high percentage of right answers. However, it was surprised to learn how few of them (23.7%) could correctly answer questions about the viral infection's diagnosis and the proper distance to preserve social distance (64.7%).

Almost all of the participants (99% and above) were aware of the novel coronavirus's origins and that practicing dentists were at a higher risk of infection. Although all of the respondents (100%) were aware of the PPE utilized in this situation, just a small percentage (2.5%) did not prefer to use it. About 99.5% of them agreed that social isolation should be used as a containment measure to stop the outbreak, and 99.5% of them correctly identified the age group in which the disease spreads the most. Only a small percentage of those polled (81.6% and 73.9%, respectively)

Table 1: Questions for the study

Gender	
Male	
Female	
Age group (years)	
<30	
30-50	
>50	
Are you a	
Postgraduate	
Practitioner	
Faculty	
Number of years of experience in field (years)	
<5	
5-10	
>10	
What is novel coronavirus?	
It is a large family of virus	
Belong to family of Nidovirus	
All of the above	
Top of Form	
Respiratory droplet is main source of transmission for novel coronavirus	
True	
False	
Novel coronavirus incubation period ranges from	
2-3 months	
1-2 months	
2-14 days	
Novel coronavirus is diagnosed by	
PCR	
ELISA	
Both of the above	
Social distance to be maintained from COVID-infected patient is	
At least 3 feet	
At least 2 feet	
At least 1 feet	
Novel coronavirus infection transmission can be decreased by	
Hand hygiene	
Social distance	
PPE	
All of the above	
Mild symptoms of novel coronavirus are?	
Fever	

(Contd...)

Table 1: (Continued)

Cough
Shortness of breath
All of the above
A clinical trial in which blood transfused from recovered COVID-19 patients to COVID-19 patients in the WHO is in critical condition
Plasma therapy
Solidarity
Hydroxychloroquine
Personal protection equipment's include
Gloves, gown
Goggles
N95 mask
All of the above
Special isolation is needed with patient infected with COVID-19
Agree
Disagree
Do not know
Practicing dentists are at high risk of getting infected by COVID-19?
Agree
Disagree
Do not know
Giving awareness regarding novel coronavirus outbreak and its prevention is important to patients
Agree
Disagree
Do not know
What kind of treatment procedure do you follow in your practice during COVID-19 pandemic?
Emergency dental procedure
Non-aerosol-producing procedures
Aerosol-producing procedures
In which age group, the COVID-19 spreads?
COVID-19 occur in all age groups
Older person and persons with pre-existing medical conditions are at high risk to develop serious illness
All of the above
Which country reported more death rate till now?
U.S.A
Italy
Spain
Name the vaccine that is jointly developed by the German company BioNTech and US pharma giant Pfizer for COVID-19?
BNT162B

(Contd...)

Table 1: (Continued)

Picovacc
Do not know
The first case of novel coronavirus was identified in
Wuhan, Hubei
Beijing
U.S.A
Which of the following diseases are related to coronavirus?
MERS
SARS
Both A and B
What are the precautions that need to be taken to protect from the coronavirus?
Cover your nose and mouth when sneezing.
Add more garlic into your diet
Wash your hands after every hour.
How does coronavirus transmit?
When a person sneezes or cough, droplets spread in the air or fall on the ground and nearby surfaces
If another person is nearby and inhales the droplets or touches these surfaces and further touches his face, eyes or mouth, he or she can get an infection
All of the above
Do you prefer using PPE?
Yes
No bottom of form

was aware of the details of vaccine development and the mortality rate in the worst-affected countries. Similarly, not everyone was aware of the disorders associated with this sickness (91.3%) or the steps that could be taken to avoid it (90.8%). Almost all of the dentists (99.5%) believed that raising patient awareness is critical.

Discussion

This study collects data on Namakkal district dental practitioner level of knowledge, perception, and attitude toward infection management, with a focus on SARS-CoV-2. During the 2020 outbreak, SARS-CoV-2 incubation period is expected to be 5–6 days on average and up to 14 days.^[6,7] While dental practitioner in this study varied in their understanding of the disease's incubation time, knowing the correct incubation period is critical since it plays a role in defining the safe period to treat suspicious patients.^[14] However, dental practitioner must always take preventive precautions with all of their patients. Previous research has indicated that dental practitioners have a poorer awareness of respiratory disease transmission than health-care providers.^[15,16] Regardless of the patient-provider proximity that exists in dental care,^[4] nonetheless, Namakkal district dental practitioner in

our study was able to identify the major signs of SARS-CoV-2, which enables dental practitioner to assess the hazard and take appropriate action, which is regarded as a cornerstone in disease treatment^[14] and control the spread of the disease.^[1] Regardless of the results presented here, it is critical to emphasize that this study had restrictions, including a small number of respondents, which resulted in a lower sample size than anticipated.

The short duration of data collecting could have contributed to this. Therefore, this is considered a modest sample size. Furthermore, because of the outbreak, many people were concerned with news and personal matters. This implies that only those who were popular on social networks (Facebook, Twitter, and WhatsApp) throughout the study's limited data collecting period were eligible to participate. This may create statistical bias and inaccuracy, impairing our ability to generalize our results.

Conclusion

The study was conducted to assess dentists' knowledge and attitudes about the COVID-19 pandemic and its prevention in a clinical environment in Namakkal district. We were able to include a nearly equal number of individuals from both gender groups. Overall, the participants demonstrated a good/above-average knowledge of the virus, its transmission, prevention, and therapy (around 90%–100% correct responses overall). The dentists, on the other hand, were unaware to social distance rules and the medical diagnosis of the same. Almost all of the participants agreed that they should share this knowledge with their patients, while a minority were skeptical. According to the findings of this study, dentists have excellent understanding and awareness of the epidemic.

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