ORIGINAL RESEARCH

Awareness, Perception, Attitude Regarding Covid-19 and Infection Control: Cross-Sectional Study among the Dentists of Saudi Arabia.

Sajda Khan Gajdhar[1], Shaiq Gajdhar[2], Shanthi Amit Vanka[3], Syed Mukith Ur Rahaman[1], Ammar Aljuhani4, Mohannad Alahmari[4]

Abstract

Introduction: Millions of people have died as a result of the Covid-19 pandemic caused by Sars-CoV-2. To increase awareness and knowledge of Covid-19, numerous online resources have been made available, particularly those pertaining to the dental profession. The purpose of this study was to determine dental professionals' knowledge, perceptions, and attitudes concerning Covid-19 in Saudi Arabia. We performed a study using a Google Docs questionnaire that was disseminated to 305 dentists practising in Saudi Arabia.

Materials and Methods: The questionnaire was divided into four sections: dentists' demographic and professional characteristics; dentists' awareness of the incubation period, disease symptoms, mode of transmission, and infection control measures for preventing Covid-19; and dentists' attitude toward treating patients with Covid-19. The questionnaire was completed by participants by selecting one response to each question. The descriptive statistics were used to analyze the data, which were expressed as frequencies and percentages. The chi-square test was used to examine the relationship between professional activity and knowledge, perceptions, and attitudes towards Covid-19.

Results: A total of 305 dentists took part in the survey, which resulted in a cohort of 305 dentists. Dentists in Saudi Arabia were well-versed in the signs and symptoms of Covid-19 infection in dental clinics, as well as the methods of transmission, infection control measures, and preventative techniques. Dentist, on the other hand, demonstrated a reasonable understanding of the additional preventative measures that can be taken to protect dental employees and other patients from Covid-19.

Conclusion: Saudi dentists have an acceptable level of knowledge and understanding of Covid-19. However, such advancements would benefit patient management throughout this pandemic. Due to the high risk of infection spreading and acquisition among dental workers or individuals due to the close contact with patients and the nature of dental treatment, it is critical for dentists to remain updated on current knowledge in this rapidly moving field. Dentists' infection control expertise should be reinforced through continuous educational programs.

Keywords: Covid-19, dental practice, prevention, awareness, infection control

Oral and Maxillofacial Pathology Journal (2023): ***https://www.ompj.org/archives***

Introduction

In December 2019, a dramatic outbreak of novel corona virus (2019-nCoV) began in the Chinese city of Wuhan and quickly spread throughout the country.[1,2] The World Health Organization (WHO) declared this outbreak a public health emergency of worldwide concern on January 30, 2020. (Mahase 2020). The novel coronavirus was initially designated 2019-nCoV before being dubbed severe acute respiratory syndrome coronavirus 2 officially (Sars- CoV-2). COVID-19 was recognized in 34 countries as of February 1, with a total of 378 million laboratory-confirmed cases and 5.67 million deaths (WHO 2020).[3]

Due to the nature of dental environments, the risk of cross infection between dental practitioners and patients may be rather significant. Strict and effective infection control policies are urgently needed for dentistry practices and hospitals in countries/regions that are (possibly) affected by Covid-19. 4 Human-to-human transmission has been hypothesized to occur via airborne droplets, touching or coming into contact with an infected person or contaminated surface. Additionally, alternative pathways such as blood or saliva

[1] Department of Oral Basic and Clinical Sciences, Ibn Sina National College for Medical Studies, Jeddah 22421, Kingdom of Saudi Arabia; [2]Department of Oral and Maxillofacial Rehabilitation, Ibn Sina National College for Medical Studies, Jeddah 22421, Kingdom of Saudi Arabia; [3]Department of Preventive Dental Sciences, Ibn Sina National College for Medical Studies, Jeddah, Kingdom Saudi Arabia; [4]General Dentist, Kingdom Saudi Arabia

Corresponding author: Sajda Khan Gajdhar, Department of Oral Pathology and Microbiology, Oral Basic and Clinical Sciences, Office No. 248, Ibn Sina National College for Medical Studies, 22421-Al-Mahjar Street, Jeddah, Kingdom of Saudi Arabia. Email Id: drsajdagajdhar@gmail.com

How to cite this article: Gajdhar SK, Gajdhar S, Vanka SA, Ur Rahaman SM, Aljuhani A, Alahmari M. Awareness, perception, attitude regarding covid-19 and infection control cross-sectional study among the dentists of Saudi Arabia. Oral Maxillofacial Pathol J 2023;14(1): page no. 56-59

Source of Support: Nil

Conflict of Interest: None

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have not been investigated but are theoretically plausible due to the known transmission of blood-borne infectious diseases such as HIV/AIDS, hepatitis C virus, and hepatitis B virus via blood or saliva. These modes of transmission add to the fear that Covid-19 could be transmitted in a similar manner in the dental environment.[5]

The dental clinics have great possibility of transmitting and acquiring the infection between dental staff or individuals; moreover, the dental clinic could create high risk environment for spreading this virus because of the very close contact with patients and the nature of the dental treatment.[6] Although Covid-19 patients are not meant to receive dental care, dental emergencies can occur and close contact is unavoidable. Additionally, the disease's relatively long incubation period (the median incubation period was estimated to be 5.1 days, 95 percent confidence interval [CI] 4.5-5.8 or up to 14 days in some cases before any symptoms could be detected) and post infection period make it difficult for medical personnel to recognize the presence of Covid-19 infections, potentially increasing disease transmission during these lay periods.[7-8] Therefore, patients infected with Covid-19, without showing symptoms, are of a great threat to dentists and other members of the dental team. Dentists, thereby, should entertain a high level of awareness and integrity to deal with the disease and be able to control and manage its spread.

There are practical guidelines recommended for dentists and dental staff by the Centres for Disease Control and Prevention (CDC), the American Dental Association (ADA), and the World Health Organization to control the spread of Covid-19.[9-11] As with other infectious illnesses, these suggestions include the use of personal protective equipment, thorough patient evaluation, rubber dam isolation, use of an anti-retraction handpiece, mouth rinse prior to dental treatments, and clinic disinfection. Additionally, some guidelines and reports have provided useful information about disease signs and symptoms, modes of transmission, and referral mechanisms in order to increase dentists' knowledge and prevention practices, allowing them to contribute to disease control and prevention on a population level.[9-11]

Despite the availability of disease prevention standards and suggestions, many dental practices do not meet the minimal infection control requirements, owing to a lack of interest in following the essential procedures. It is critical to adopt effective prevention procedures in dental clinics and hospitals and to raise dentists' understanding of the importance of prevention. Thus, the purpose of this study was to ascertain Saudi dentists' level of awareness, perception, and attitude of Covid-19 and infection management.

Material and Methods

This study was descriptive, cross-sectional study. The study population consist of dentists who work in Saudi Arabia,

Table 1: How many years of clinical experience Sociodemographic details of the responses

Variables		5-10 years n (%)	>10 years n (%)	Chi square value	P value
I am a registered dentist in KSA	No	17(7.4%)	14(18.4%)	7.588	0.006
	Yes	212(92.6%)	62 (81.6%)		

Table 2: Response of participating dentists to practice related questions about COVID-19 (No = 305).

No.	Question	Dentists' Response n (%)	
		Aware correctly	Not aware
1.	Do you know the incubation period of Covid-19?	245 (80.3)	59(19.7)
2.	What are the most common symptoms of Covid-19?	285 (93.4)	19(6.5)
3.	Do you know the main mode of transmission of virus from person to person?	229 (75)	75(25)
4.	Do you know the distance considered as a "close contact"?	250 (81.9)	54(18.1)
5.	Do you know Pre-screening for Covid-19 should be done according to MOH Guidelines,	300 (98.3)	4(1.6)
6.	How to carried out Aerosol generating procedure to prevent spread of infection.	265 (86.8)	39(13.1)
7.	Do you wear Personal Protective Equipment (PPE) while preforming aerosol generating procedure?	260 (85.2)	44(14.7)
8.	Do you think a N-95 mask should be worn in dental practice rather than an ordinary mask?	260 (85.2)	44(14.7)
9.	Do you know 4 handed technique is recommended to decrease exposure to infectious agents?	221(72.4)	83(27.5)
10.	Do you use Anti retraction dental hand pieces at your clinic?	236 (77.3)	68(22.6)
11.	Do you ask patients to sit far from each other and maintain social distancing?	295 (96.7)	9(3.3)
12.	Do you know the manual scaler preferred for scaling?	240 (78.6)	64(21.3)

regardless of their place of work, in private clinic, hospitals, health centres dental colleges and medical colleges. This survey was conducted in June-July 2020. An online questionnaire using Google Forms was used to collect the data. [1,8-10] The questions on the survey were developed after reviewing pertinent literature, international guidelines and MOH Saudi Arabia guidelines.[12] The questionnaire was designed in English and comprised of a series of questions pertaining to sociodemographic characteristics, the knowledge of dentists, and their attitudes and perceptions toward Covid-19 and infection control in dental clinics. The survey was a structured multiple-choice questionnaire divided into sections: dentists' demographic and profession-related characteristics; dentists' awareness of incubation period, the symptoms of the disease, the mode of transmission of Covid-19, and infection control measures for preventing Covid-19; and dentists' attitude toward treating patients with Covid-19. A total of 305 dentists were randomly selected to participate in the study. The questionnaires were anonymous to maintain the privacy and confidentiality of all information collected in the study. Ethical approval was obtained from the Institutional ethical committee.

Data were analyzed using SPSS software. Descriptive statistical analysis was used to describe items included in the survey. Means and standard deviations were used to describe the continuous variables, and percentages were used to describe the categorical data.

Results

The study cohort consisted of a total of 305 dentists who participated in the survey. Demographic features include 133 (39.3%) female and 172 (60.7 %) males, age range from 20 to 65 years old, and from 18 provinces in Saudi Arabia. The distribution of the professional affiliation includes 103 (30.6 %) academics, 89 (28.4%) national hospital practitioners, and 113 (41%) private hospital/private practice practitioners as shown in table 1. 229 (75.1%) no of dentist had less than 10 years of experience and 76 (24.9%) no of dentist had more than 10 years of experience.

The responses received from the dentists are given in table 2. The majority of the 305 dentists reported that cleaning hands frequently by using alcohol-based hand rub or soap and water, routinely cleaning and disinfecting surfaces in contact with known or suspected patients, and wearing personal protective equipment can help prevent transmission from patients with known or suspected Covid-19. When asked about the incubation period, Majority of dentists (n=245, 78%) were aware for incubation time of Covid-19 correctly reported 1-14 days. (p value 0.032). Majority of the dentists had answered correct about the most common sign and symptoms of Covid-19. (p value 0.00).

The majority reported fever and cough as symptoms. Diarrhoea, vomiting, and runny nose were reported by almost one-third of dentists. Joint and muscle pain was reported by only a few dentists. A total of 229 (75%) of the dentists perceived Covid-19 spread from person to person, 121 (35.4%) dentists agreed with spread of Covid-19 from contact with contaminated surfaces and objects. The majority (n=290, 95.08%) reported that it is important to educate people about Covid-19 to prevent the spread of the disease.

Majority of dentist (265) agreed to perform the Aerosol generating treatment procedure in well ventilated area to prevent spread of Covid-19 infection.

Approximately 82% (n=250) of the dentist were aware of the meaning of closed contact. 245 out of 305 dentists believed that aerosol generated procedures should be carried out in ventilated single room. 221 dentists were aware of 4 handed techniques in dentistry to decrease exposure of infectious agents. 240 dentists believed to use manual scalers for scaling.

290 dentist believed Pre-screening for Covid-19 should be done according to MOH Guidelines. Delay of the dental treatment for patients showing suspicious symptoms related to Covid-19, a belief that a N-95 mask and PPE should be worn in dental practice (N=260, 85.2 %).

236 dentists were aware of anti-retraction hand pieces are strongly recommended. Regarding dentists' precautionary actions in the dental clinic, a total of 295 (96.72%) believed that it was necessary to ask patients to sit far from each other, wear masks while in the waiting room, and wash hands before getting in the dental chair to decrease disease transmission, while 10 (3.27%) believed that this was not necessary and could cause panic. However, a total of 252 (82.62%) dentists reported that they prefer to avoid working with a patient with a suspected case of Covid-19.

Discussion

The outbreak of the Covid-19 pandemic has put a great deal of strain on workers in the health-care industry, and the creation of methods to restrict the spread of the virus has become a top priority as a result. While it is the role of health authorities in any country to offer guidelines and orientation on best practices during a health crisis, health practitioners should follow any provided guidelines or recommendations. This survey provides an insight on the level of awareness, perception, and attitude of Saudi Arabia dentists on infection control with a special emphasis on Covid-19 at the time of the outbreak in 2020. This study included a sample of Saudi Arabia dentists.

Albaker et al.[12] estimated that Saudi Arabia has 16,887 dentists. The majority of dentists in our study are registered as general dentists (n=274, 90%). The percentage of male dentists who are general dentists is higher than the percentage of female dentists (60.7 % versus 39.3%). Saudi dentists account for 45% of the total number of 305 dentists. In this survey response, Over 80% of Saudi dentists work in the Riyadh, Makkah, and Eastern province regions. Approximately 66 percent of Saudi dentists work in public health, compared to only 20.46 percent of non-Saudi dentists. The results indicate that this study sampled dentists with less than 10 years and more than 10 years of both sexes and with varying levels of clinical experience. Additionally, it included Saudi and non-Saudi dentists, generalists and experts in dentistry. Additionally, the dentists surveyed represented a cross-section of Saudi Arabia's geographical regions, with the majority hailing from the Asir province. With this study group, the findings are more likely to reflect the current infection control procedures and degree of awareness on Covid-19 among practicing dentists in Saudi Arabia.

The estimated incubation period of Covid-19 is up to 14 days.[5-7] Dentists in this study varied in their knowledge about the incubation period of the disease, but it is essential to know

the right incubation period because of its role in determining the safe period to treat suspected patients.[7] However, it's imperative for dentists to carry on with preventive measures for all their patients, all the time. Knowledge about respiratory disease contagion was noticed in other studies to be lower among dentists than among other health care providers, despite the proximity of patient to provider present in dental care.[4-7] Nonetheless, dentists in this sample could identify the main symptoms of Covid-19, which helps dentists to recognize the threat and take the necessary actions and is considered essential in the management and control of the spread of the disease.[1]

With respect to the role of droplets, aerosols and airborne particles in the transmission of Covid-19 in the dental clinic, the results show an adequate level of awareness among dentists (87.1%). This is in line with the results of a recent Saudi survey that indicated 92% of the participants believed that the mode of transmission of Covid-19 was droplet inhalation.[12]

Dentists' response to prevention measures were better for personal protective equipment and disinfection and sanitation procedures than for measures applied to dental staff or patients, such as special clothing or ventilation. The latest precautionary actions could possibly be viewed by dentists as extra protective measures that are not necessary when combined with their understanding that infections occur mainly through direct contact between mucous membranes and contaminated hands.[9]

There has been no evidence-based specific treatment for Covid-19, and management of Covid-19 has been largely supportive.[8] The current approach to Covid-19 is to control the source of infection; use infection prevention and control measures to lower the risk of transmission; and provide early diagnosis, isolation, and supportive care for affected patients. This fact was reflected by the response of participants to treatment; almost half of dentists thought that the disease self-resolves over time with no need for special treatment.[13]

Conclusion

Dentists practising in Saudi Arabia were well aware of the symptoms, method of transmission, infection control, and prevention strategies associated with Covid-19 infection in dental clinics. This can be attributable to the enormous efforts made by the Saudi Ministry of Health to educate health personnel and the general public about the pandemic and the danger of transmission that is linked with it. In addition, the Saudi Ministry of Health developed guidelines and mandated stringent infection control procedures in hospitals and medical centres throughout the country.[14]

Dentists, on the other hand, had a satisfactory understanding of the additional preventative steps that safeguard dental personnel and other patients from Covid-19. It should be borne in mind that during a Covid-19 pandemic, every patient attending the dental clinic should be regarded possibly infected, and current infection control standards should be followed during all dental procedures. This necessitates that dentist remain updated on the most recent advancements in this field.

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